May 27, 2016

Steve Ferrara
Pacific Gas and Electric Company
245 Market Street, Mail Code N10A
San Francisco, CA 94105

Dear Mr. Steve Ferrara:

RE: CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION ACTION AND ORDER FOR THE VACA DIXON-LAKEVILLE 230 KILOVOLT (KV) RECONDUCTORING PROJECT (SB13005)

Enclosed please find a Clean Water Act Section 401 Water Quality Certification and Order (Order), authorized by the Executive Director of the State Water Resources Control Board, Mr. Thomas Howard. This Order is issued to Pacific Gas and Electric Company (PG&E) for the Vaca Dixon-Lakeville 230 Kilovolt (kV) Reconductoring Project (Project). Attachments A through H of the Enclosure are also part of the Order.

This Order is issued in response to an application submitted by PG&E for proposed Project discharges to waters of the state, to ensure that the water quality standards for all waters of the state impacted by the Project are met. You may proceed with your Project according to the terms and conditions of the enclosed Order.

If you require further assistance, please contact me by phone at (916) 341-5587 or by email at Joanna.Jensen@waterboards.ca.gov. You may also contact Bill Orme, Chief of the Water Quality Certification and Wetlands Unit, by phone at (916) 341-5464 or by email at Bill.Orme@waterboards.ca.gov.

Sincerely,

Joanna Jensen
Environmental Scientist
Division of Water Quality – Water Quality Certification and Wetlands Unit
State Water Resources Control Board

Enclosures (1): Section 401 Water Quality Certification action and Order for the Vaca Dixon-Lakeville 230 Kilovolt (kV) Reconductoring Project

cc: [Via email only] (w/ enclosure):

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cc: (w/ enclosure)
Interested Persons
LYRIS List

CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION AND ORDER

Reg. Meas. ID:	393490
Place ID:	799612
SWRCB ID:	SB13005
USACOE#:	2014-00091N

Effective Date: May 27, 2016

Program Type: Fill/Excavation

Project Type: Overhead Utility

Project: Vaca Dixon-Lakeville 230 Kilovolt (kV) Reconductoring Project (Project)

Applicant: Pacific Gas and Electric Company

Applicant Contact:
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State Water Board Contact Person:
If you have any questions, please call State Water Resources Control Board (State Water Board) Staff listed above or call (916) 341-5569 and ask to speak with the Water Quality Certification and Wetlands Unit Program Manager.

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I. Order

This Clean Water Act (CWA) Section 401 Water Quality Certification and Order (Order) is issued at the request of Pacific Gas and Electric Company (herein after Permittee) for the Project. This Order is for the purpose described in the application and supplemental information submitted by the Permittee. The application for Certification was received on September 11, 2013. The application was deemed complete on May 15, 2015. Prior to receiving a complete application, State Water Board staff issued a notice of incomplete application and the Permittee responded to the request for application information on the following dates (see Table 1).

Table 1. Record of Complete Application

Date of Notice of Incomplete Application	Date all requested information was received.
September 18, 2013	May 15, 2015

State Water Board staff requested additional information necessary to supplement the contents of the complete application and the Permittee responded to the request for supplemental information on the following dates (see Table 2).

Table 2. Record of Supplemental Application Information

Date of first Request for Supplemental Information	Date all requested information was received.
October 9, 2013	July 7, 2015

Additionally, State Water Board staff issued a Denial Without Prejudice on October 25, 2013, to allow time for preparation of a draft initial study/mitigated negative declaration (IS/MND).

II. Public Notice

The State Water Board must comply with the California Environmental Quality Act (CEQA; Pub. Resources **Code**, Section 21000 et seq.), when issuing an Order. The State Water Board, as lead agency for CEQA compliance for the Project, directed the preparation of a draft IS/MND). On September 16, 2014, the State Water Board issued a public notice of intent to adopt the IS/MND for the Project, as well as notice of application for Water Quality Certification pursuant to California Code of Regulations, title 23, section 3858. The public comment period for the draft IS/MND was from September 22, 2014 through October 22, 2014. The State Water Board received no comments.

III. Project Purpose

The Vaca Dixon-Lakeville 230 kV transmission line provides electricity to the North Coast and northern San Francisco Bay Area. The Permittee proposes to replace (reconductor) the existing conductors on the double-circuited Vaca Dixon-Lakeville line with conductors having an increased emergency rating in order to ensure power transmission during peak conditions and meet projected increasing electric load demands in Lake, Mendocino, and Sonoma counties and portions of Napa and Marin counties. The Permittee proposes to add 700

megawatts of capacity to the line, which would increase flexibility, reliability, and responsive support in the service area during outages within the local system. The Permittee has stated that the modifications and improvements associated with the project will provide the infrastructure necessary to maintain voltage and prevent service interruptions.

IV. Project Description

The Project includes the following components:

1. Replacing approximately 40 miles of double-circuited transmission line, including the Vaca Dixon-Lakeville 230 kV circuit and the Vaca Dixon-Tulucay-Lakeville 230 kV circuit, with a higher capacity 700-megawatt capacity conductor.
2. Modifying electrical hardware and equipment, including insulators, to all 189 existing steel lattice towers along the Vaca Dixon-Lakeville line and to equipment at the Vaca Dixon, Tulucay, and Lakeville Substations to accept the new conductors and accommodate the new line rating.
3. Installing 15-foot-tall or 16.5-foot-tall cage-top extensions on approximately 39 existing lattice steel towers to provide appropriate clearance.
4. Replacing one existing light-duty steel pole located in Tulucay Substation with a tubular steel pole.
5. Replacing one lattice breakaway H-frame structure within Lakeville Substation with a new tubular steel breakaway H-frame structure.
6. Installing stabilizing guy wires and anchors at one existing steel lattice tower for increased stability and high-wind protection.
7. Lowering two existing distribution lines crossing beneath the Vaca Dixon-Lakeville Line to provide safe clearance.
8. Equipping four towers with red obstruction lighting in accordance with Federal Aviation Administration requirements.
9. Reinforcing one tower's foundation.
10. Installing a temporary line of wood poles within 1,000 feet of the Tulucay Substation to provide system redundancy if any outages occur during construction.
11. Establishing temporary tower work areas at the base of most towers to allow for the positioning of construction equipment, personnel, or materials.
12. Establishing about 13 temporary pull sites along the alignment, approximately every 2 miles, generally beneath or immediately adjacent to the existing line. Pull sites accommodate line trucks and other equipment necessary to remove and reinstall conductors.
13. Establishing about 36 temporary helicopter landing zones. Helicopters are used to fly construction crew or materials to towers.
14. Establishing approximately 5 temporary construction yards that would be used for construction equipment and materials storage and assembly; personnel and construction trailer/vehicle parking; and a meeting area for project management and crews. The Permittee plans to use several existing PG&E-owned industrial facilities in the general project vicinity, including equipment yards at Vaca Dixon, Tulucay, and Lakeville

substations, as well as a gravel yard at the Vaca Dixon Solar Photovoltaic Plant near Vaca Dixon Substation.

15. Installing approximately 114 temporary guard structures at crossings of energized electric lines, communication facilities, and/or major roadways to prevent the conductor from unsafely sagging during removal or installation of the conductor.

16. Modifying existing access roads to accommodate construction activities and access requirements. To access construction work areas, the Permittee will use a network of about 40 paved roads (approximately 65,534 feet in length), 190 dirt roads (approximately 344,288 feet in length), and 85 overland routes (approximately 42,354 feet in length) that are routinely used for operation, maintenance, and inspection of the existing line. The Permittee may also grade new temporary unpaved roads to provide access to the towers along the Project alignment. Many of the unpaved access roads will require improvements, such as grading and widening. Overland travel routes may be mowed for fire prevention purposes. In several locations where access roads cross drainages, creeks, or other water features, the Project will require improvements to crossings, including installing one temporary culvert and one new culvert, replacing two existing culverts, reinforcing four existing culverts, and installing nine at-grade (or Arizona-type) crossings to allow for the safe passage of construction equipment. A temporary bridge crossing may be constructed at one high-flow crossing.

V. Project Location

The approximately 40-mile Vaca Dixon-Lakeville transmission line is located in Solano, Napa, and Sonoma counties, primarily spanning rural residential, agricultural, and undeveloped areas. Beginning at Vaca Dixon Substation (Latitude: 38.401833° Longitude: -121.921167°) in the City of Vacaville, located in Solano County at 5221 Quinn Road, the Vaca Dixon-Lakeville line travels approximately 4.1 miles west to Gibson Canyon Road north of Vacaville, and then travels about 19.1 miles southwest to Tulucay Substation located near the intersection of Highway 221 and Anderson Way, south of Napa. From Tulucay Substation (Latitude: 38. 247859° Longitude: -121.267995°), the transmission line travels approximately 16.9 miles west to Lakeville Substation (Latitude: 38.250904° Longitude: -121.581356°), adjacent to the intersection of Old Adobe Road and Frates Road near the City of Petaluma. The Vaca Dixon-Lakeville line crosses Interstate 505 and Highways 12, 29, 116, 121, and 221 and several waterways, including the Napa River and Sonoma Creek. Maps showing the Project location and impact sites are located in Attachment A of this Order.

VI. Project Impact and Receiving Waters Information

The Project is located within the jurisdictions of the San Francisco Bay Regional Water Quality Control Board and the Central Valley Regional Water Quality Control Board (collectively, Regional Water Boards). Receiving waters and groundwater potentially impacted by this Project are protected in accordance with the applicable water quality control plans (Basin Plans) for the Regions and other plans and policies which may be accessed online at: http://www.waterboards.ca.gov/plans_policies/. The Basin Plans include water quality standards which consist of existing and potential beneficial uses of waters of the state[1], water quality objectives to protect those uses, and state and federal antidegradation policies.

[1] "Waters of the state" means any surface water or ground water, including saline waters, within the boundaries of the state. [Wat. Code, § 13050, subd. (e)].

Project impact and receiving waters information can be found in Attachment B. Table 1 of Attachment B shows the receiving waters and beneficial uses of waters of the state impacted by the Project. Individual impact location and quantity is shown in Table 2 of Attachment B.

VII. Description of Impacts to Waters of the State

This Order authorizes permanent and temporary impacts to waters of the state caused by the Project to streams and wetlands. Permanent impacts are categorized as those resulting in a physical loss of area or permanently degrading the ecological condition of a water of the state. Impacts are considered temporary, if the affected area can be restored to pre-project conditions within a short period of time.

Two types of Project activities—drainage crossing improvements and installation of temporary guard structures—could potentially result in temporary or permanent impacts to waters of the state. These activities are described in detail, below. However, according to the Permittee, not all of the proposed activities may be necessary depending on various factors, including weather constraints and contractor needs.

In several locations where access roads cross drainages, creeks, or other water features, the Project may require improvements to crossings, including installing a temporary culvert at Site 1, installing new culverts at Site 13, replacing existing culverts at Sites 4 and 12, reinforcing existing culverts at Sites 3, 5, 7, and 11, and installing at-grade crossings at Sites 2, 6, 10, 14, 15, 16, 17, 18, and 19 to allow for the safe passage of construction equipment. A temporary bridge crossing may be constructed at Site 9 that would span from bank to bank of the drainage feature, and would not result in either temporary or permanent fill of the drainage feature.

For culvert replacement, excavators or hand tools will be used to expose the existing culvert, which will then be lifted from the drainage using a backhoe or other piece of equipment and hauled off site. To install new or replacement culverts, the crossing will be prepared using backhoes and hand equipment. This work will include clearing a linear section of the drainage and removing extraneous debris. A new, appropriately sized culvert will be placed at the crossing using a backhoe or equivalent equipment. The culvert will then be backfilled with dirt and/or gravel. For culvert reinforcement, a backhoe or other piece of equipment will be used to add fill (dirt and/or gravel) atop the existing culvert to reduce the risk of culvert exposure. Native material will be used for backfill and culvert reinforcement as much as possible and imported dirt will only be used as necessary. The culvert improvements will be permanent to allow for continued use of these crossings to support operation and maintenance activities after construction is completed. One culvert improvement will be temporary (at Site 1), to allow for the use of a construction work area. Installation of this culvert will be completed in the same manner as described previously; however, the temporary culvert will be backfilled with gravel only.

At-grade crossings may be installed for the watercourses with larger flows, where culverts are impractical. This work generally includes grading the access road on either side of the watercourse to provide a slope that can be negotiated by construction vehicles, excavating large rocks and unsuitable material from within the watercourse, and placing larger base rock through the watercourse along the path of travel. The larger rock will be surfaced with smaller aggregate that is more suitable for vehicle traffic across the watercourse. All aggregate and rocks delivered to the site will be pre-washed.

In addition, the Permittee has identified one location (Site 20) where the use of temporary guard structures, which consist of wood poles, will result in temporary fill of a wetland/perennial stream during construction activities. At this location, approximately four 24-inch-diameter wood poles will be temporarily installed at an aboveground utility (existing distribution line) crossing to prevent the conductor from sagging onto the energized electric distribution line during removal or installation of the conductor. The poles will be buried approximately 7 to 8 feet below ground, and will extend approximately 25 feet above ground. Once construction is complete, the wood poles will be removed from this location.

Further information about each aquatic impact site is listed below:

Site 1 – Temporary Culvert:

Site 1 is located within a shallow artificial channel/wetland swale, immediately outside the Vaca Dixon Substation, with an approximate width of 25 feet and bordered by California annual grassland. The feature is a small unnamed drainage, tributary to Gibson Canyon Creek. A temporary culvert consisting of two 36-foot-long and 30-inch-wide side-by-side corrugated metal pipes (CMPs) will be installed. The culvert will be backfilled with up to 64 cubic yards of dirt and/or gravel to provide a minimum of 30 inches of cover over the CMPs to create a 14-foot-wide level road across the drainage. The backfill will extend laterally for approximately 10 feet from each edge of the road crossing. At the inlet and outlet of each CMP and on the fill sloping from each side of the road, 6-inch rock riprap will be installed to roughly 1-foot above the culvert soffit. This crossing will create a temporary disturbance of up to 36 linear feet and 0.016 acres within the channel. After Project construction is completed, the fill and culvert will be removed and the site fully restored.

Site 2 – Permanent At-grade Crossing:

Site 2 is located within a wetland swale that is tributary to Alamo Creek, and has an approximate width of 5 to 15 feet. This feature drains to a nearby pond and is bordered by California annual grassland and open oak woodland. The site is heavily grazed. An at-grade crossing will occupy approximately 20 linear feet along the drainage, and will include an approximately 14-foot-wide finished road surface. Up to 50 cubic yards of silt and organic materials will be removed from this 800 square feet area to a depth of 1.5 feet. Once cleared, an equal volume of new clean aggregate will be replaced within the area. Equipment working at this site will be positioned within approximately 15-foot wide by 50-foot long upland areas within the dirt access road on either side of the drainage. Additional 50-foot by 50-foot areas outside of the road may be utilized on either side of the crossing to allow for temporary storage of materials, or for vehicles to turn around. The aggregate will consist of 6- to 18-inch rock and gravel, and will provide a stabilized road surface for vehicles to cross the wetland. Up to 20 linear feet and 0.018 acres of wetland habitat is estimated to be permanently impacted.

Site 3 – Permanent Culvert Extension:

Site 3 is located within an intermittent unnamed tributary to Alamo Creek with a defined bed and bank. The channel is approximately 20 feet wide upstream from the culvert and less than 10 feet wide downstream from the culvert. The surrounding vegetation type is patchy coast live oak woodland, blue oak woodland, and California annual grassland. An existing 12-inch pipe crossing beneath the road will be modified by extending the existing pipe from its outlet, with either one additional segment or a flared end section. The pipe extension will be backfilled with up to 30 cubic yards of fill and riprap, thereby widening the road crossing by an

additional 4 feet, which will restore it back to a total of 14 feet. Before placement of the backfill, all silts, organic material, rocks, debris, and unstable material beneath the exposed pipe will be removed. Up to 36 linear feet of the creek, and 352 square feet (0.014 acre) of the channel will be disturbed. Due to steep terrain, equipment working at this site will be positioned within the existing dirt road and materials will be delivered to the site when needed. All equipment will operate from upland areas above top-of-bank.

Site 4 – Permanent Culvert Replacement

Site 4 is approximately 130 feet west and upstream of Site 3. The channel is approximately 5 feet wide with a defined bed and bank, and shows little signs of erosion upstream from the existing 18-inch culvert, while downstream significant erosion is taking place, with evidence of exposed rock and a depression roughly 2.5 feet deep. The culvert at this location is severely eroded at the outlet and does not have sufficient storm flow capacity. Erosion under the pipe outlet has created a steep slope not suitable for construction vehicles. This existing vehicle crossing will be replaced in order to accommodate larger flows in this location, as well as allow sufficient stability for construction equipment. The existing pipe will be excavated, removed, and replaced with two 30-inch-wide CMPs, which are sized to accommodate a 100-year flood event. Approximately 840 cubic yards of existing fill within the drainage will be removed along with the existing pipe. Once cleared, the two CMPs will be placed within the drainage and buried. In addition to the existing 840 cubic yards of existing fill removed and replaced within the creek, up to 80 cubic yards of new fill and riprap will be placed in the drainage in order to create approximately 2:1 slopes on each side of the road crossing, tapered down to the openings on each end of the CMPs. This new fill deposited within this drainage will permanently impact approximately 312 square feet (up to 0.012 acres) and 20 linear feet of the drainage. Due to steep terrain, equipment working at this site will be positioned within the existing dirt road and materials will be delivered to the site when needed. All equipment will operate from above the top-of-bank.

Site 5 – Permanent Culvert Stabilization:

Site 5 is located within an intermittent drainage located along an unnamed tributary to Alamo Creek that is surrounded by blue oak woodland and has an approximate width of 5 feet. The channel has a defined bed and bank, and shows signs of significant erosion both upstream and downstream. An existing 12-inch-wide CMP at this location is eroded at the outlet, which has reduced the stability of the access road and exposed approximately 6 feet of pipe. It also has only approximately 6 inches of cover within the road and is in danger of collapsing under the load of construction vehicles. To reinforce the existing culvert, additional fill will be placed within the roadway above the top-of-bank to bury the CMP more deeply. Up to 32 cubic yards of riprap will be added to the drainage in order to rebury the exposed section of pipe and control future scour. This fill will extend approximately 5 feet from the downstream edge of the existing road, will be sloped at an approximately 2:1 ratio, and will be tapered towards the opening of the pipe creating a triangular area of fill. This new fill will impact approximately 37.5 square feet within the drainage. Equipment working at this site will be positioned within an approximately 15-foot wide by 50-foot long upland areas within the dirt access road on either side of the drainage. Additional 50-foot by 50-foot areas outside of the road may be utilized on either side of the crossing to allow for temporary storage of materials, or for vehicles to turn around. These areas will be located above top-of-bank. Up to 0.020 acres and 5 linear feet of stream habitat will be permanently impacted.

Site 6 – Permanent At-grade Crossing

Site 6 is located within an unnamed intermittent tributary to Alamo Creek. At this site, an old ranch road crosses the shallow watercourse that drops off abruptly into a deeply incised channel, apparently created by relatively recent erosion. It appears likely that a culvert once was in place but was washed away, and that traffic using the old road detoured upstream to avoid the eroded area. The channel is less than 5 feet wide upstream from the existing road crossing, where it is shallow, and 10 to12 feet wide in the deeply incised area. The surrounding area is vegetated with California annual grassland and interior live oak woodland. Improvement to the existing at-grade crossing is proposed, including widening and stabilization of the road crossing, which has been narrowed by erosion. The crossing will be widened from 6 feet to 14 feet by filing a portion of the downstream area that has been severely eroded. Up to 50 cubic yards of 6-inch riprap and dirt fill will be placed within the eroded area and contoured to create a new 8-foot by 20-foot addition to the road surface, as well as a tapering slope extending 14 feet from the edge of the road. Up to 22 linear feet and 0.007 acres of stream habitat is estimated to be permanently impacted by this work.

Site 7 – Permanent Culvert Extension and Stabilization:

Site 7 is located within an unnamed intermittent tributary to Alamo Creek that is surrounded by interior live oak woodland. An existing 36-inch CMP is currently in place at this location. Upstream from the culvert, the watercourse is shallow and only about one foot wide. The channel is incised downstream from the culvert and some evidence of erosion exists. Also, the thin layer of backfill over the pipe does not provide enough support for vehicles to cross without crushing the pipe. Further, the roadway width has been narrowed to approximately 10 feet by erosion at the pipe outfall. To widen the road surface, 6-foot CMP extensions will be added to each end of the existing CMP to lengthen the pipe by an additional 12 feet. This fill will be compacted to extend the width of the road by 2 feet on each side. The remaining fill will be compacted in an approximately 2:1 slope from the road level down to the pipe openings. The discharge of up to 7 cubic yards of fill within the drainage will permanently impact a total of 12 linear feet and about 0.005 acres of stream habitat. Construction equipment and materials needed for this work will be delivered to the site along an existing dirt access road. Equipment working at this site will be positioned within approximately 15-foot wide by 50-foot long upland areas within the dirt access road on either side of the drainage. Additional 50-foot by 50-foot areas outside of the road may be utilized on either side of the crossing to allow for temporary storage of materials, or for vehicles to turn around.

Site 8 – This proposed crossing has been eliminated:

Site 8 is located along an unnamed tributary to Laguna Creek, vegetated with California annual grassland and surrounding interior live oak woodland. At this site, the intermittent stream is incised 10 to 15 feet, with steep banks. The previous culvert crossing has completely failed. The stream has eroded around and below the culvert, so the 24-inch culvert is now exposed and perched within the channel. The Permittee initially proposed installing a new culvert crossing containing two, 36-inch, 54-feet long CMPs, which would have permanently impacted up to 54 linear feet and about 0.016 acres of stream habitat, and discharged up to 189 cubic yards of fill. Due to the unstable stream channel, and other complexities at this site, the Permittee is now proposing to conduct the necessary transmission tower modifications on the other side of the channel by helicopter instead. In addition, as part of the Restoration and Compensatory Mitigation Plan (Attachment C), the Permittee has committed to removing the non-functioning culvert and reshaping and

stabilizing the channel. The Permittee will also install a water bar to prevent further erosion of the south bank of the drainage.

Site 9 – Temporary Bridge:

Site 9 is located within Laguna Creek. The approximate width of the intermittent stream channel is 20 feet, with a well-defined bed and bank. The surrounding vegetation is riparian woodland, blue oak woodland, interior live oak woodland, and California annual grassland. The site is adjacent to a confluence of two low-gradient channels. An imbedded remnant of a large culvert is present about thirty feet downstream of the proposed crossing, causing channel erosion. The Permittee initially proposed replacing the existing culvert with a major at-grade crossing, which would have permanently impacted up to a total of 88 linear feet and 0.050 acres of stream habitat, and discharged up to 50 cubic yards of fill. However, due to complications related to the configuration of the site and large projected 100-year flood flows (256 cubic feet per second), the Permittee has now proposed to span the entire channel with a temporary 45-foot-long by 14-foot-wide bridge crossing at this location. Fabric will be placed under the footprint of the bridge approach ramps. No material will be placed within the bed or bank of the drainage, and there is therefore no anticipated impact to this site due to fill or excavation. The bridge will be delivered to the site, unfolded, and laid across the creek using a crane or small excavator. Rock will be placed on the fabric to construct approach ramps. Placement of the bridge should not affect adjacent riparian vegetation. After construction is completed, any material used within the road prism or upland area will be removed and the site will be restored. The Permittee has further proposed to remove the non-functioning culvert and reshape and stabilize the channel as part of the Restoration and Compensatory Mitigation Plan (Attachment C).

Site 10 – Permanent At-grade Crossing:

Site 10 is located within Laguna Creek, which is approximately 35 feet wide. A dirt road crosses the active streambed, which is approximately 10 feet wide, with a well-defined bed and bank. The site is surrounded by riparian woodland and interior live oak woodland. A 14-foot-wide at-grade crossing will be installed at this location. In order to prepare the site, large rocks will be cleared to provide a stable road surface for vehicles to cross the channel. Up to 50 cubic yards of uniform aggregate and riprap will then be placed within the channel to create a level vehicle crossing as well as necessary sloping contours along each bank. In total, the fill will be compacted over an approximately 730 square feet area (0.001 acre), which includes both 490 square feet of road surface, and 240 square feet of reinforcing slopes. This 730 square feet area will occupy approximately 34 linear feet along each bank of the creek, tapering to a 14-foot-wide crossing in the center. Construction of this crossing will generally be accomplished from the existing dirt road leading up to either side of the crossing.

Site 11 – Permanent Culvert Extension:

Site 11 is located within a tributary to Putah South Canal that is surrounded primarily by riparian woodland/blue oak woodland. The stream channel is approximately 8-10 feet wide, 4 feet deep, and with a defined bed and bank. Signs of erosion both upstream and downstream are evident. An existing 36-inch culvert at this location is severely eroded at the outlet, which has narrowed the width of the access road to approximately 7 feet. An approximately 10-foot-long pipe extension will be installed at the downstream outlet of the existing CMP. Up to 45 cubic yards of gravel and dirt fill will be placed over the pipe extension, and compacted and contoured to create 7 additional feet of level road surface, as well as compacted in a slope from the road level to the pipe outlet. This fill will be placed along approximately 17 linear feet of the creek and permanently impact up to 0.005 acre of the creek channel. Construction at

this crossing will be conducted using equipment staged in the existing road or adjacent upland areas above the top-of-bank outside of riparian vegetation. Because this is a relatively small crossing, construction will be conducted from the adjacent existing access road and outside the bed or bank of the channel.

Site 12 – Permanent Culvert Replacement:

Site 12 is located within an intermittent tributary to Putah South Canal that is surrounded by a narrow corridor of valley oak woodland, bordered by California annual grassland. The drainage has a defined bed and bank. The upstream drainage is only approximately one foot wide, widening to approximately 3 to 4 feet downstream. An existing culvert at this location has a buried inlet. Both the road crossing and the pipe outlet have washed out and are unsafe for vehicles. To improve the crossing to accommodate construction vehicles, the existing pipe will be removed and a new 36-inch CMP will be installed, which is sized to accommodate a 100-year flood event. Approximately 9.7 cubic yards of existing fill within the drainage will be removed along with the existing pipe. Once cleared, the new CMP will be placed within the drainage and buried. In addition to the original fill removed and replaced within the creek, up to 83 cubic yards of new fill and riprap will be placed in the drainage in order to widen the road crossing to 14 feet. The slope of the embankment on the downstream side the road will be tapered down to the opening of the CMP. Approximately 17 linear feet and 0.003 acre of the drainage downstream of the pipe will be permanently impacted. Equipment working at this location will be positioned within the existing access road on either side of the drainage. Because of narrow roads, materials will be delivered to the site as needed.

Site 13 – Permanent Culvert Installation:

Site 13 is located within an unnamed ephemeral tributary to Gordon Valley Creek and is surrounded by California annual grassland, with farm buildings located immediately to the south. The drainage has a defined bed and bank. The channel show signs of erosion upstream with an incised depression, about 4 feet deep and 2 feet wide. Downstream, the drainage widens to approximately 8 feet and 1 foot deep. The site has been heavily trampled by cattle. This drainage has no evidence of previous improvements. A culvert containing two new 24-inch CMPs will be installed at this location, which is sized to accommodate a 100-year flood event. The two CMPs will be placed within the channel and backfilled with about 35 cubic yards of fill. The fill will be compacted to create an approximately 14-foot-wide level road surface. From the upstream and downstream edges of the road surface, the fill will be compacted to slope down over approximately 10 linear feet in the drainage to the edges of the drainage bed. In total, the construction of the crossing will impact up to 0.006 acres and 34 linear feet of the creek. Construction of this crossing will occur from either side of the adjacent access road, or from within the footprint of disturbance in the creek. Any nearby staging of materials will occur above the top-of-bank.

Site 14 – Permanent At-grade Crossing:

Site 14 is located within a small intermittent tributary to Dug Road Creek that is surrounded by coast live oak woodland. The drainage is approximately 2 feet wide with a bed and bank, which flows directly across a dirt road through a channel approximately 4 inches deep. An at-grade crossing will be installed at this location, consisting of an underlayer of large rocks, surfaced with smaller aggregate that will be suitable for vehicles to cross. To improve the crossing, approximately 10 cubic yards of native material will be excavated over an approximately 20-foot by 14-foot area (280 square feet). Once removed, approximately 10

cubic yards of new clean 6-inch rock riprap will be replaced within the 280 square feet cleared area and compacted. This work will permanently impact 14 linear feet and up to 0.006 acres along the drainage. Construction equipment needed to excavate the existing materials and place the new rock will work from the existing access road, or from within the footprint of the new at-grade crossing, and thus, no additional construction impacts within the drainage will occur as a result of the construction process.

Site 15 – Permanent At-grade Crossing:

Site 15 is located within a wetland swale next to Dug Road Creek that is approximately 6 to15 feet wide, and crossed by an existing dirt road. The surrounding vegetation is California annual grassland, with coast live oak woodland to the east and west. The approximate width of the crossing is 10 feet. An at-grade crossing will be installed at this location, consisting of an underlayer of large rocks, surfaced with smaller aggregate that will be suitable for vehicles to cross. To improve the crossing, up to 15 cubic yards of native material will be excavated over an about 20-foot by 14-foot area (280 square feet) within the drainage. Once removed, up to 15 cubic yards of new clean 6-inch rock riprap will be replaced within the 280 square feet cleared area and compacted. This work will permanently impact about 14 linear feet and 0.006 acres along the drainage. Construction equipment needed to excavate the existing materials and place the new rock will work from the existing access road, or from within the footprint of the new at-grade crossing.

Site 16 – Permanent At-grade Crossing:

Site 16 is located within a wetland swale, next to an intermittent creek that is tributary to Green Valley Creek. This swale ranges from approximately 5 to 25 feet wide. The site is surrounded by riparian woodland/coastal live oak woodland. Heavy bioturbation is evident, which is most likely caused by a combination of wild boar and cattle. A dirt road crosses the swale at this site, and approximately 100 feet upstream an alternate crossing exists where vehicles also have crossed the swale. The approximate width of the crossing is 20 feet. This site does not have an incised channel, and an at-grade crossing will be installed, consisting of an underlayer of large rocks, surfaced with smaller aggregate that will be suitable for vehicles to cross. Up to 15 cubic yards of native material will be excavated over an approximately 20-foot by 14-foot area (280 square feet). Once removed, up to 15 cubic yards of new clean 6-inch rock riprap will be replaced within the cleared area and compacted. This work will permanently impact up to 14 linear feet and 0.006 acres along the drainage. Construction equipment needed to excavate the existing materials and place the new rock will work from the existing access road, or from within the footprint of the new at-grade crossing.

Site 17 – Permanent At-grade Crossing:

Site 17 is located where a ranch road crosses a broad, low-lying area in the upper headwaters of an intermittent steam that is tributary to Green Valley Creek, which contains mapped winter steelhead distribution. The upland vegetation adjacent to the site is California annual grassland, and the entire site is trampled and grazed heavily by cattle. The contours of the ephemeral channel/wetland swale are slight. The approximate width of the crossing is 20 feet. Upstream from the road crossing, an excavated seasonal pool is present and has a defined bed and bank. The compacted soil in the road bed appears to be functioning as a dam and impounding water in the pool. An at-grade crossing will be installed at this location, consisting of an underlayer of large rocks, surfaced with smaller aggregate that will be suitable for vehicles to cross. To improve the crossing, up to 10 cubic yards of native material will be excavated over an about 20-foot by 14-foot area (280 square feet). Once removed, up to 10

cubic yards of new clean 6-inch rock riprap will be replaced within the cleared area and compacted. This work will permanently impact up to 14 linear feet and 0.006 acres along the drainage. Construction equipment needed to excavate the existing materials and place the new rock will work from the existing access road, or from within the footprint of the new at-grade crossing.

Site 18 – Permanent At-grade Crossing:

Site 18 is located within an ephemeral tributary to Soscol Creek that is entirely surrounded by California annual grassland. Upstream from the approximately 5 to 10 feet wide dirt road crossing, this drainage appears to be a wetland swale, but a clearly defined bed and bank is present downstream. An at-grade crossing will be installed, consisting of an underlayer of large rocks, surfaced with smaller aggregate that will be suitable for vehicles to cross. To improve the crossing, up to 5 cubic yards of native material will be excavated over an approximately 20-foot by 14-foot area (280 square feet). Once removed, up to 5 cubic yards of new clean 3/4-inch rock riprap will be replaced within the 280 square feet cleared area and compacted. This work will permanently impact up to 14 linear feet and 0.006 acres along the drainage. Construction equipment needed to excavate the existing materials and place the new rock will work from the existing access road, or from within the footprint of the new at-grade crossing.

Site 19 – Permanent At-grade Crossing:

Site 19 is located within a wetland marsh that is tributary to Steamboat Slough. It is below the dam of an artificial pond. California annual grassland vegetation immediately borders the marsh, but most of the larger surrounding area is planted in vineyards. The wetland marsh, which is crossed by a ranch road, does not have an incised channel; rather, the flow is spread over a wide area. An at-grade crossing will be installed at this location to replace a ranch road, by placing up to 15 cubic yards of large 3-inch crushed rock over an area 14 feet in width and 20 feet in length (280 square feet). This work will permanently impact up to 14 linear feet and 0.006 acres along the drainage. Construction equipment needed to excavate the existing materials and place the new rock will work from the existing access road, or from within the footprint of the new at-grade crossing.

Site 20 – Temporary Guard Structure:

Site 20 is located within a wetland marsh/ tributary to Ellis Creek, which empties into the Petaluma River approximately 3.0 miles downstream. Petaluma River is designated critical habitat for steelhead. Freshwater marsh/red willow woodland borders the site. A small, ephemeral drainage with a defined bed and bank flows into the stream on the north side of the site. The marsh is part of a much larger linear marsh feature that extends for a considerable distance along this stream. Four 24-inch-diameter wood poles will be temporarily installed within the bank of the channel below an existing distribution line crossing to prevent the conductor from sagging onto the energized electric distribution line during removal or installation. The poles will be buried approximately 7 to 8 feet into the ground, and will extend approximately 25 feet above the surface. The poles will be installed using truck-mounted augers and line trucks positioned above the banks of the channel, two on each side. No motorized equipment will cross the channel; access will be from either side. About 4 cubic yards of material will be temporarily removed; this work will temporarily impact up to 15 linear feet and 0.006 acres of perennial stream/wetland. After construction is completed, the wood poles will be removed from this location and the site fully restored.

In summary, the Permittee initially proposed 24 impact sites, but have since eliminated six permanent impact sites. Four proposed sites (Sites 1N, 2N, 3N, and 4N) were avoided by choosing alternative routes. One stream crossing site (Site 9) was avoided by using a temporary bridge to cross the stream, rather than install permanent culverts at the site. The Permittee further determined that another stream crossing (Site 8) is unneeded, because the nearby tower can be accessed by helicopter.

Sixteen of the remaining sites are expected to have permanent impacts and two sites (Sites 1 and 20) will have temporary impacts. The total Project fill/excavation quantities for impacts at these eighteen sites are summarized in Table 3, below. For sites that are listed as a combination of wetlands and drainages ("wetlands/streams") in Attachment B, the impacts are split evenly between streams and wetlands.

Table 3. Total Project Fill/Excavation Quantity

Aquatic Resource Type	Temporary Impact[2]			Permanent Impact					
				Physical Loss of Area			Degradation of Ecological Condition Only		
	Acres	Cubic Yards	Linear Feet	Acres	Cubic Yards	Linear Feet	Acres	Cubic Yards	Linear Feet
Stream Channel	0.003	2	7.5	0.088	432	232	NA[3]	NA	NA
Wetland	0.019	66	43.5	0.039	100	69	NA	NA	NA

VIII. Avoidance and Minimization

In general, the Permittee is able avoid potential impacts to aquatic resources by conducting transmission tower modifications to the extent possible by helicopter and by making use of an existing network of roads to access most of the transmission corridor within the Project area. For instance, adverse impacts to vernal pools present at Tower Work Area 3 will be avoided by performing tower modifications using a helicopter or on foot. Similarly, impacts to brackish marsh around Tower Work Area 117 will be avoided by accessing the tower with a helicopter or on foot. Most proposed construction yards and material storage areas have been previously disturbed; thus, limited or no site preparation (e.g., minor grading, vegetation removal) is expected to be necessary at these sites.

The Permittee initially proposed 24 impact sites, but have since eliminated six proposed permanent impact sites (Sites 1N, 2N, 3N, and 4N, 8, and 9) , as describes above in section VII.

Sites with only temporary impacts (Sites 1 and 20) will be restored to pre-construction conditions as described in the Permittee's Restoration and Compensatory Mitigation Plan (Attachment C). Sixteen crossing sites with proposed permanent impacts are existing

[2] Includes only temporary direct impacts to waters of the state and does not include upland areas of temporary disturbance which could result in a discharge to waters of the state.

[3] NA means "No Applicable".

drainage crossings in need of repair or replacement that occur along access roads that have previously been disturbed. The proposed crossing improvements will therefore affect a relatively small area, and result in only incremental changes to the existing condition of the drainage feature and adjacent habitat at the crossings. Many of the proposed modifications will provide a net benefit to the affected streams. At Site 4, the modification includes removing an undersized 18-inch culvert and replacing it with two 30-inch culverts that can accommodate 100-year flood events. This will improve flow capacity and the hydrological function of the stream, and reduce the potential for flooding and erosion, and is therefore considered an overall beneficial improvement. At four crossings (Sites 3, 5, 7, and 11), the existing culverts will be reburied, extended, and repaired, which should reduce the potential for flooding and erosion at these sites. At Site 12, a non-functioning 36-inch culvert will be replaced with a new 36-inch culvert that can accommodate 100-year flood events. At Site 13, two 24-inch new culverts will be installed that accommodate 100-year flood events and allows safe vehicle crossing. While no previous crossing improvement exists here, Site 13 is very close to a farm, frequently trampled by cattle, muddy, and of low habitat value. At-grade crossings will be installed at the remaining nine sites.

The Permittee will further avoid and minimize impacts to waters of the state through implementation of various measures during construction. These measures include the conditions of this Order, and additional water and wildlife protection mitigation measures proposed by the Permittee (see pages 3-17 to 3-26 of the IS/MND for the Project and Attachment D). Three of these mitigation measures (APM-HYDRO-1 through APM-HYDRO-3) are specific to water resource impacts.

The Permittee-proposed measures include minimizing ground-disturbing activities (such as grading, blading, and cut and fill activities) and limiting these activities to the dry season to the greatest extent feasible. Exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered or covered, as needed, to reduce fugitive dust. Gravel or other substrates may be temporarily applied to help further control fugitive dust, as necessary. Generally, removed vegetation will be shredded in place and spread nearby, except in cases where doing so may promote the substantial spread of noxious weeds. During clearing activities, vegetation will be mowed or grubbed, leaving root systems intact wherever possible, to encourage resprouting and minimize erosion.

The Permittee will develop a Storm Water Pollution Prevention Plan (SWPPP) that will be submitted to State Water Board staff for review and approval prior to beginning construction. The SWPPP describes the Best Management Practices (BMPs) that will be implemented to protect water quality during Project construction.
To minimize the potential for release of hazardous materials and risk of upset, the Permittee will adhere to the measures detailed in the SWPPP for storage, refueling, and maintenance of helicopters, construction vehicles, and construction equipment during project implementation. The Permittee will review these measures with on-site personnel at the start of the Project, and when any new personnel are brought onto the Project. The briefing will cover the availability of spill kits, procedures for reporting, and cleanup procedures for the release of hazardous materials, and protocols for handling hazardous materials on site. The Permittee will meet all California Division of Occupational Safety and Health (Cal/OSHA) workplace safety standards to ensure worker safety in the handling and use of hazardous materials. These measures will be included in the Worker Environmental Awareness Program.

The Permittee will install Erosion Control Devices (ECDs) to prevent the acceleration of natural erosion and sedimentation rates. A monitoring program will be established to ensure that the prescribed BMPs are followed throughout project construction. ECDs will be on site and ready for installation before the start of construction activities and will be inspected before and after each qualifying storm event. ECDs will be maintained regularly and replaced as necessary throughout the course of construction.

Prior to construction, wetlands will be surveyed and flagged for avoidance and exclusionary buffers will be established around wetlands, as necessary. Wetlands and water resources will be avoided to the maximum extent feasible. If avoidance is not feasible and work will occur in wetlands and drainages, the Permittee will implement BMPs (including temporarily placing wooden, fiber, or metal mats or portable bridges at drainage and wetland crossings) to minimize downstream sedimentation, rutting of soils, and ground disturbance. The Permittee has prepared a Land Form and Grading Plan, which outline guidelines for access road and site disturbance to minimize run-off and erosion.

Sensitive and special-status amphibian, reptile, bird, mammal, and plant species will also be avoided and excluded to the extent possible, or relocated. No plastic monofilament netting will be used in areas with special-status reptile and amphibian species. Work within stream channels upstream of areas where steelhead may be present will be conducted during the dry season, when water is absent.

Although excavation activities associated with the Project are limited, in the unlikely event that groundwater is encountered, it will be pumped into a baker tank and discharged at an appropriate wastewater facility. Groundwater may also be used to control fugitive dust on site, as needed, and may be dispersed to other vegetated areas, on the condition that the reused groundwater does not result in ponding or flow into areas outside of the proposed construction footprint.

IX. Compensatory Mitigation

The Permittee is required to provide mitigation to replace temporary and permanent loss of streams and wetland area and function due to the Project. The Permittee has agreed to mitigation for temporary impacts, as described in section H, below. The Permittee has also agreed to compensatory mitigation for direct permanent impacts, described in section I, below.

X. California Environmental Quality Act (CEQA)

This Order, adopts an initial study/mitigated negative declaration (IS/MND) (State Clearinghouse (SCH) No. 2014092051) and approves the mitigation monitoring and reporting program (MMRP) (see Appendix D) for the Project. Pursuant to CEQA, the State Water Board has made Findings of Facts (Findings) which support the issuance of this Order and are included in Attachment E.

XI. Petitions for Reconsideration

Any person aggrieved by this action may petition the State Water Board to reconsider this Order in accordance with California Code of Regulations, title 23, section 3867. A petition for reconsideration must be received within thirty (30) calendar days of the issuance of this Order. The instructions for filing a petition for reconsideration may be found at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality.

XII. Fees Received

An application fee of $1,634 was received on September 9, 2013. The fee amount was determined as required by California Code of Regulations, title 23, sections 3833(b)(3) and 2200(a)(3), and was calculated as category A - Fill & Excavation Discharges with the dredge and fill fee calculator. An additional fee of $4,444 based on total Project impacts was received on August 5, 2014.

XIII. Conditions

The State Water Board has independently reviewed the record of the Project to analyze impacts to the environment and designated beneficial uses within the watersheds of the Project. In accordance with this Order, the Permittee may proceed with the Project under the following terms and conditions:

A. Authorization

Impacts to waters of the state shall not exceed quantities shown in Table 3.

B. Reporting and Notification Requirements

The following section describes the reporting and notification types and timing of submittals. Requirements for the content of these reporting and notification types are detailed in Attachment F, including requirements for photo and map documentation during the Project. Written reports and notifications must be submitted using the *Reporting and Notification Cover Sheet* located in Attachment F, which must be signed by the Permittee or an authorized representative.

1. Monthly Reporting

The Permittee must submit a *Monthly Report* (*Report Type 1)* to the State Water Board on the 15th of the month following the reporting period. Monthly reporting shall continue until the State Water Board issues a *Notice of Project Complete Letter* to the Permittee.

2. Annual Reporting

The Permittee must submit an *Annual Report* (*Report Type 2)* to the State Water Board each year on June 1st. Annual reporting shall continue until the State Water Board issues a *Notice of Project Complete Letter* to the Permittee.

3. Project Status Notifications

a. **Commencement of Construction:** The Permittee shall submit a *Commencement of Construction Report* (*Report Type 3)* to the State Water Board at least seven (7) days prior to start of initial ground disturbance activities.

b. **Request for Notice of Completion of Discharges Letter:** The Permittee shall submit a *Request for Notice of Completion of Discharges Letter* (*Report Type 4)* following completion of Project construction activities, including any required restoration and Permittee-responsible mitigation. This request shall be submitted to the State Water Board staff within thirty (30) days following completion of all Project construction activities. Upon approval of the request State Water Board staff shall issue a *Notice of Completion of Discharges* letter to the Permittee, which will end the active discharge period and associated annual fees.

c. **Request for Notice of Project Complete Letter:** The Permittee shall submit a *Request for Notice of Project Complete Letter (Report Type 5)* when construction and/or any post-construction monitoring is complete,[4] and no further Project activities will occur. This request shall be submitted to State Water Board staff within thirty (30) days following completion of all Project activities. Upon approval of the request the State Water Board staff shall issue a *Notice of Project Complete* letter to the Permittee, which will end the post-discharge monitoring period and associated annual fees.

4. **Conditional Notifications and Reports**
The following notifications and reports are required, as appropriate.

a. **Accidental Discharges of Hazardous Materials[5]:** Following an accidental discharge of a reportable quantity of a hazardous material, sewage, or an unknown material, the following applies (Wat. Code, § 13271):

i. As soon as (A) Permittee has knowledge of the discharge or noncompliance, (B) notification is possible, and (C) notification can be provided without substantially impeding cleanup or other emergency measures then:
- first call – 911 (to notify local response agency);
- then call – Office of Emergency Services (OES) State Warning Center at: (800) 852-7550 or (916) 845-8911;
- Lastly follow the required OES procedures as set forth in: http://www.caloes.ca.gov/FireRescueSite/Documents/CalOES-Spill_Booklet_Feb2014_FINAL_BW_Acc.pdf.

ii. Following notification to OES, the Permittee shall notify State Water Board staff, as soon as practicable. Notification may be via telephone, e-mail, delivered written notice, or other verifiable means.

iii. Within three (3) business days of notifying the State Water Board, the Permittee must submit an *Accidental Discharges of Hazardous Materials Report (Report Type 6).*

b. **Violation of Compliance with Water Quality Standards:**

i. The Permittee shall notify the State Water Board staff of any event causing a violation of compliance with water quality standards. Notification may be via telephone, e-mail, delivered written notice, or other verifiable means.

ii. Examples of noncompliance events include: lack of storm water treatment following a rain event, discharges causing a visible plume in a water of the

[4] Completion of post-construction monitoring shall be determined by State Water Board staff and shall be contingent on successful attainment of restoration and mitigation performance criteria.

[5] "Hazardous material" means any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment. (Health & Saf. Code, § 25501).

state, and water contact with uncured concrete.

iii. Within three (3) business days of notifying the State Water Board, the Permittee must submit a *Violation of Compliance with Water Quality Standards Report* (*Report Type 7).*

c. In-Water Work:

i. The Permittee shall notify the State Water Board staff at least forty-eight (48) hours prior to initiating work in water or stream diversions. Notification may be via telephone, e-mail, delivered written notice, or other verifiable means.

ii. Within three (3) business days following completion of work in water or stream diversions, the Permittee must submit an *In-Water Work/Diversions Water Quality Monitoring Report* (*Report Type 8*).

d. Modifications to the Project:

i. Project modifications may require an amendment of this Order. The Permittee shall give advance notice to State Water Board staff if Project implementation as described in the application materials is altered in any way or by the imposition of subsequent permit conditions by any local, state or federal regulatory authority by submitting a Modifications to Project Report. The Permittee shall inform State Water Board staff of any Project modifications that will interfere with the Permittee's compliance with this Order.

ii. The Permittee shall notify State Water Board staff in advance of any modifications to the Project, as described in the application materials, that will interfere with the Permittee's compliance with Order, or by the imposition of subsequent permit conditions by any local, state or federal regulatory authority.

iii. The Permittee must submit a *Modifications to Project Report* (Report Type 9).

iv. Notification may be made in accordance with conditions in the *Certification Deviation* section of this Order.

e. Transfer of Property Ownership: This Order is not transferable in its entirety or in part to any person or organization except after notice to the State Water Board in accordance with the following terms:

i. The Permittee must notify the State Water Board staff of any change in ownership or interest in ownership of the Project area by submitting a Transfer of Property Ownership Report (Report Type 10). The Permittee and purchaser must both sign and date the notification and provide it to the State Water Board at least ten (10) days prior to the transfer of ownership.

ii. Until such time as this Order has been modified to name the purchaser as the permittee, the Permittee shall continue to be responsible for all requirements set forth in this Order.

f. **Transfer of Long-Term BMP maintenance**: If maintenance responsibility for post-construction BMPs is legally transferred, the Permittee must submit a copy of such documentation to the State Water Board, and must provide the transferee with a copy of a long-term BMP maintenance plan that complies with manufacturer specifications. The Permittee must provide such notification to the State Water Board with a *Transfer of Long-Term BMP Maintenance Report* (*Report Type 11*) at least ten (10) days prior to the transfer of BMP maintenance responsibility.

C. Water Quality Monitoring

1. **General:** If surface water is present, continuous visual surface water monitoring shall be conducted to detect accidental discharge of construction related pollutants (i.e. oil and grease, turbidity plume, or uncured concrete).

2. **Accidental/Noncompliance Discharges:** Upon occurrence of an accidental discharge of hazardous materials or a violation of compliance with a water quality standard, State Water Board staff may require water quality monitoring based on the discharge constituent and applicable beneficial uses and related water quality objectives.

3. **In-Water Work or Diversions:** Surface water monitoring conditions shall be addressed in any in-water work or dewatering plans presented by the Permittee for approval to the State Water Board.

4. **Post-Construction:** Visually inspect the Project sites during the rainy season for three (3) years to ensure excessive erosion, stream instability, or other water quality pollution is not occurring in or downstream of the Project site. If water quality pollution is occurring, contact the State Water Board staff member overseeing the Project. Additional permits may be required to carry out any necessary site remediation.

D. Standard Conditions

1. This Order is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Water Code section 13330, and California Code of Regulations, title 23, sections 3867-3869, inclusive. Additionally, the State Water Board reserves the right to suspend, cancel, or modify and reissue this Order, after providing notice to the Permittee, if the State Water Board determines that the Project fails to comply with any of the conditions of this Order; or, when necessary to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act (Wat. Code, § 13000 et seq.) or federal Clean Water Act section 303 (33 U.S.C. § 1313). For purposes of Clean Water Act section 401(d), the condition constitutes a limitation necessary to assure compliance with water quality standards and appropriate requirements of state law.

2. This Order is not intended and shall not be construed to apply to any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license, unless the pertinent certification application was filed pursuant to subsection 3855(b) of chapter 28, title 23 of the California Code of Regulations, and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

3. This Order is conditioned upon total payment of any fee required under title 23 of the California Code of Regulations and owed by the Permittee.

4. In the event of any violation or threatened violation of the conditions of this Order, the violation or threatened violation shall be subject to any remedies, penalties, process, or sanctions as provided for under state and federal law. For purposes of Clean Water Act, section 401(d), the applicability of any state law authorizing remedies, penalties, processes, or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this Order.

E. General Compliance

1. Failure to comply with any condition of this Order shall constitute a violation of the Porter-Cologne Water Quality Control Act and the Clean Water Act. The Permittee and/or discharger may then be subject to administrative and/or civil liability pursuant to Water Code section 13385.

2. Permitted actions must not cause a violation of any applicable water quality standards, including impairment of designated beneficial uses for receiving waters, as adopted in the Basin Plans by any applicable Regional Water Board or any applicable State Water Board (collectively Water Boards) water quality control plan or policy. The source of any such discharge must be eliminated as soon as practicable.

3. In response to a suspected violation of any condition of this Order, the State Water Board may require the holder of this Order to furnish, under penalty of perjury, any technical or monitoring reports the Water Boards deem appropriate, provide that the burden, including costs, of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. The additional monitoring requirements ensure that permitted discharges and activities comport with any applicable effluent limitations, water quality standards, and/or other appropriate requirement of state law.

4. The Permittee must, at all times, fully comply with engineering plans, specifications, and technical reports submitted to support this Order; and all subsequent submittals required as part of this Order. The conditions within this Order and Attachments supersede conflicting provisions within Permittee submittals.

5. This Order and all of its conditions contained herein continue to have full force and effect regardless of the expiration or revocation of any federal license or permit issued for the Project. For purposes of Clean Water Act, section 401(d), this condition constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements of state law.

6. The Permittee shall adhere to all requirements agreed upon in the *Mitigation Monitoring and Reporting Plan* (Attachment D), and any additional measures as outlined in the *CEQA Findings of Facts* (Attachment E).

7. **Construction General Permit Requirement:** The Permittee shall maintain compliance with conditions described in, and required by, *NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Order No. 2009-0009-DWQ; NPDES No. CAS000002).

F. Administrative

1. Signatory requirements for all document submittals required by this Order are presented in Attachment G of this Order.

2. This Order does not authorize any act which results in the taking of a threatened, endangered or candidate species or any act, which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish & G. Code, §§ 2050-2097) or the federal Endangered Species Act (16 U.S.C. §§ 1531-1544). If a "take" will result from any act authorized under this Order held by the Permittee, the Permittee must obtain authorization for the take prior to any construction or operation of the portion of the Project that may result in a take. The Permittee is responsible for meeting all requirements of the applicable endangered species act for the Project authorized under this Order.

3. The Permittee shall grant State Water Board staff, San Francisco Bay Regional Water Quality Control Board staff, Central Valley Regional Water Quality Control Board staff, or an authorized representative (including an authorized contractor acting as a Water Board representative), upon presentation of credentials and other documents as may be required by law, permission to:

   a. Enter upon the Project or compensatory mitigation site(s) premises where a regulated facility or activity is located or conducted, or where records are kept.

   b. Have access to and copy any records that are kept and are relevant to the Project or the requirements of this Order.

   c. Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order.

   d. Sample or monitor for the purposes of assuring Order compliance.

4. A copy of this Order shall be provided to any consultants, contractors, and subcontractors working on the Project. Copies of this Order shall remain at the Project site for the duration of this Order. The Permittee shall be responsible for work conducted by its consultants, contractors, and any subcontractors.

5. A copy of this Order must be available at the Project site(s) during construction for review by site personnel and agencies. All personnel performing work on the Project shall be familiar with the content of this Order and its posted location at the Project site.

6. The Permittee shall submit a signed copy of the California Department of Fish and Wildlife's lake and streambed alteration agreement to the State Water Board staff immediately upon execution and prior to any discharge to waters of the state.

7. The Permittee shall submit a signed copy of the U.S Army Corps of Engineers' section 404 permit to the State Water Board staff immediately upon execution and prior to any discharge to waters of the state.

G. Construction Conditions

Good Site Management "Housekeeping"

1. Permittee shall pick up all debris and waste daily on Project sites, and dispose of the waste and debris in properly covered containers.

2. Any sanitary wastewater collected at the construction sites may only be disposed of to a sanitary waste water collection system/facility (with authorization from the facility's owner or operator) or a properly-licensed treatment facility.

3. All equipment must be washed prior to transport to the Project site to reduce the risk of transporting soil pathogens and other invasive agents and must be free of sediment, debris, and foreign matter.

4. Water containing mud, silt, or other pollutants from equipment washing or other activities, shall not be allowed to enter a watercourse or placed in locations that may be subjected to high storm flows.

5. All equipment will be maintained to avoid leaks of automotive fluids, such as fuels, solvents, or oils. Staging and storage areas for equipment, materials, fuels, lubricants, and solvents shall be located more than one hundred (100) feet from stream channel and banks. All equipment and fuel stored on-site shall be bermed to contain any spilled material and shall be protected from rain. Berms shall consist of plastic covered dirt or sand bags.

6. Temporary stockpiling of construction and waste materials shall not be placed in a manner where the materials may be washed by rainfall into waters of the state. Onsite stockpiled materials shall be fully contained to prevent any wind or water transport. Materials shall not be placed within one hundred (100) feet distance of waters of the state. Exceptions to the one hundred (100)-foot limit may be granted on a case-by-case basis provided the Permittee first submits a proposal in writing that is found acceptable by State Water Board staff.

7. Following construction, all construction debris shall be removed from the Project areas for recycling or disposal at approved locations. When handling, transporting, and disposing of Project-generated waste, the Permittee and their contractors shall comply with all applicable state and federal laws and regulations. Disposal of construction debris for beneficial reuse must not be in a manner that results in adverse environmental impact and is subject to compliance with all applicable landowner or land management agency approval, and permit requirements. When handling, transporting, and disposing of Project-generated waste, the Permittee and their contractors shall comply with all applicable state and federal laws and regulations.

8. All BMP materials and supplies must be on-site and ready for use at the onset of construction activity, and must remain in supply and ready for use throughout the construction process. All non-structural BMP materials (e.g., training documents, compliance tracking procedures) must be ready for use at the onset of construction.

Fugitive Dust Control

9. The Permittee shall implement dust control measures for construction emission of fugitive dust in accordance with the Storm Water Pollution Prevention Plan and applicable Air Quality Management District standards.

10. Accessed disturbed open areas and unpaved roads:
    a. Shall be watered, as needed, to maintain adequate wetness for fugitive dust control.
    b. Gravel or other non-toxic substrates may also temporarily be applied to control fugitive dust.
    c. Ground covering on disturbed areas shall be re-established as soon as possible.
    d. Vehicle speeds on unpaved roads with no posted speed limit and rights-of-way will be limited to fifteen (15) miles per hour.

11. Paved roads and areas:
    a. Visible mud or dirt track-out onto adjacent paved roads will be removed at the end of each work day.
    b. All paved access roads, parking areas, and staging areas at construction site shall be swept to remove dirt and debris, as needed.

12. Stockpiled materials shall be enclosed, covered, or have soil binders applied to prevent generating dust and soil erosion.

13. Transport:
    a. Haul trucks transporting soil, sand, or other loose material off site will be covered or will be required to maintain at least one (1) foot of freeboard.
    b. Vehicles will be confined to established roadways and pull-outs, and pre-approved access roads, overland routes, turn-outs, project work areas, Permittee-owned facilities, and access areas.

14. Dust control activities shall be conducted in such a manner that will not produce downstream runoff.

15. Other dust control measures, including pre-watering of excavation/grading sites, washing down vehicles/equipment before leaving site, and prohibiting grading/excavation activities during windy periods, shall be implemented as appropriate.

16. Dust control activities shall be conducted in compliance with any restrictions on use of potable water.

Hazardous Materials

17. The Permittee shall not discharge unapproved substances in concentrations toxic to human, plant, animal, or aquatic life, or that produce detrimental physiological

responses.

18. The Permittee shall develop and maintain on-site a Project-specific Spill Prevention, Containment and Cleanup Plan (Plan) outlining the practices to prevent, minimize, and/or clean up potential spills during construction of the Project. The Plan must detail the Project elements, construction equipment types and location, access and staging, and construction sequence. The Plan must also address spill response and prevention measures for potential spills that may occur within the Project site.

19. At all times, appropriate types and sufficient quantities of materials shall be maintained on-site to contain any spill or inadvertent release of materials that may cause a condition of pollution or nuisance if the materials reach waters of the state.

20. Hazardous materials, if allowed within one hundred (100) feet distance of waters of the state, shall be separated from waters of the state by the use of sandbags, a dike, or other suitable barrier that prevents sediment, petroleum products, chemicals, or other liquid or solid material from entering the waters. Barriers shall be constructed and removed in a manner that will avoid any discharge of material into, or the siltation of, the water. Sediment or other material collected by the barrier shall be removed and properly disposed of.

21. Any spill shall be cleaned up immediately, and reported to State Water staff, as outlined in section XIII.B.4.a, above. If vacuum devices are used to clean up any contamination in water, the vacuum hose should be placed in a 3-4 square foot area, and monitored by a qualified biologist to prevent the uptake of any aquatic life.

22. Application of pesticides must be supervised by a certified applicator and be in conformance with manufacturer's specifications for use. Compounds used must be appropriate to the target species and habitat.

23. Onsite containment for storage of chemicals classified as hazardous shall include secondary containment and appropriate management as specified in California Code of Regulations, title 27, section 20320.

24. Stationary equipment (motors, pumps, generator, etc.) shall be positioned over drip pans, or other types of containment. To the greatest feasible extent, stationary equipment shall be located one hundred (100) feet outside of the any waters of the state.

25. Fueling, lubrication, maintenance, storage, and staging of vehicles and equipment shall not result in a discharge, or a threatened discharge, to any waters of the state, and is prohibited within the floodplain or within one hundred (100 feet) of the waterway. If infeasible, appropriately-sized secondary containment, such as drip pans and/or placement of absorbent material, shall be utilized for spill or leak capture and containment.

26. When leaks of any fluids are detected on any mechanical equipment, operation of that equipment shall cease immediately. Leaks on equipment shall be repaired immediately, or the equipment shall be removed from the Project site.

27. The Permittee must perform daily inspections of construction equipment prior to utilizing it near surface waters to ensure leaks from the equipment are not occurring and are not a threat to water quality.

Invasive Species and Soil Borne Pathogens

28. Permittee shall conduct project activities in a manner that prevents the introduction, transfer, and spread of noxious invasive species, including plants, animals, and microbes (e.g., algae, fungi, parasites, bacteria, etc.), from one project site and/or waterbody to another. Measures may include, but are not limited to, the treatment of on-site infestations and the cleaning of all equipment and gear that has been at an infested site.

In-Water Work

29. Work in flowing or standing surface waters, unless otherwise described in the Project description and approved by the State Water Board staff, is prohibited.

30. Construction in waters of the state is restricted to the period between April 15 to October 15, or the end of any extension granted by State Water Board staff, in consultation with the California Department of Fish and Wildlife. Work within any stream zone shall be restricted to periods of low or no stream flow and dry weather. Revegetation work is not confined to this period, provided that appropriate erosion control measures are implemented.

31. All work performed within waters of the state shall be completed in a manner that minimizes impacts to beneficial uses and habitat; measures shall be employed to minimize disturbances that will adversely impact the water quality of waters of the state. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete Project implementation.

32. Unless as described in this Order, vehicles shall not be driven or equipment operated in water covered portions of a stream, or where wetland vegetation, riparian vegetation, or aquatic organisms may be destroyed.

33. Gravel used in waters of the state shall:

    a. Consist of mechanically-rounded and washed, and/or river run gravel obtained from a river or creek bed.

    b. Be clean, hard, sound, durable, uniform in quality, and free of disintegrated material, organic matter, and deleterious substances.

    c. Have a cleanliness value of at least 85, using the Cleanness Value Test Method for California Test No. 227.

    d. Exceptions to criteria are subject to the review and approval of State Water Board staff.

34. All imported fill material shall be clean and free of pollutants. All fill material shall be imported from a source that has the appropriate environmental clearances and

permits.

35. The Permittee shall not allow excavated materials, maintenance materials, and equipment to cover aquatic or riparian vegetation.

Dewatering

36. The Permittee shall obtain approval of a dewatering plan from the State Water Board staff before commencement of any planned work in standing or flowing water. Diversion activities shall not result in the degradation of beneficial uses or exceedance of water quality objectives of the receiving waters. No activities shall involve wet excavations (i.e., no excavations shall occur below the existing groundwater level). A minimum 5-foot buffer zone shall be maintained above the existing groundwater level.

37. If groundwater is unexpectedly encountered during excavation, it will be pumped into a baker tank and discharged at an appropriate wastewater facility, and State water Board staff notified. With State Water Board staff approval, groundwater may also be used to control fugitive dust on site, as needed, and may be dispersed to other vegetated areas, on the condition that the reused groundwater does not result in ponding or flow into areas outside of the proposed construction footprint. Groundwater disposed to land shall not enter waters of the state.

38. All temporary dewatering methods shall be designed to have the minimum necessary impacts to waters of the state to isolate the immediate work area. All dewatering methods shall be installed such that natural flow is maintained upstream and downstream of the Project area. The diversion shall not cause sedimentation, siltation, or erosion upstream or downstream of the Project area. All dewatering methods shall be removed immediately upon completion of Project activities.

Access Roads

39. The number of access routes, number and size of staging areas, and the total area of the activity will be limited to the minimum necessary to achieve the Project goal.

40. The Permittee shall use existing paved and unpaved highways and roads where possible, and roads along existing utility corridors.

41. Wherever possible, roads shall be built at right angles to streams and washes. All existing roads shall be left in a condition equal to or better than their condition prior to the construction without changing their service level.

42. Sediment barriers shall be installed (e.g., silt fences and/or staked hay or straw bales, or sandbags) at the base of disturbed slopes adjacent to road crossings. These barriers shall be installed to prevent siltation into water bodies, including wetlands, crossed by or near the construction work area, and will remain in place until re-vegetation is successful.

Stream and Drainage Crossings

43. At the end of each work day, the Permittee shall place an escape ramp at each end of any open excavation greater than six (6) inches in depth and walls greater than thirty (30) degrees to allow any animals that may have become entrapped in the trench to climb out overnight. The ramp may be constructed of either dirt fill or wood planking or other suitable material.

44. Temporary Bridge Installation (Site 9): Unless a modification is approved by State Water Board staff, any low scrub, grasses, or other herbaceous vegetation that is located along, on, and above the bank of the channel will be covered with filter fabric. Approximately one (1) foot of 4-8 inch clean rock plus six (6) inches of 2-inch clean crush rock cap will be placed over the fabric on both sides of the bridge crossing within the road prism, or upland area, to accommodate the twenty five (25)-foot approach ramps. The temporary bridge then will be lifted using an excavator or small crane to position it onto the temporary fabric landings on each side of the crossing. After it is in place, the excavator or crane will unfold the bridge and lock it into place for use. After completion of construction, the bridge will be removed using similar methods. After construction at this location is completed, all material will be gathered and the filter fabric will be removed during a dry weather period.

45. Culverts:

a. The Permittee shall size new permanent culverts at stream crossings to pass the estimated one-hundred (100)-year flood flow, without overtopping or diverting. Culvert sizing factors shall include transport of bedload. The culverts shall be engineered, installed and maintained, to assure resistance to washout, and erosion of the stream bed, stream banks and/or fill.

b. Any culvert placed within a stream where aquatic species may occur, shall be designed, constructed and maintained such that it does not constitute a barrier to upstream or downstream movement of aquatic life, or cause an avoidance reaction by species that impedes their upstream or downstream movement.

c. Native material will be used for backfill and culvert reinforcement to the greatest extent feasible and imported dirt will only be used as necessary.

d. Culverts shall be long enough to extend completely beyond the toe of fill.

e. The Permittee shall align culverts with the watercourse channel and ensure that their outfall structures are aligned with the channel and as wide as or wider than the channel width. Culverts shall extend beyond the road fill and shall not be perched (suspended), unless equipped with downspouts or energy dissipaters (rock rip-rap or boulders) at the outfall to prevent erosion.

f. Bottoms of temporary culverts shall be placed at water body grade and bottoms of permanent culverts shall be placed at or below water body grade.

g. The Permittee shall protect culvert inlets and outlets from erosion as appropriate through armoring constructed of rock rip-rap or other non-erodible material (e.g.,

concrete head wall). Where used, rock rip-rap or armoring shall be of sufficient size and depth to remain in place during one-hundred (100)-year peak flows, extend at least as high as the top of the pipe on inlets, and shall extend sufficient distance upstream as wing walls to prevent bank erosion. Where armoring is used, the channel at the culvert outlet shall be rip-rapped in a U-shaped channel and rip-rap set below grade so as to allow the natural accumulation of bedload at watercourse grade.

h. The Permittee shall ensure that permanent culvert installations are in a finished condition with all hydrologic connectivity from the road or ditch to the crossing eliminated and effective erosion control in place prior to any rainfall event capable of generating runoff. Effective erosion control shall extend away from the crossing to at least the first water break.

46. Culverts, at-grade crossings, or other structures shall be installed so that water flow is not impaired.

47. Any fill material used for stream crossings shall only be clean material which shall cause no sediment discharge or siltation in the stream.

48. All waterbody road crossing structures shall be properly aligned within the waterbody and otherwise engineered, installed, and maintained, to assure resistance to washout, and to prevent erosion and/or fill of the water body. Water velocity shall be dissipated at outfalls to reduce erosion.

49. Road crossing approaches shall be permanently rocked, paved, or otherwise armored to a minimum depth of three (3) inches of clean, screened and pre-washed gravel or rock, to prevent tracking of soil into the crossing. Approaches shall be rocked to the hydrologic divide or disconnect, and hydrologically disconnected to the maximum extent feasible to extent feasible to prevent sediment from entering the watercourse, and shall be maintained as necessary during use.

50. To the maximum extent feasible, use of road crossings shall occur when the road bed is dry, or no wetter than found during normal dust abatement watering treatments.

51. During Project construction, all road crossing sites shall be inspected by the Permittee following the first rainfall that exceeds 0.25 inches in a twenty-four (24)-hour period after October 15th. The inspection shall ensure that crossings are functioning as designed, road approaches hydrologically disconnect the road prism from waters, and the fine sediment present on road approach surfaces is prevented from delivery to waters of the state. Inspection results and follow up corrective measures shall be documented and shall be provided to State Water Board staff within thirty (30) days following the inspection or corrective measures.

Special Status Species

52. The Permittee shall adhere to all conditions described in the *Mitigation Monitoring and Reporting Plan* (Appendix D) and the Initial Study/Mitigated Negative Declaration for the Project (pages 3-16 to 3-26) to avoid or reduce effects on special status species and their habitat during Project construction.

Stabilization, Erosion, and Sediment Control

53. All necessary BMPs to control erosion and runoff from areas associated with the Project shall be implemented and properly maintained.

54. BMPs for erosion and sediment control shall be implemented and in place at commencement of, during and after any ground-clearing activities or any other Project activities that could result in erosion or sediment discharges to surface water.

55. Erosion protection must be provided for all water body bed and bank and wetland areas, as needed, at the approved impact sites. Care shall be taken during placement or movement of materials in the vicinity of the stream banks to prevent any damage to stream banks and to minimize damage to any streamside vegetation.

56. Where areas of bare soil are exposed during the rainy season, silt control measures shall be deployed according to industry standards to prevent sediment from entering waters of the state. Silt control structures shall be monitored for effectiveness and shall be repaired or replaced as needed. Buildup of soil behind silt fences shall be removed promptly and any breaches of undermined areas repaired at once. At no time shall silt laden runoff be allowed to enter the water body or directed to where it may enter the water body. Erosion control measures, such as, silt fences, straw hay bales, gravel or rock lined ditches, water check bars, and broadcasted straw shall be used where ever silt laden water has the potential to leave the work site and enter the stream.

57. The Permittee shall not use or allow the use of erosion control products that contain synthetic materials within waters of the state at any time, with the exception of plastic sheeting used in water diversion and dewatering activities. The Permittee shall prioritize the use of wildlife-friendly natural erosion control products wherever feasible. The Permittee shall not use or allow the use of erosion control products that contain synthetic netting for permanent erosion control (i.e., erosion control materials to be left in place for two years or after the completion date of the project).

58. The Permittee shall make modifications, repairs and improvements to erosion control measures whenever it is needed. Materials used to repair or improved erosion control measures shall not pose a risk to fish or wildlife.

59. Spoils shall not be stockpiled within the bed and bank of any water body and shall be placed in an upland area where they may not wash into any water body.

60. Existing root systems of vegetation removed from temporary impact areas shall remain intact, as much as practicable, and only be cut above the surface of the ground.

61. All areas of temporary impacts, and all other areas of temporary disturbance, which could result in a discharge or a threatened discharge to waters of the state shall be restored to pre-disturbance conditions, as described in the *Restoration and Compensatory Mitigation Plan* (Attachment C).

Storm Water

62. The Permittee shall follow all relevant conditions of the *NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities*, including Attachment A: Linear Underground/Overhead Requirements, for the entire geographical area of the Project.

63. The Permittee shall submit a *Storm Water Pollution Prevention Plan* (SWPPP) for construction at the Project site to State Water Board staff for review and approval prior to beginning construction in accordance with General Order No. 2009-0009-DWQ. The SWPPP shall describe the BMPs that will be implemented to protect water quality at the Project site and down gradient of the Project site during Project construction. The Permittee shall maintain compliance with the SWPPP.

64. The Permittee shall not conduct construction activities below the *Ordinary High Water Mark* (OHWM) of streams or in other waters of the state during rain events. No individual construction activity may be started if the erosion control measures cannot be completed prior to the onset of precipitation, if that construction activity may cause the introduction of sediments into the stream. Seventy-two (72)-hour weather forecasts from the National Weather Service shall be consulted prior to start-up of any phase of the Project that may result in sediment-laden runoff to the Project site, and construction plans made to meet this condition. Precipitation forecast information from the National Weather Service Forecast Office can be found by entering the zip code of the Project's location at http://www.srh.noaa.gov/forecast.

65. After any rain event, the Permittee shall inspect all sites currently under construction and all sites scheduled to begin construction within the next seventy-two (72) hours for erosion and sedimentation problems and take corrective action as needed.

Fire Plan

66. The Permittee will implement standard fire prevention procedures.

67. If welders are used, fire suppression equipment shall be on site when the welder is being used.

Other Site Specific Conditions

68. The Permittee shall comply with all aspects of the *Mitigation, Monitoring, and Reporting Plan* (Attachment D), and all APMs as set forth in the IS/MND, which is incorporated herein by reference.

69. In consultation with the Designated Biologist, the Permittee shall demarcate the outer perimeter of the work area to prevent damage to adjacent habitat and waters of the state. Marking shall be in place while the work area is in use during construction. All persons employed or otherwise working on the project site shall be instructed about the restrictions that the marking represents. All temporary flagging, fencing, and/or barriers from the project sites no later than 24 hours after completion of project activities.

70. Oak trees will be avoided wherever feasible. No equipment should be operated within the dripline of oaks that can be avoided. Protective fencing should be placed around the dripline of oaks to prevent compaction of the root zone.

H. Mitigation for Temporary Impacts

The Permittee shall restore all areas of temporary impacts to waters of the state and all Project site upland areas of temporary disturbance which could result in a discharge to waters of the state, in accordance with the *Restoration and Compensatory Mitigation Plan*, dated July 2015, and contained in Appendix C. The total required mitigation for temporary Project impacts to waters of the state is summarized in Table 4, below.

Table 4. Required Project Mitigation Quantity for Temporary Impacts

Aquatic Resource Type	Mitigation Type	Units	Mitigation Method[6]
			Enhancement
Stream Channel	Permittee-Responsible	Acres	0.003
Stream Channel	Permittee-Responsible	Linear Feet	7.5
Wetland	Permittee-Responsible	Acres	0.019
Wetland	Permittee-Responsible	Linear Feet	43.5

1. Restoration monitoring and reporting shall continue until all required success criteria and goals are met. All monitoring visits will include an evaluation of the need for remedial measures.

2. If restoration is not initiated within one (1) year of the impacts, additional compensatory mitigation shall be required to offset temporal loss of waters of the state.

I. Compensatory Mitigation for Permanent Impacts

The Permittee shall provide compensatory mitigation for all permanent impacts to waters of the state in accordance with the *Restoration and Compensatory Mitigation Plan* (see Appendix C), submitted by the Permittee on July 7, 2015, which has been approved by State Water Board staff. Any deviations from, or revisions to, the *Restoration and Compensatory Mitigation Plan* must be pre-approved by State Water Board staff.

The total amount of Permittee-responsible mitigation is summarized in Table 5, below.

[6] Mitigation methods include: establishment, reestablishment, rehabilitation, enhancement, or preservation.

Table 5. Required Project Compensatory Mitigation Quantity for Permanent Physical Loss of Area

Aquatic Resource Type	Compensatory Mitigation Type	Units	Mitigation Method[7]	
			Re-Establishment	Enhancement
Stream Channel	Permittee-Responsible	Acres		0.058
Stream Channel	Permittee-Responsible	Linear Feet		100
Stream Channel	Mitigation Bank	Acres	0.06	
Wetland	Mitigation Bank	Acres	0.04	

1. **Permittee-Responsible Compensatory Mitigation:**

   a. As described in the *Restoration and Compensatory Mitigation Plan* (see Attachment C), the Permittee has agreed to remove existing defunct culverts at Sites 8 and 9, and reshape the drainages to their natural stream morphology. This would result in approximately 0.009 acres and 31 linear feet of enhanced stream habitat at Site 8, and 0.043 acres and 69 linear feet of enhanced stream habitat at Site 9.

   b. The Permittee will also install a one (1) foot deep rock water bar at Site 8 to prevent further erosion of the south bank of the drainage.

   c. The Permittee shall adhere to all Construction Conditions, listed in section G above, while completing the on-site restoration work.

   d. Removal of the culverts on Sites 8 and 9, installation of the water bar at Site 8, and reshaping of the drainages must be finalized and reported for the State Water Board to issue a *Notice of Project Complete letter* for the Project.

   e. As part of the required *Monthly Reports* (Report Type 1) for the Project, the Permittee shall document the on-site restoration initiation, progress, and completion. The mitigation sites shall be photo documented, before and after restoration.

   f. Any on-site restoration work requiring equipment shall take place from August 1st through September 30th to minimize impacts to the existing bed and bank and to

[7] Mitigation methods include: establishment, reestablishment, rehabilitation, enhancement, or preservation.

avoid work within a wetted stream channel.

g. The Permittee shall notify State Water Board and Department of Fish and Wildlife staff at least seven (7) days prior to removal of the culverts on Sites 8 and 9, so both agencies can monitor the restoration work.

h. Removed culverts will be disposed of at a waste disposal site.

i. Upland areas shall be revegetated by the Permittee in accordance with pre-existing conditions, and the Restoration and Compensatory Mitigation Plan.

2. **Purchase of Mitigation Credits for Compensatory Mitigation:**

a. As described in the Restoration and Compensatory Mitigation Plan (see Attachment C), the Permittee has agreed to mitigate impacts to 0.04 acre of wetlands and 0.06 acre of stream habitat through the 1:1 purchase of 0.10 floodplain mosaic wetlands credits from the Cosumnes Floodplain Mitigation Bank[8], operated by Westervelt Ecological Services. The Cosumnes Floodplain Mitigation Bank is a 472-acre site located at the confluence of the Cosumnes and Mokelumne Rivers, in Sacramento County. The purchased credits equate to 0.10 acres of floodplain mosaic wetlands habitat (riparian forest, riparian woodland, riparian scrub, scrub shrub wetland, semi-permanent wetland, perennial emergent marsh, seasonal wetland, seasonal swales, and tidal freshwater marsh).

b. A copy of the fully executed agreement for the purchase of the agreed-upon mitigation credits shall be provided to the State Water Board in advance of any authorized Project impacts.

J. **Certification Deviation**

1. Minor modifications of Project locations or predicted impacts may be necessary as a result of unforeseen field conditions, necessary engineering re-design, construction concerns, or similar reasons. Some of these prospective Project modifications may have impacts on the environment. Some modifications of Project locations or predicted impacts may qualify as a "Certification Deviation" (see Attachment H) that does not require an immediate amendment of this Order, because the State Water Board has determined that any potential environmental impacts that may result from the change are sufficiently addressed by the Order conditions and the CEQA Findings. After the termination of construction, this Order will be amended to reflect all authorized Certification Deviations and any resulting adjustments to the amount of water resource impacts and required compensatory mitigation amounts.

2. A Project modification shall not be granted a Certification Deviation if it warrants or necessitates changes that are not addressed by the Order conditions or the CEQA environmental document, such that the Project impacts are not addressed in the Project's environmental document or the conditions of this Order. In this case a supplemental environmental review and an amendment to this Order will be required.

[8] For further information see http://www.wesmitigation.com/mitigation-conservation-projects/cosumnes-floodplain-mitigation-bank.cfm#page=general.

XIV. Water Quality Certification

I hereby issue the Order for the Vaca Dixon-Lakeville 230 Kilovolt (kV) Reconductoring Project (SB13005) certifying that as long as all of the conditions listed in this Order are met, any discharge from the referenced Project will comply with the applicable provisions of Clean Water Act sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards).

This discharge is also regulated pursuant to State Water Board Water Quality Order No. 2003-0017-DWQ, which authorizes this Order to serve as Waste Discharge Requirements pursuant to the Porter-Cologne Water Quality Control Act (Wat. Code, § 13000 et seq.).

The State Water Board, as lead agency for CEQA compliance, hereby adopts the IS/MND (SCH No. 2014092051) prepared for the Project and approves the mitigation monitoring and reporting plan (MMRP) (Attachment D) for the Project.

Except insofar as may be modified by any preceding conditions, all Order actions are contingent on: (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the conditions of this Order and the attachments to this Order; and, (b) compliance with all applicable requirements of Statewide Water Quality Control Plans and Policies, the Regional Water Boards' Water Quality Control Plans and Policies.

Thomas Howard
Executive Director
State Water Resources Control Board

5/27/16
Date

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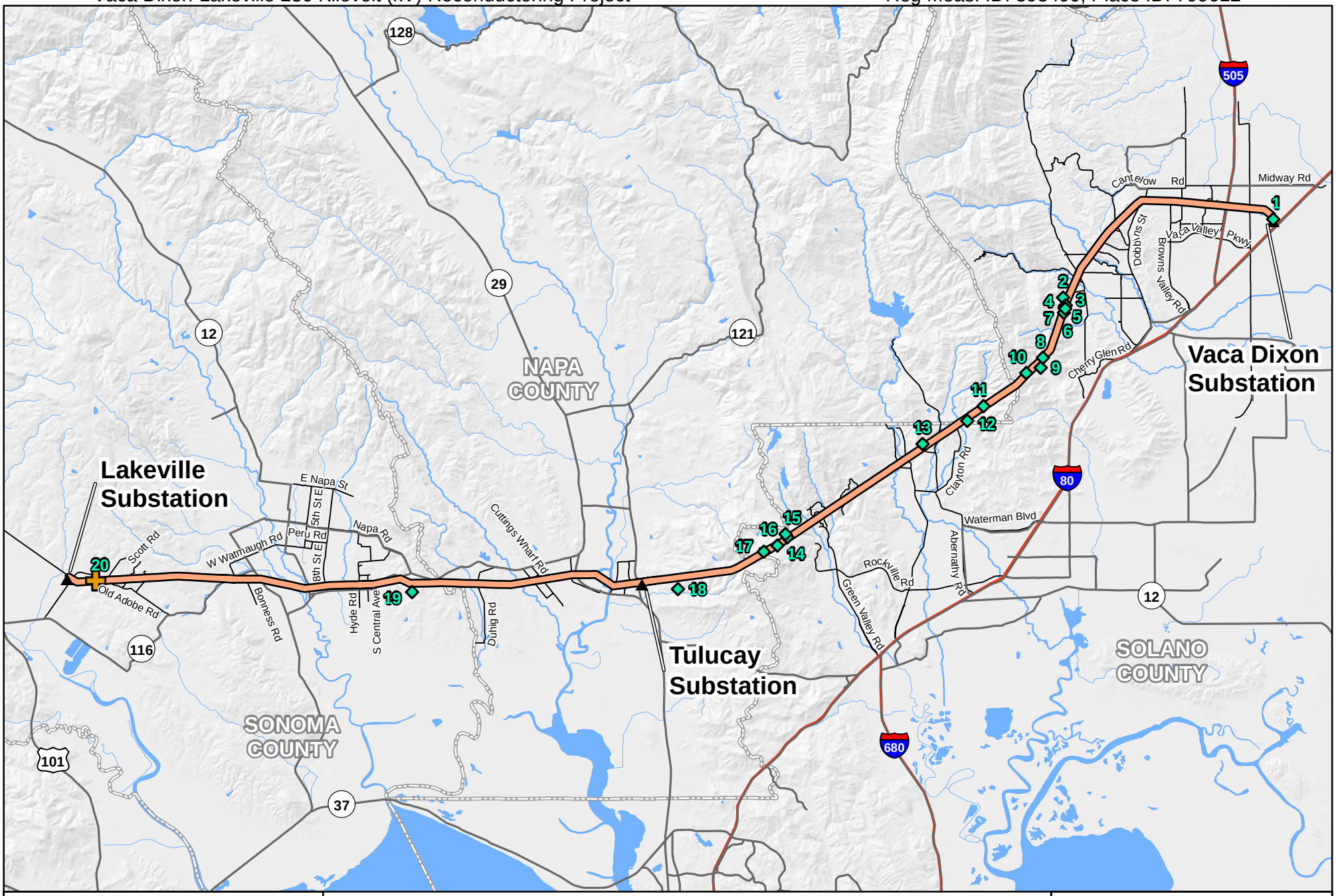
Lakeville Substation
Vaca Dixon Substation
Tulucay Substation
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SONOMA COUNTY
SOLANO COUNTY
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5th St E
8th St E
Peru Rd
Napa Rd
W Watmaugh Rd
Scott Rd
Old Adobe Rd
Bonness Rd
Hyde Rd
S Central Ave
Duhig Rd
Cuttings Wharf Rd
Clayton Rd
Waterman Blvd
Rockville Rd
Green Valley Rd
Abernathy Rd
Cherry Glen Rd
Browns Valley Rd
Dobbins St
Vaca Valley Pkwy
Canon Rd
Midway Rd
128
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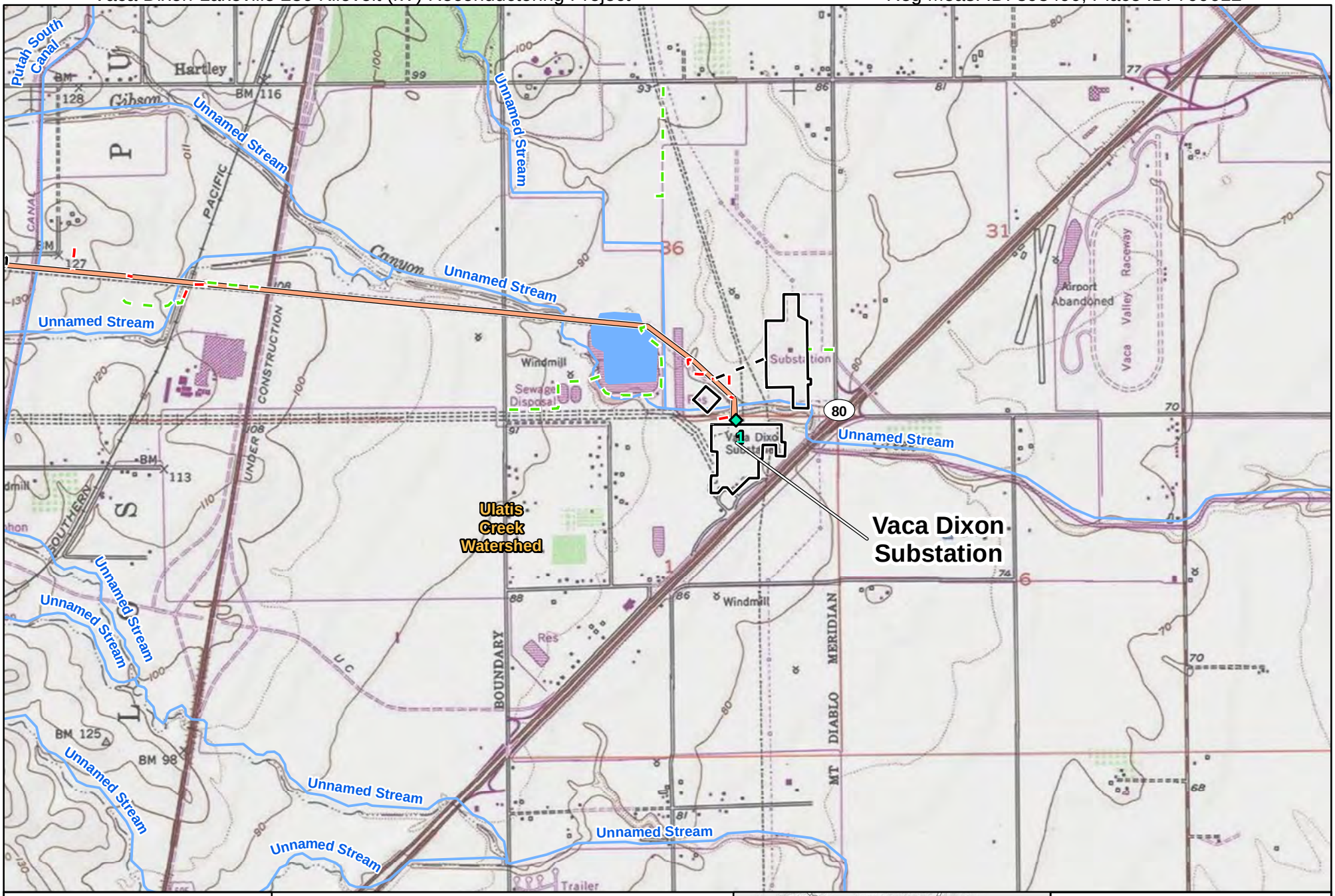
N
Existing Substation
Existing Vaca Dixon-Lakeville 230 kV Transmission Line
Highway
County Boundary
Crossing Improvement Site
Temporary Guard Structure
Water Feature
Source: AECOM 2013; PG&E 2013
Vaca Dixon-Lakeville 230 kV Reconductoring Project
Project Vicinity Map
August 28, 2013



Miles
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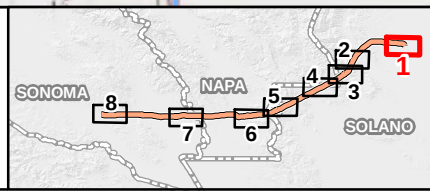
1:24,000

Pacific Gas and Electric Company

- Existing Substation
- Existing Vaca Dixon-Lakeville 230 kV Transmission Line
- Crossing Improvement Site
- Temporary Guard Structure
- Water Feature
- Watershed Boundary (HU10)

Project Access
- Existing Paved Road
- Existing Unpaved Road
- Overland Route

Source: AECOM 2013; PG&E 2013
Basemap: NAIP 2012



Vaca Dixon-Lakeville 230 kV Reconductoring Project

Project Overview Map
August 28, 2013

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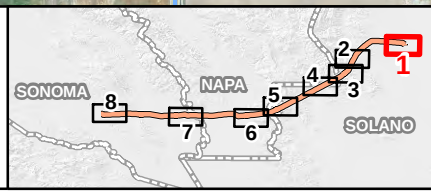
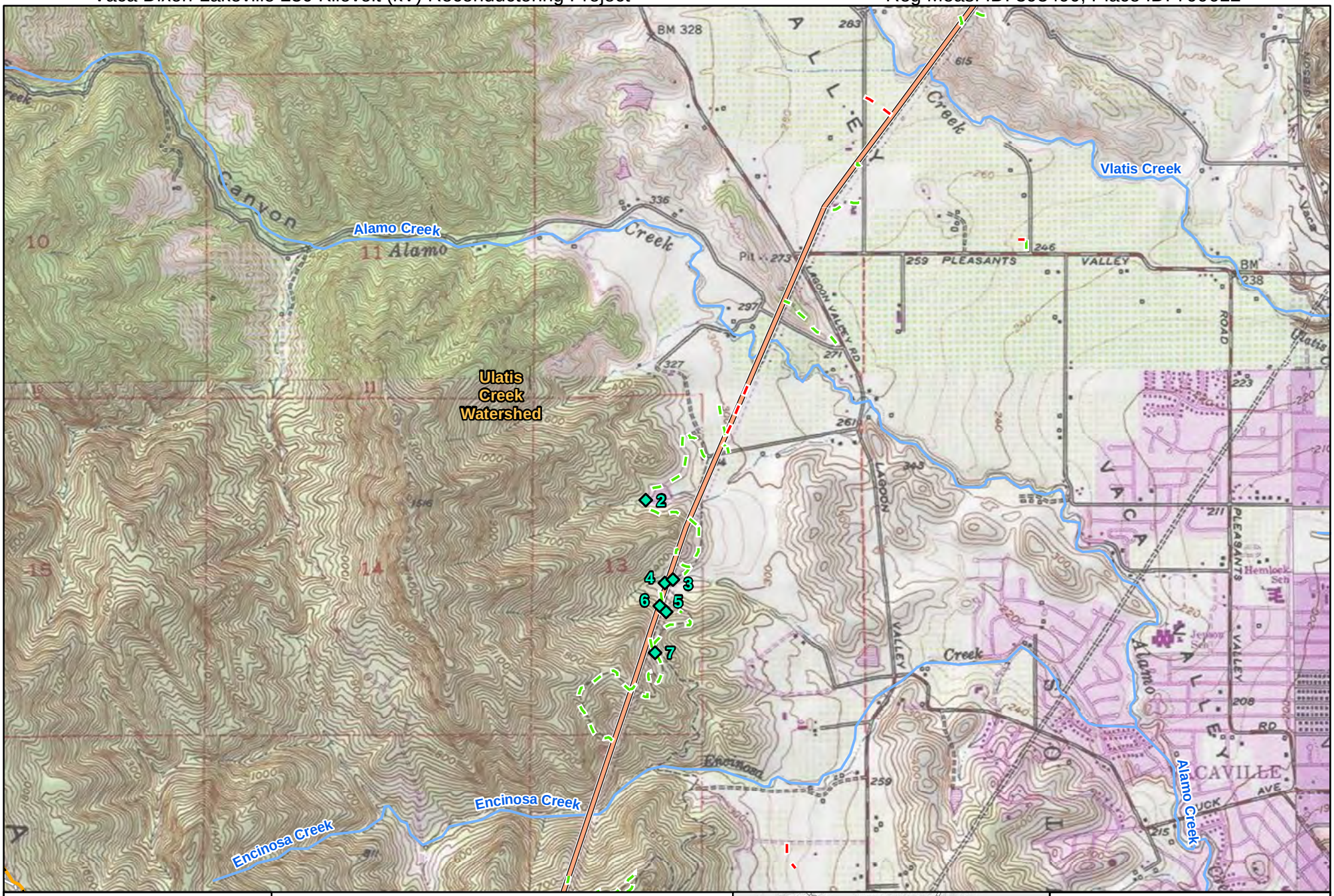
Existing Substation
Existing Vaca Dixon-Lakeville 230 kV Transmission Line
Project Access
Existing Paved Road
Existing Unpaved Road
Overland Route
Crossing Improvement Site
Temporary Guard Structure
Water Feature
Watershed Boundary (HU10)

Source: AECOM 2013; PG&E 2013
Basemap: NAIP 2012



Vaca Dixon-Lakeville 230 kV Reconductoring Project

Project Overview Map
DRAFT - Not For Public Review
August 28, 2013


Alamo Creek
Ulatis Creek Watershed
Vlatis Creek
Encinosa Creek
Encinosa Creek
Alamo Creek
2
3
4
5
6
7
Miles
0
0.25
0.5
1:24,000
Pacific Gas and Electric Company
Existing Substation
Existing Vaca Dixon-Lakeville 230 kV Transmission Line
Project Access
Existing Paved Road
Existing Unpaved Road
Overland Route
Crossing Improvement Site
Temporary Guard Structure
Water Feature
Watershed Boundary (HU10)
Source: AECOM 2013; PG&E 2013
Basemap: NAIP 2012
SONOMA
NAPA
SOLANO
1
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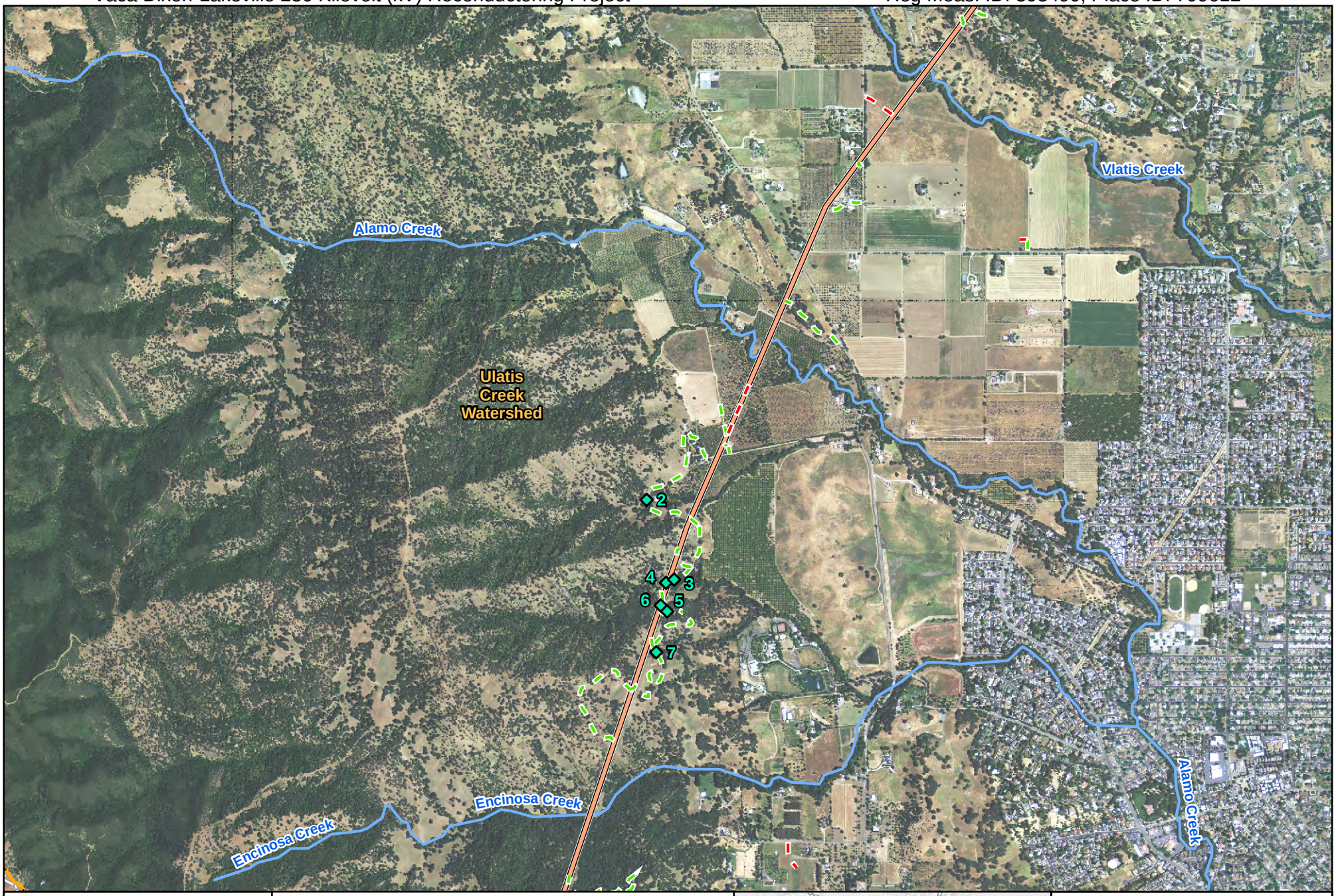
8
Vaca Dixon-Lakeville 230 kV Reconductoring Project
Project Overview Map
August 28, 2013


Vlatis Creek
Alamo Creek
Ulatis Creek Watershed
2
4
3
6
5
7
Encinosa Creek
Encinosa Creek
Alamo Creek
0
0.25
0.5
Miles
1:24,000
Pacific Gas and Electric Company
Existing Substation
Existing Vaca Dixon-Lakeville 230 kV Transmission Line
Project Access
Existing Paved Road
Existing Unpaved Road
Overland Route
Crossing Improvement Site
Temporary Guard Structure
Water Feature
Watershed Boundary (HU10)
Source: AECOM 2013; PG&E 2013
Basemap: NAIP 2012
SONOMA
NAPA
SOLANO
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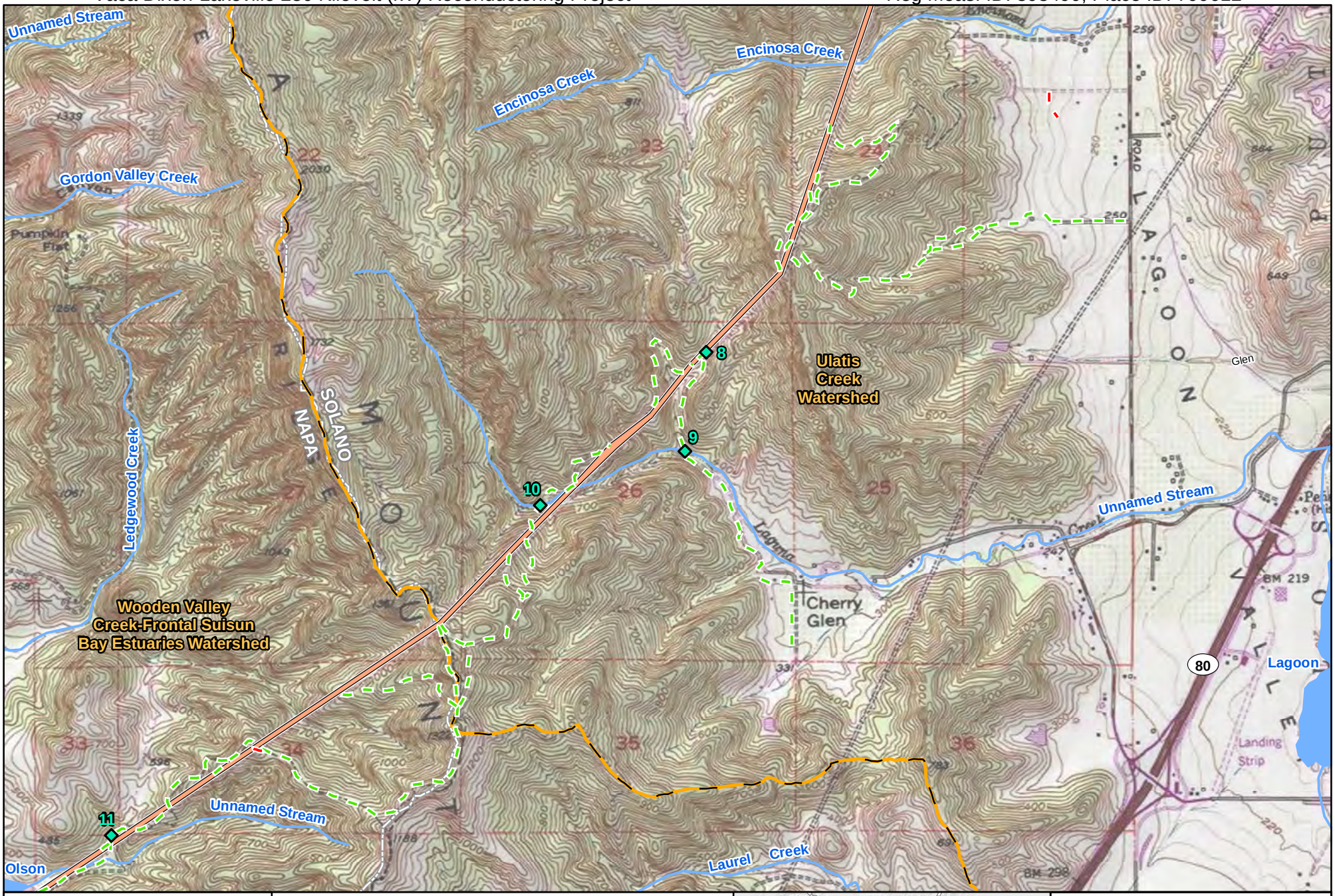
Vaca Dixon-Lakeville 230 kV Reconductoring Project
Project Overview Map
August 28, 2013



Miles
0 0.25 0.5

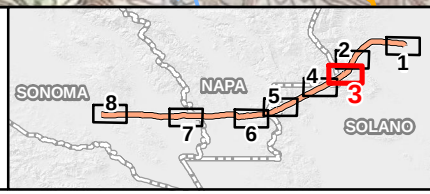
1:24,000

Pacific Gas and Electric Company

- Existing Substation
- Existing Vaca Dixon-Lakeville 230 kV Transmission Line
- Crossing Improvement Site
- Temporary Guard Structure
- Water Feature
- Watershed Boundary (HU10)

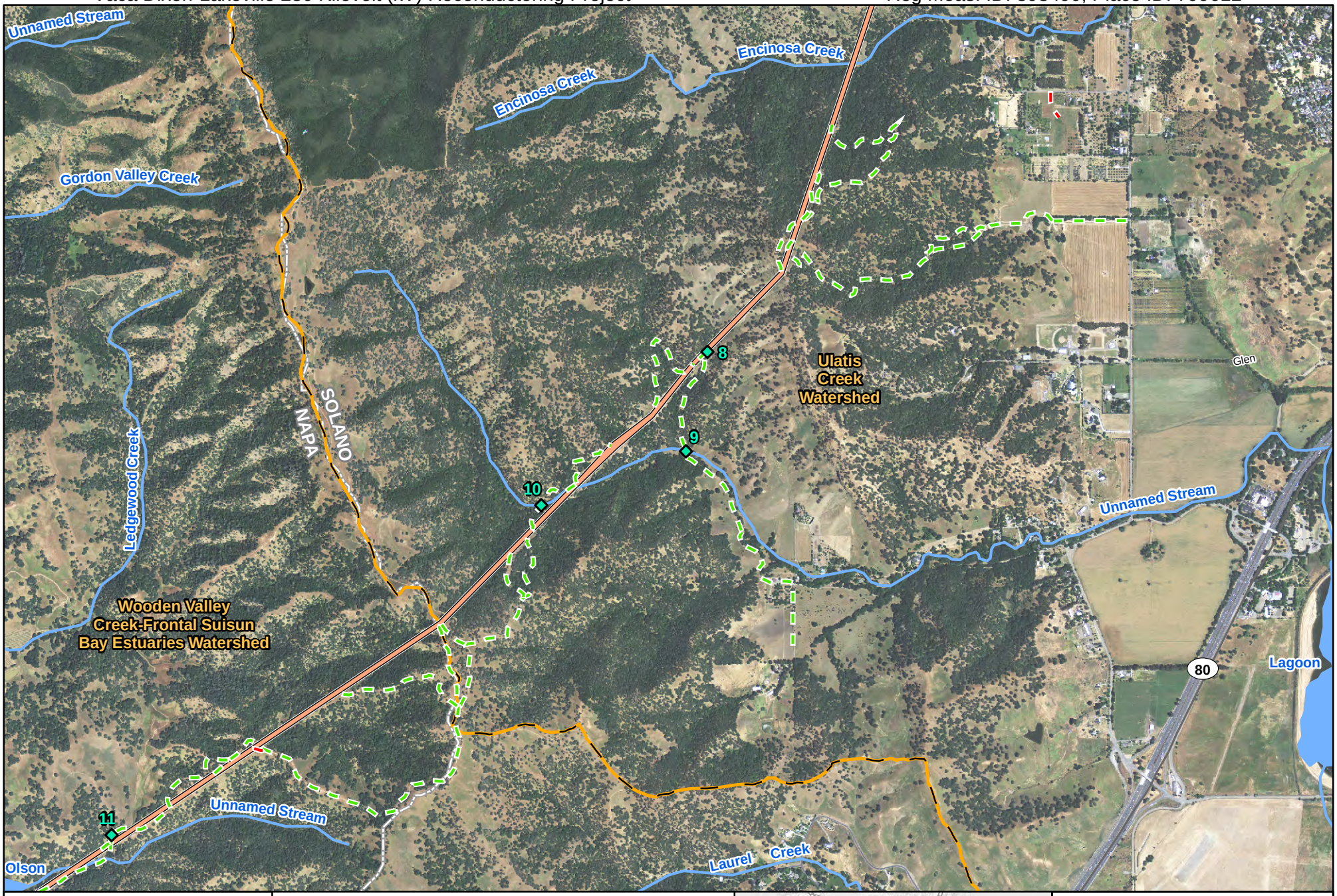
Project Access
- Existing Paved Road
- Existing Unpaved Road
- Overland Route

Source: AECOM 2013; PG&E 2013
Basemap: NAIP 2012



Vaca Dixon-Lakeville 230 kV Reconductoring Project

Project Overview Map
August 28, 2013


Unnamed Stream
Encinosa Creek
Encinosa Creek
Gordon Valley Creek
SOLANO
NAPA
Ledgewood Creek
Ulatis Creek Watershed
Glen
8
9
10
Unnamed Stream
Wooden Valley Creek-Frontal Suisun Bay Estuaries Watershed
80
Lagoon
11
Unnamed Stream
Olson
Laurel Creek
0
0.25
0.5
Miles
1:24,000
Existing Substation
Existing Vaca Dixon-Lakeville 230 kV Transmission Line
Project Access
Existing Paved Road
Existing Unpaved Road
Overland Route
Crossing Improvement Site
Temporary Guard Structure
Water Feature
Watershed Boundary (HU10)
Source: AECOM 2013; PG&E 2013
Basemap: NAIP 2012
SONOMA
NAPA
SOLANO
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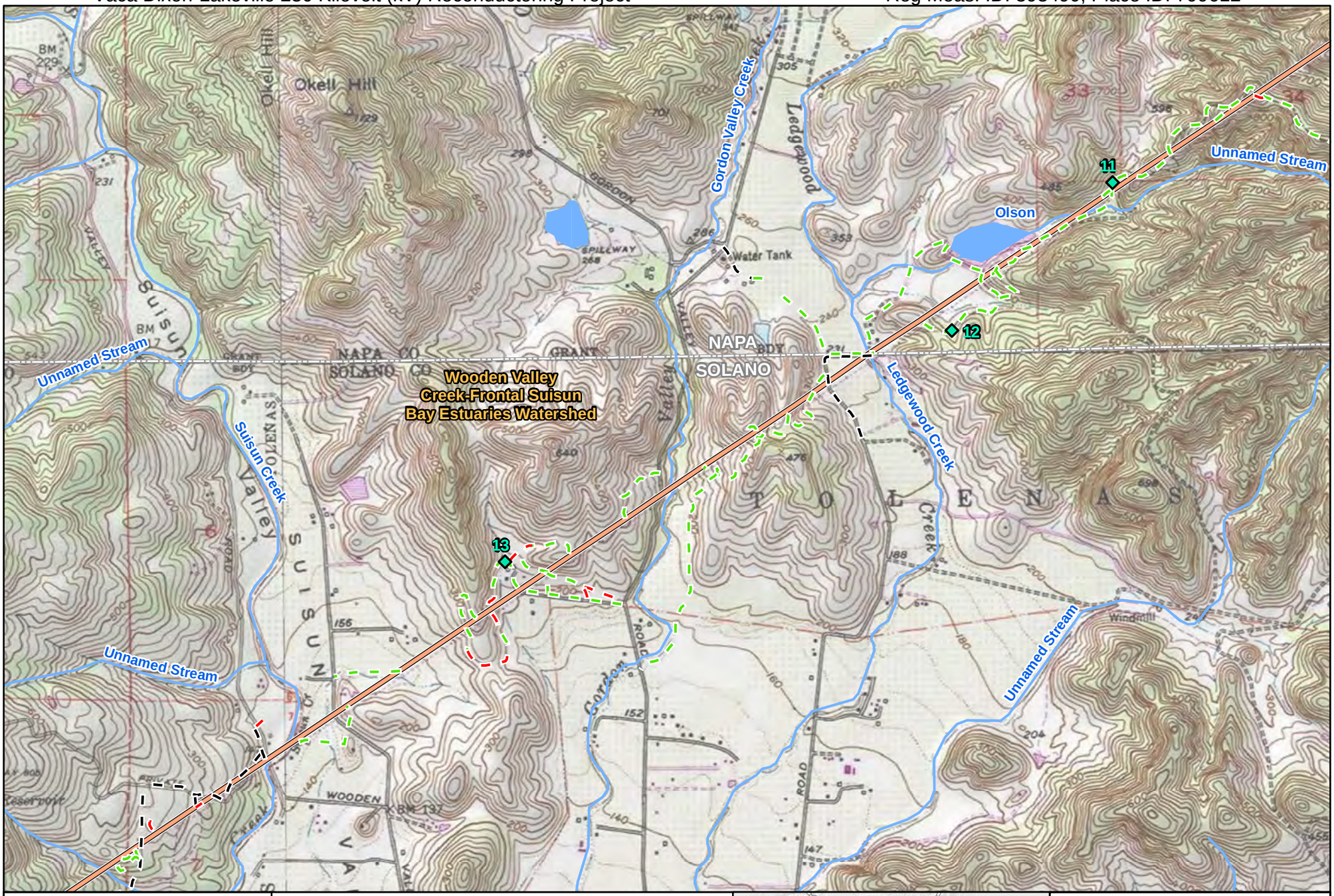
Vaca Dixon-Lakeville 230 kV Reconductoring Project
Project Overview Map
August 28, 2013


Okell Hill
Gordon Valley Creek
Ledgewood Creek
Unnamed Stream
Olson
Water Tank
NAPA CO
SOLANO CO
NAPA
SOLANO
Wooden Valley Creek-Frontal Suisun Bay Estuaries Watershed
Suisun Creek
Suisun Valley
TOLENAS
Unnamed Stream
Unnamed Stream
Unnamed Stream
WOODEN
11
12
13
Miles
0 0.25 0.5
1:24,000
Existing Substation
Existing Vaca Dixon-Lakeville 230 kV Transmission Line
Project Access
Existing Paved Road
Existing Unpaved Road
Overland Route
Crossing Improvement Site
Temporary Guard Structure
Water Feature
Watershed Boundary (HU10)
Source: AECOM 2013; PG&E 2013
Basemap: NAIP 2012
SONOMA
NAPA
SOLANO
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Vaca Dixon-Lakeville 230 kV Reconductoring Project
Project Overview Map
August 28, 2013


Gordon Valley Creek
Unnamed Stream
11
Olson
12
NAPA
SOLANO
Wooden Valley Creek-Frontal Suisun Bay Estuaries Watershed
Unnamed Stream
Suisun Creek
Ledgewood Creek
13
Unnamed Stream
Unnamed Stream
0
0.25
0.5
Miles
1:24,000
N
Pacific Gas and Electric Company
Existing Substation
Existing Vaca Dixon-Lakeville 230 kV Transmission Line
Project Access
Existing Paved Road
Existing Unpaved Road
Overland Route
Crossing Improvement Site
Temporary Guard Structure
Water Feature
Watershed Boundary (HU10)
Source: AECOM 2013; PG&E 2013
Basemap: NAIP 2012
SONOMA
NAPA
SOLANO
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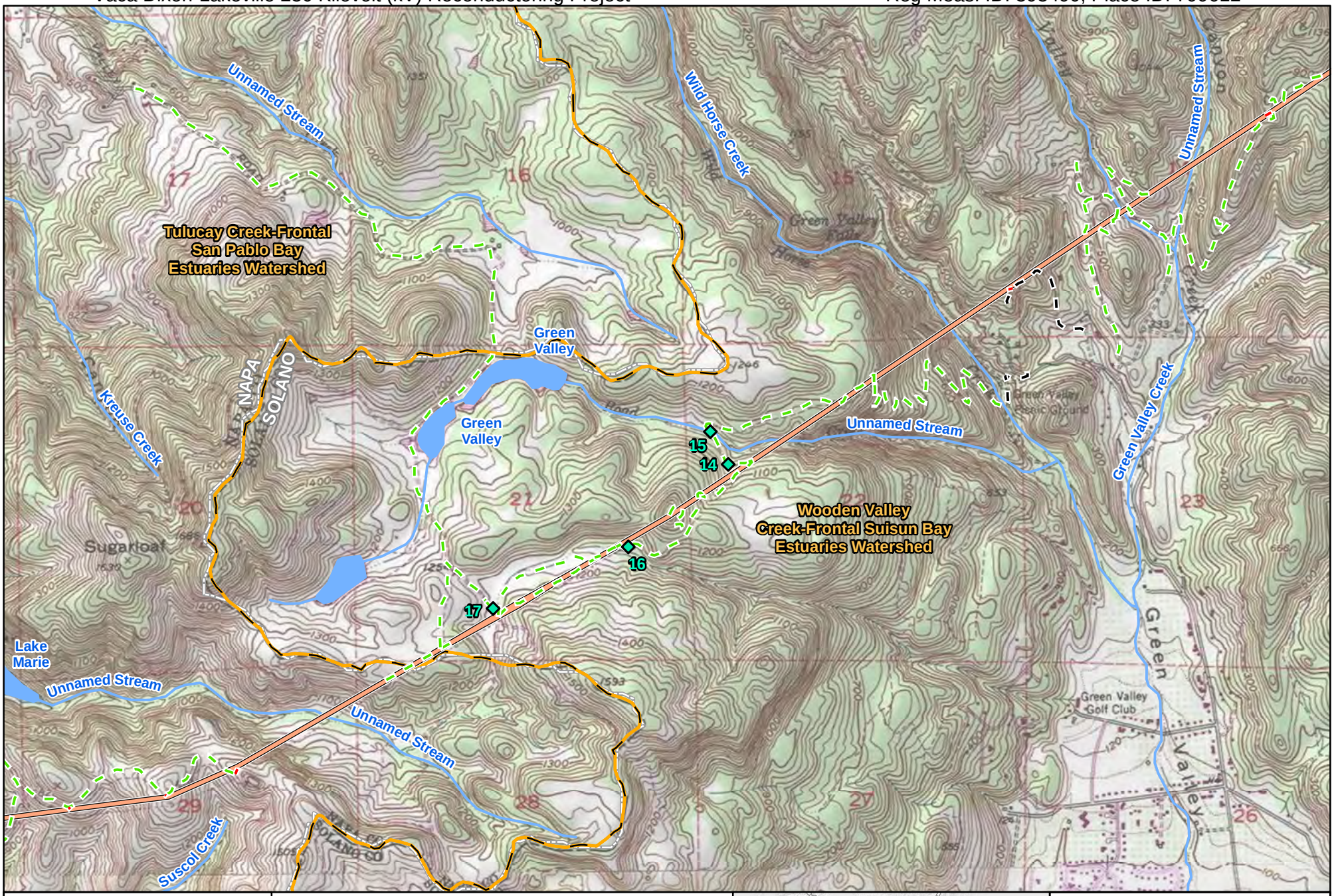
Vaca Dixon-Lakeville 230 kV Reconductoring Project
Project Overview Map
August 28, 2013



Miles
0 0.25 0.5

1:24,000

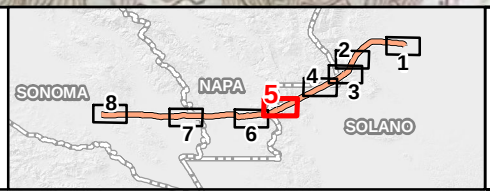
Pacific Gas and Electric Company

- Existing Substation
- Existing Vaca Dixon-Lakeville 230 kV Transmission Line

Project Access

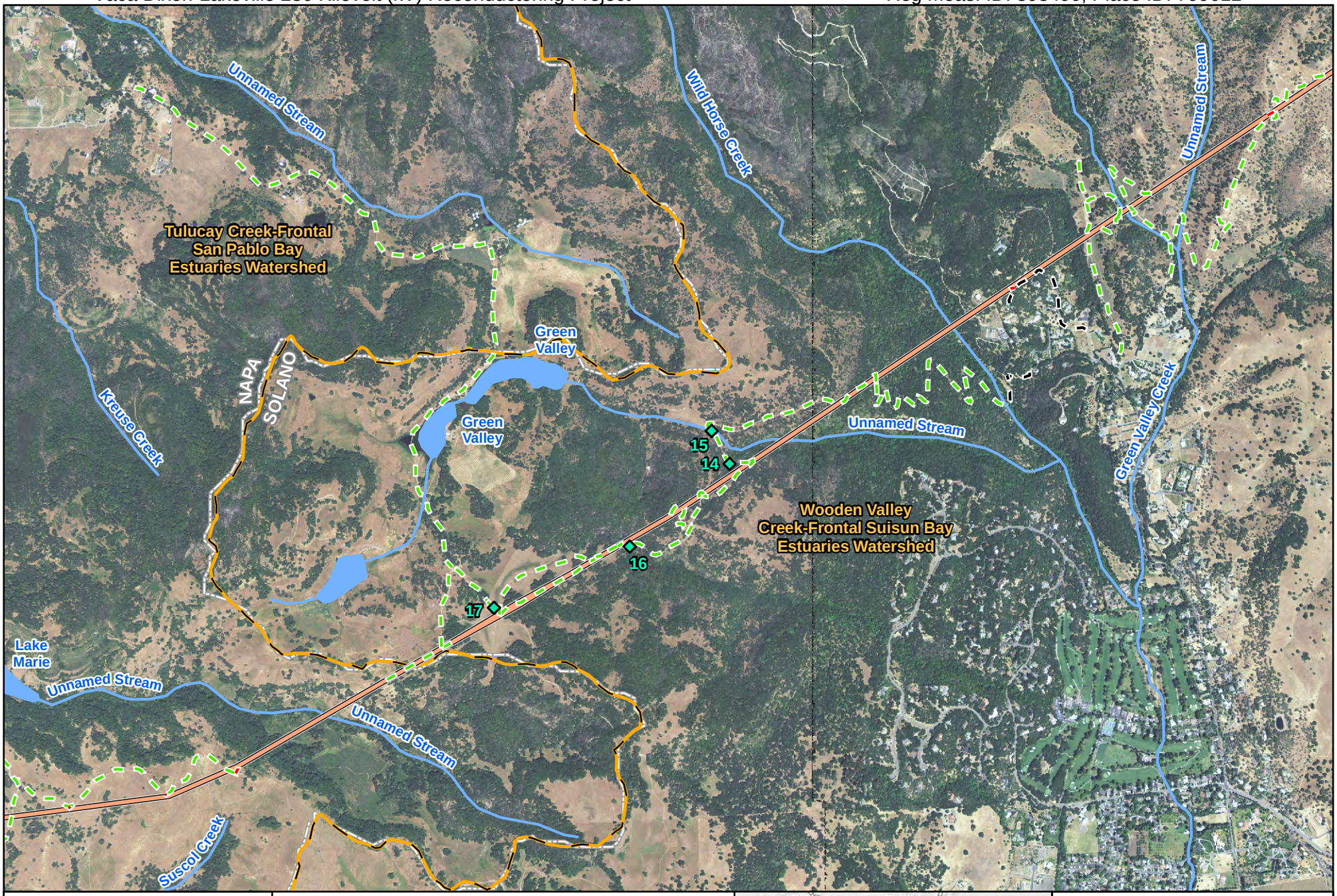
- Existing Paved Road
- Existing Unpaved Road
- Overland Route
- Crossing Improvement Site
- Temporary Guard Structure
- Water Feature
- Watershed Boundary (HU10)

Source: AECOM 2013; PG&E 2013
Basemap: NAIP 2012



Vaca Dixon-Lakeville 230 kV Reconductoring Project

Project Overview Map
August 28, 2013


Unnamed Stream
Wild Horse Creek
Unnamed Stream
Tulucay Creek-Frontal San Pablo Bay Estuaries Watershed
Green Valley
NAPA
SOLANO
Kreuse Creek
Green Valley
Unnamed Stream
Green Valley Creek
15
14
Wooden Valley Creek-Frontal Suisun Bay Estuaries Watershed
16
17
Lake Marie
Unnamed Stream
Unnamed Stream
Suscol Creek
0 0.25 0.5 Miles
1:24,000
Pacific Gas and Electric Company
Existing Substation
Existing Vaca Dixon-Lakeville 230 kV Transmission Line
Project Access
Existing Paved Road
Existing Unpaved Road
Overland Route
Crossing Improvement Site
Temporary Guard Structure
Water Feature
Watershed Boundary (HU10)
Source: AECOM 2013; PG&E 2013
Basemap: NAIP 2012
SONOMA
NAPA
SOLANO
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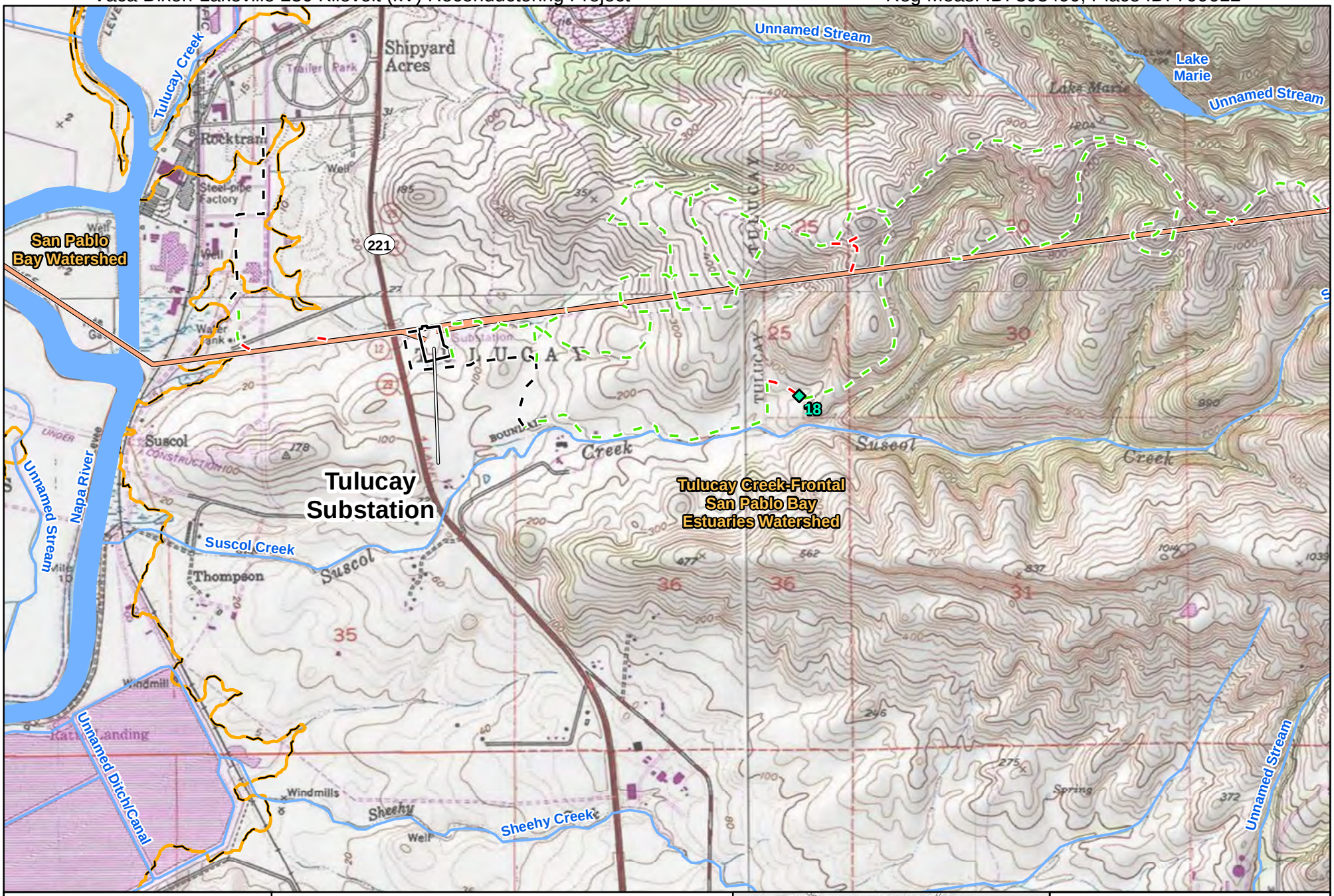
Vaca Dixon-Lakeville 230 kV Reconductoring Project
Project Overview Map
August 28, 2013


Tulucay Creek
Shipyard Acres
Unnamed Stream
Lake Marie
Unnamed Stream
Rocktram
Steel-pipe Factory
San Pablo Bay Watershed
221
TULUCAY
Tulucay Substation
18
Napa River
Unnamed Stream
Suscol
Suscol Creek
Thompson
Tulucay Creek-Frontal San Pablo Bay Estuaries Watershed
Windmill
Unnamed Ditch/Canal
Windmills
Sheehy Creek
Unnamed Stream
0 0.25 0.5 Miles
1:24,000
N
Pacific Gas and Electric Company
Existing Substation
Existing Vaca Dixon-Lakeville 230 kV Transmission Line
Project Access
Existing Paved Road
Existing Unpaved Road
Overland Route
Crossing Improvement Site
Temporary Guard Structure
Water Feature
Watershed Boundary (HU10)
Source: AECOM 2013; PG&E 2013
Basemap: NAIP 2012
SONOMA
NAPA
SOLANO
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Vaca Dixon-Lakeville 230 kV Reconductoring Project
Project Overview Map
August 28, 2013


Unnamed Stream
Lake Marie
Unnamed Stream
Tulucay Creek
San Pablo Bay Watershed
221
18
Tulucay Substation
Tulucay Creek-Frontal San Pablo Bay Estuaries Watershed
Unnamed Stream
Napa River
Suscol Creek
Unnamed Ditch/Canal
Sheehy Creek
Unnamed Stream
0 0.25 0.5 Miles
1:24,000
N
Pacific Gas and Electric Company
Existing Substation
Existing Vaca Dixon-Lakeville 230 kV Transmission Line
Project Access
Existing Paved Road
Existing Unpaved Road
Overland Route
Crossing Improvement Site
Temporary Guard Structure
Water Feature
Watershed Boundary (HU10)
Source: AECOM 2013; PG&E 2013
Basemap: NAIP 2012
SONOMA
NAPA
SOLANO
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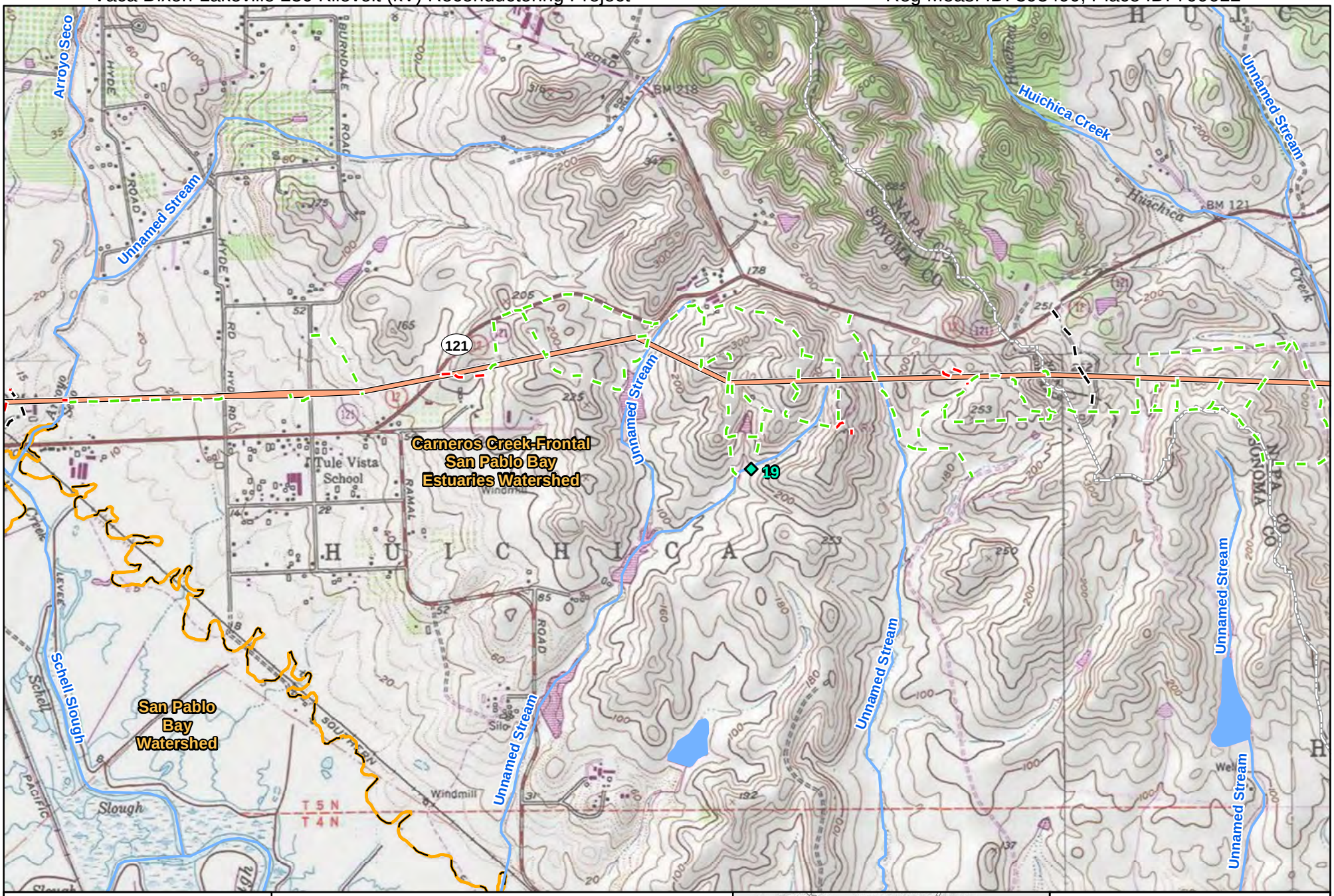
Vaca Dixon-Lakeville 230 kV Reconductoring Project
Project Overview Map
August 28, 2013


Arroyo Seco
Unnamed Stream
Huichica Creek
Huichica
BM 218
BM 121
121
Carneros Creek-Frontal
San Pablo Bay
Estuaries Watershed
19
Tule Vista
School
HUICHICA
San Pablo
Bay
Watershed
Schell Slough
Schell Creek
Slough
Pacific
Windmill
Silo
T5N
T4N
NAPA CO
SONOMA CO
Miles
0
0.25
0.5
1:24,000
Existing Substation
Existing Vaca Dixon-Lakeville 230 kV Transmission Line
Project Access
Existing Paved Road
Existing Unpaved Road
Overland Route
Crossing Improvement Site
Temporary Guard Structure
Water Feature
Watershed Boundary (HU10)
Source: AECOM 2013; PG&E 2013
Basemap: NAIP 2012
Pacific Gas and Electric Company
SONOMA
NAPA
SOLANO
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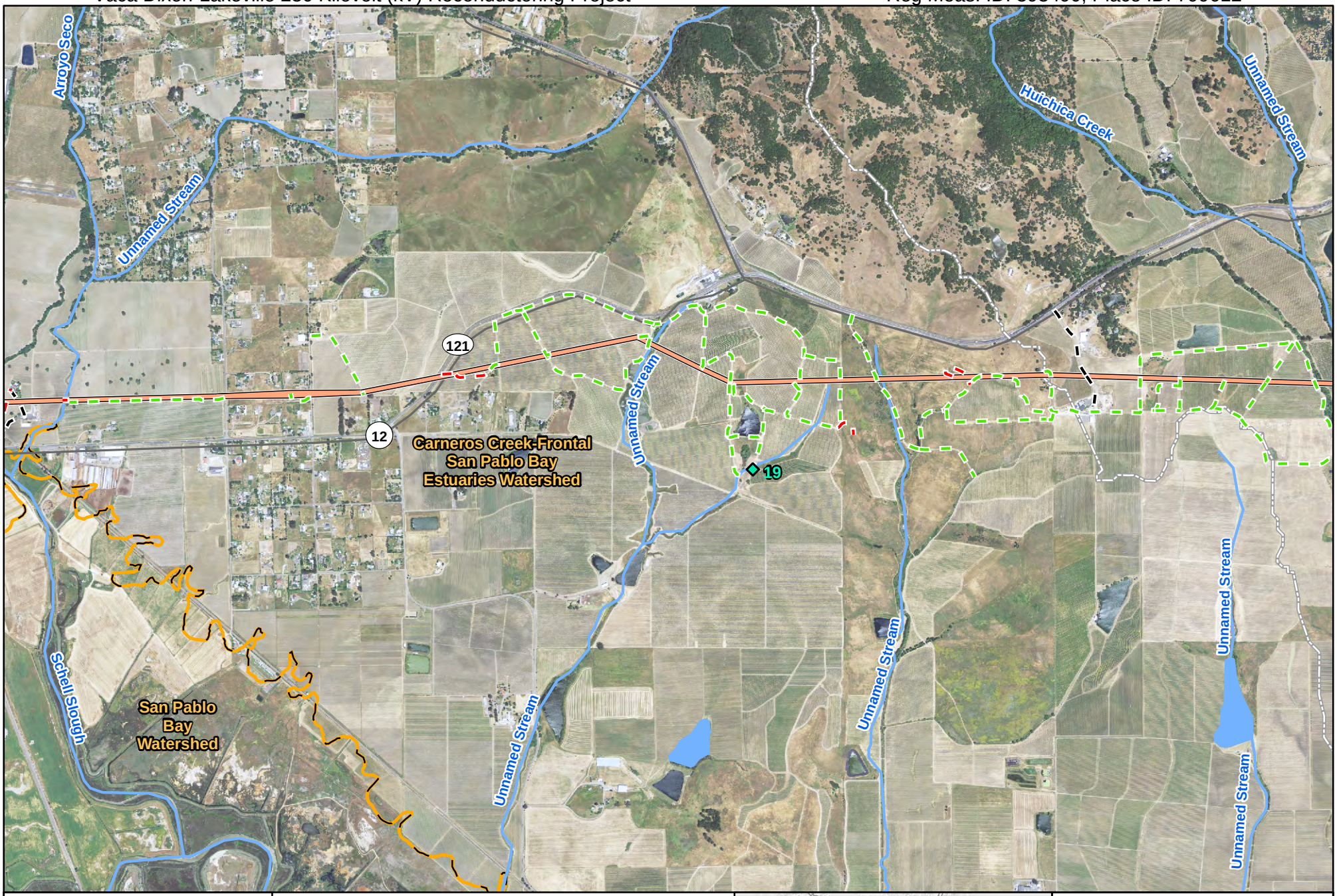
Vaca Dixon-Lakeville 230 kV Reconductoring Project
Project Overview Map
August 28, 2013



0 0.25 0.5 Miles

1:24,000

N

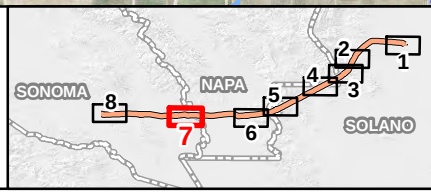
Pacific Gas and Electric Company

Existing Substation
Existing Vaca Dixon-Lakeville 230 kV Transmission Line

Project Access
Existing Paved Road
Existing Unpaved Road
Overland Route

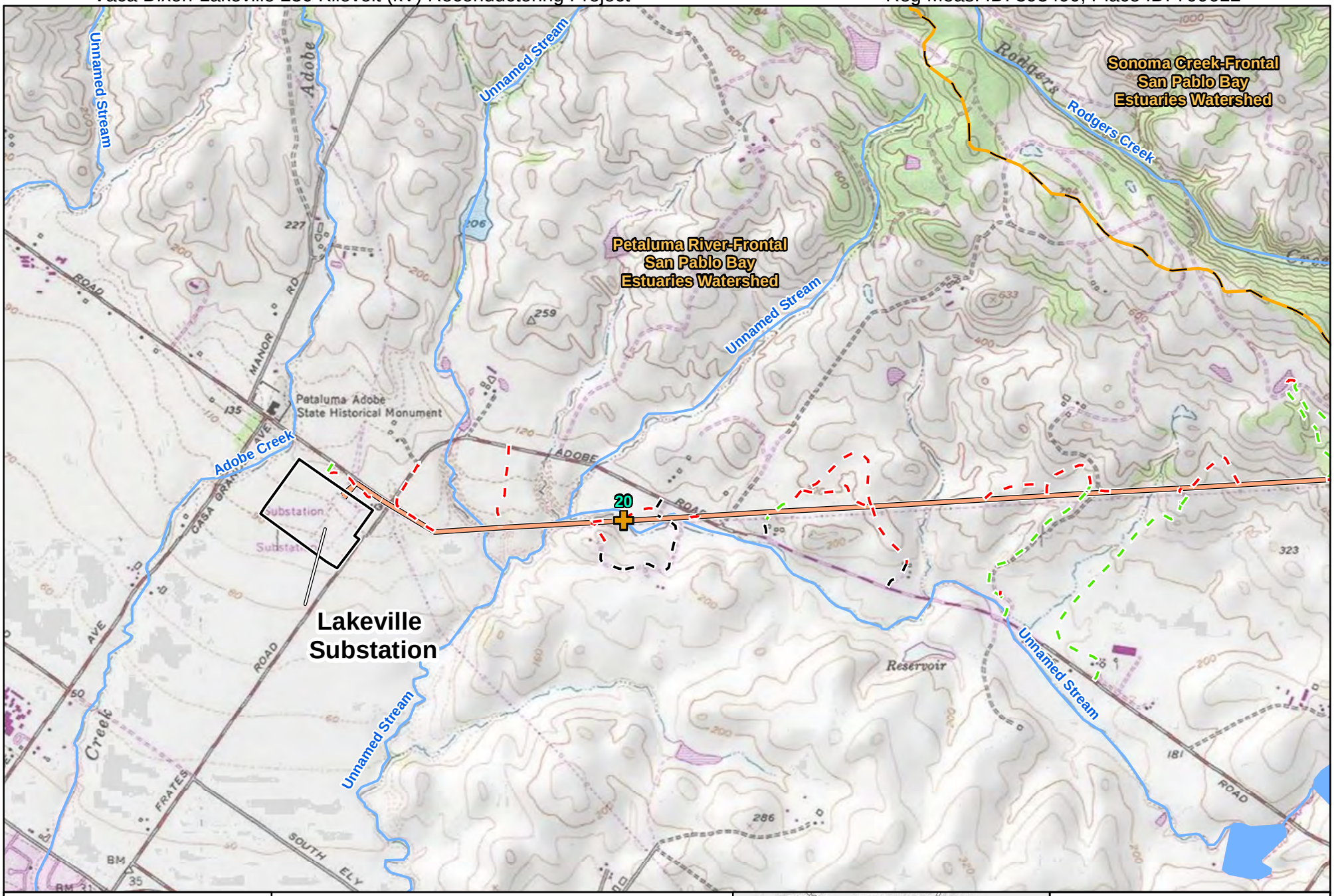
Crossing Improvement Site
Temporary Guard Structure
Water Feature
Watershed Boundary (HU10)

Source: AECOM 2013; PG&E 2013
Basemap: NAIP 2012



Vaca Dixon-Lakeville 230 kV Reconductoring Project

Project Overview Map
August 28, 2013


Sonoma Creek-Frontal
San Pablo Bay
Estuaries Watershed
Petaluma River-Frontal
San Pablo Bay
Estuaries Watershed
Unnamed Stream
Rodgers Creek
Adobe Creek
Petaluma Adobe
State Historical Monument
Lakeville
Substation
20
Reservoir
Miles
0 0.25 0.5
1:24,000
Existing Substation
Existing Vaca Dixon-Lakeville 230 kV Transmission Line
Project Access
Existing Paved Road
Existing Unpaved Road
Overland Route
Crossing Improvement Site
Temporary Guard Structure
Water Feature
Watershed Boundary (HU10)
Source: AECOM 2013; PG&E 2013
Basemap: NAIP 2012
SONOMA
NAPA
SOLANO
1
2
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Vaca Dixon-Lakeville 230 kV Reconductoring Project
Project Overview Map
August 28, 2013


Unnamed Stream
Unnamed Stream
Sonoma Creek-Frontal
San Pablo Bay
Estuaries Watershed
Rodgers Creek
Petaluma River-Frontal
San Pablo Bay
Estuaries Watershed
Unnamed Stream
Adobe Creek
20
Lakeville
Substation
Unnamed Stream
Unnamed Stream
0
0.25
0.5
Miles
1:24,000
Pacific Gas and Electric Company
Existing Substation
Existing Vaca Dixon-Lakeville 230 kV Transmission Line
Project Access
Existing Paved Road
Existing Unpaved Road
Overland Route
Crossing Improvement Site
Temporary Guard Structure
Water Feature
Watershed Boundary (HU10)
Source: AECOM 2013; PG&E 2013
Basemap: NAIP 2012
SONOMA
NAPA
SOLANO
1
2
3
4
5
6
7
8
Vaca Dixon-Lakeville 230 kV
Reconductoring Project
Project Overview Map
August 28, 2013

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Receiving Waters:

The following table shows the receiving waters associated with each impact site and Permittee-responsible mitigation site.

Table 1: Receiving Water(s) Information

Site ID	Waterbody Name	Impacted Aquatic Resource Type	Water Board/ USGS Hydrologic Unit	Receiving Waters	Receiving Waters Beneficial Uses	2012 303(d) Listing Pollutant
1	Unnamed Tributary to Gibson Canyon Creek	Wetland	Valley Putah-Cache 511.1	Sacramento-San Joaquin Delta/ Delta Waterways (northwestern portion)	MUN, AGR, PROC, IND, REC-1, REC-2, WARM, COLD, MIGR, SPWN (without COLD), WILD, NAV	Chlorpyrifos, DDT, Diazinon, Electrical Conductivity, Group A Pesticides, Invasive Species, Mercury, Unknown Toxicity
2	Unnamed Tributary to Alamo Creek	Wetland	Valley Putah-Cache 511.1	As Above	With Old Alamo Creek amendment: AGR, PROC, IND, REC-1, REC-2, WARM, WILD, NAV	As Above
3	Unnamed Tributary to Alamo Creek	Intermittent stream	Valley Putah-Cache 511.1	As Above	As Above	As Above
4	Unnamed Tributary to Alamo Creek	Intermittent stream	Valley Putah-Cache 511.1	As Above	As Above	As Above
5	Unnamed Tributary to Alamo Creek	Intermittent stream	Valley Putah-Cache 511.1	As Above	As Above	As Above

Table 1: Receiving Water(s) Information

Site ID	Waterbody Name	Impacted Aquatic Resource Type	Water Board/ USGS Hydrologic Unit	Receiving Waters	Receiving Waters Beneficial Uses	2012 303(d) Listing Pollutant
6	Unnamed Tributary to Alamo Creek	Intermittent stream	Valley Putah-Cache 511.1	As Above	As Above	As Above
7	Unnamed Tributary to Alamo Creek	Intermittent stream	Valley Putah-Cache 511.1	As Above	As Above	As Above
8[1]	Unnamed Tributary to Laguna Creek	Intermittent stream	Valley Putah-Cache 511.1	As Above	As Above	As Above
9[2]	Unnamed Tributary to Laguna Creek	Intermittent stream	Valley Putah-Cache 511.1	As Above	As Above	As Above
10	Unnamed Tributary to Laguna Creek	Perennial stream	Valley Putah-Cache 511.1	As Above	As Above	As Above
11	Unnamed Tributary to Ledgewood Creek	Intermittent stream	Suisun 207.23	Ledgewood Creek	FRSH, COLD, MIGR, SPWN, WARM, WILD, REC-1, REC-2	Diazinon
12	Unnamed Tributary to Ledgewood Creek	Intermittent stream	Suisun 207.23	As Above	As Above	As Above
13	Unnamed Tributary to Gordon Valley Creek	Intermittent stream	Suisun 207.23	Gordon Valley Creek	COLD, WARM, WILD, REC-1, REC-2	Not Listed

[1] Permittee-responsible mitigation site.

Table 1: Receiving Water(s) Information

Site ID	Waterbody Name	Impacted Aquatic Resource Type	Water Board/ USGS Hydrologic Unit	Receiving Waters	Receiving Waters Beneficial Uses	2012 303(d) Listing Pollutant
14	Unnamed Tributary to Dug Road Creek	Intermittent stream	Suisun 207.21	Wild Horse Creek/	FRSH, COLD, WARM, WILD, REC-1, REC-2	Not Listed
15	Dug Road Creek	Wetland	Suisun 207.21	As Above	As Above	As Above
16	Unnamed Tributary to Green Valley Creek	Wetland	Suisun 207.21	Green Valley Creek/	FRSH, COLD, MIGR, RARE, SPWN, WARM, WILD, REC-1, REC-2	Not Listed
17	Unnamed Tributary to Green Valley Creek	Wetland/ ephemeral stream	Suisun 207.21	As Above	As Above	As Above
18	Unnamed Tributary to Suscol Creek	Ephemeral stream	San Pablo 206.5	Suscol Creek	COLD, MIGR, RARE, SPWN, WARM, WILD REC-1, REC-2	Not Listed
19	Unnamed Tributary to Steamboat Slough	Wetland	San Pablo 206.4	Steamboat Slough	COMM, EST, RARE, WILD, REC-1, REC-2	Not Listed
20	Unnamed Tributary to Petaluma River	Wetland/ perennial stream	San Pablo 206.3	Petaluma River	COLD, EST, MIGR, RARE, SPWN, WARM, WILD, REC-1, REC-2, NAV	Diazinon, Nutrients, Pathogens, Sediment/Siltation,Trash

Individual Impact Locations:

The following table shows individual impact locations.

Table 2. Individual Direct Impact Information

Site ID	Latitude (decimal)	Longitude (decimal)	Indirect Impact Requiring Mitigation		Direct Impact Duration	Dredge			Fill/Excavation		
			Yes	No		Acres	Cubic Yards	Linear Feet	Acres	Cubic Yards	Linear Feet
1	38.402350°	-121.921086°	☐	☒	Temporary				0.016	64	36
					Permanent						
2	38.369522°	-122.036403°	☐	☒	Temporary						
					Permanent				0.018	50	20
3	38.366511°	-122.034061°	☐	☒	Temporary						
					Permanent				0.014	30	36
4	38.366092°	-122.035283°	☐	☒	Temporary						
					Permanent				0.012	80	20
5	38.364747°	-122.035283°	☐	☒	Temporary						
					Permanent				0.020	32	5
6	38.365008°	-122.035631°	☐	☒	Temporary						
					Permanent				0.007	50	22
7	38.363044°	-122.035958°	☐	☒	Temporary						
					Permanent				0.005	7	12
10	38.337097°	-122.056858°	☐	☒	Temporary						
					Permanent				0.001	50	34
11	38.322856°	-122.080511°	☐	☒	Temporary						

Table 2. Individual Direct Impact Information

Site ID	Latitude (decimal)	Longitude (decimal)	Indirect Impact Requiring Mitigation		Direct Impact Duration	Dredge			Fill/Excavation		
			Yes	No		Acres	Cubic Yards	Linear Feet	Acres	Cubic Yards	Linear Feet
					Permanent				0.005	45	17
12	38.317175°	-122.089592°	☐	☒	Temporary						
					Permanent				0.003	83	17
13	38.307047°	-122.113875°	☐	☒	Temporary						
					Permanent				0.006	35	34
14	38.267392°	-122.188097°	☐	☒	Temporary						
					Permanent				0.006	10	14
15	38.268836°	-122.189136°	☐	☒	Temporary						
					Permanent				0.006	15	14
16	38.263950°	-122.194111°	☐	☒	Temporary						
					Permanent				0.006	15	14
17	38.261272°	-122.201047°	☐	☐	Temporary						
					Permanent				0.006	10	14
18	38.245589°	-122.248283°	☒	☒	Temporary						
					Permanent				0.006	5	14
19	38.245731° 38.245019°	-122.393475° -122.393636°	☐	☒	Temporary						
					Permanent				0.006	15	14
20	38.250594°	-122.565536°	☐	☒	Temporary				0.006	4	15
					Permanent						

Compensatory Mitigation Information:

The following tables show compensatory mitigation types and locations.

Table 3. Permittee-Responsible Compensatory Mitigation (On-site Mitigation)[2]

Site ID	Latitude (decimal)	Longitude (decimal)	Aquatic Resource Type	Mitigation Method	Mitigation Quantity	
					Acres	Linear Feet
8	38.343600°	-122.048883°	Intermittent Stream	Enhanced	0.009	31
9	38.339433°	-122.048883°	Intermittent Stream	Enhanced	0.043	69

Table 4. Purchase of Mitigation Bank Credits (Off-site Mitigation)

Mitigation Bank	Name:	Cosumnes Floodplain Mitigation Bank
	Website:	https://ribits.usace.army.mil/ribits_apex/f?p=107:10:13708729925466::NO::P10_BANK_ID:3058 and http://www.wesmitigation.com/mitigation-conservation-projects/cosumnes-floodplain-mitigation-bank.cfm#page=general
Contact Information	Name:	Travis Hemmen
	Company:	Westervelt Ecological Services
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	Email:	THemmen@Westervelt.com
Mitigation Location	County:	Sacramento
	Latitude:	38.256181°
	Longitude:	-121.4345730°

Aquatic Resource Credit Type	Mitigation Method	Mitigation Quantity		
		Acres	Linear Feet	Number of Credits Purchased
Floodplain Mosaic Wetlands	Re-established	0.010	NA	0.010

[2] The mitigation sites are analyzed in the Project CEQA document.

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FINAL DRAFT

RESTORATION AND COMPENSATORY MITIGATION PLAN
VACA DIXON-LAKEVILLE 230KV
RECONDUCTORING PROJECT
SONOMA, NAPA, AND SOLANO COUNTIES, CALIFORNIA

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ACRONYMS AND ABBREVIATIONS

APM	Applicant-Proposed Measure
IS/MND	Initial Study/Mitigated Negative Declaration
LZ	Landing Zone
PG&E	Pacific Gas and Electric Company
project	Vaca Dixon-Lakeville 230 kV Reconductoring Project
PS	Pull Station
SOD	Sudden Oak Death
TWA	Tower Work Area

Section 1. INTRODUCTION

1.1. PURPOSE

This Restoration and Compensatory Mitigation Plan details mitigation and restoration efforts associated with ground-disturbing impacts resulting from the implementation of Pacific Gas and Electric Company's (PG&E) Vaca Dixon-Lakeville 230 kV Reconductoring Project (project) in Sonoma, Solano, and Napa counties, California (Figure 1: Location of the Project Area).

This plan discusses revegetation planning and monitoring efforts, including: an overview of the project; a brief description of the project area; an overview of potential impacts on vegetation resulting from project activities; recommendations for site revegetation, including seed mixes, plant palettes and planting methodology; and monitoring and reporting for the project.

This plan is intended to comply with the California Environmental Quality Act mitigation requirements as well as regulatory agency permit requirements from the following documents:

- Initial Study/Mitigated Negative Declaration (IS/MND) for the project (PG&E and AECOM 2014)
- Streambed Alteration Agreement from California Department of Fish and Wildlife
- Nationwide Permit from the U.S. Army Corps of Engineers
- Biological Opinion from the U.S. Fish and Wildlife Service

1.2. PROJECT OVERVIEW

PG&E plans to replace approximately 40 miles of existing conductors with upgraded conductors (reconductor), to increase capacity on the Vaca Dixon-Lakeville and Vaca Dixon-Tulucay-Lakeville lines. These lines run between Vaca Dixon Substation in the City of Vacaville, Tulucay Substation near the City of Napa, and Lakeville Substation near the City of Petaluma.

The project includes raising and/or reinforcing existing lattice steel towers; replacing conductor (wire) along the entire, approximately 40-mile alignment; modifying the Vaca Dixon, Tulucay, and Lakeville substations to accept the new conductors; and lowering distribution lines at two locations, to provide safe clearance. Because work on the transmission line will be limited to modifications of existing towers and conductor replacement, no modifications to the existing alignment will occur and no towers are anticipated to be removed or installed.

Modifications to Vaca Dixon, Tulucay, and Lakeville substations are anticipated to be minor.

1.3. EXISTING ENVIRONMENT

The following discussion briefly summarizes the existing environmental conditions in the project area. For more a more detailed setting discussion, refer to Section 3 of the *Draft Botanical Resource Survey Report* (Nomad Ecology 2013).

1.3.1 SETTING

The project alignment traverses urban, agricultural, and natural areas of Solano, Napa, and Sonoma counties. With its eastern terminus in Vacaville and its western terminus in Petaluma, the project area begins at its eastern terminus in the Sacramento Valley and crosses prominent geographic features heading west, such as the English Hills, Vaca Valley, the Vaca Mountains, Gordon Valley, Suisun

Figure 1. Location of the Project Area

Valley, the foothills of Twin Sisters, Green Valley, the Napa River, Carneros Valley, Sonoma Valley, and the Sonoma Mountains.

As described in the *Ecological Subregions of California* (USDA 1997), the project area is within the Sodic Claypan Terraces and Winters Terraces subsections of the Great Valley Section; the Western Foothills subsection of the Northern California Interior Coast Ranges Section; the Ultrabasic Complex subsection of the Northern California Coast Ranges Section; the Mount St. Helena Flows and Valleys, San Pablo Bay Flats, and Coastal Hills-Santa Rosa Plain subsections of the Northern California Coast Section; and the Suisun Hills and Valleys subsection of the Central California Coast Section (Table 1: Ecological Section and Subsections).

Prominent transportation routes that are crossed by the existing transmission lines in the project area include Interstate 505, Highway 12, Highway 29, Highway 116, Highway 121, and Highway 221. In addition, the lines cross several major waterways, including the Napa River and Sonoma Creek. The topography within the alignment ranges from valley floors at sea level to hills and mountains with steep slopes.

Table 1. Ecological Section and Subsections

SECTION	SUBSECTION	WORK AREAS[1]
Great Valley Section	Sodic Claypan Terraces	PS-1 A/B; LZ-3; TWA 1 to 10
	Winters Terraces	PS-14; LZ-11, LZ-20; TWA 10 to 22
Central California Coast Section	Suisun Hills and Valleys	PS-38, PS-64; LZ-29, LZ-33 A/B, LZ-38, LZ-64; TWA 23 to 38 and 56 to 69
Northern California Interior Coast Ranges Section	Western Foothills	LZ-44 A/B, LZ-52; TWA 39 to 55
Northern California Coast Ranges Section	Ultrabasic Complex	PS-76; LZ-73; TWA 70 to 77
Northern California Coast Section	Mount St. Helena Flows and Valleys	PS-80, PS-94, PS-108, PS-109, PS-126, PS-148, PS-165; LZ-85, LZ-94, LZ-98, LZ-103 A/B, LZ-123, LZ-126 A/B, LZ-132, LZ-134, LZ-136, LZ-138-139, LZ-140, LZ-148, LZ-154, LZ-160, LZ-165, LZ-172-173 A/B; TWA 78 to 111 and 117 to 180
	San Pablo Bay Flats	LZ-112; TWA 112 to 116
	Coastal Hills-Santa Rosa Plain	PS-189; LZ-181, LZ-188; TWA 180 to 190

[1]PS=Pull Station, LZ-Landing Zone, and TWA = Tower Work Area

1.3.2 VEGETATION

Vegetation in the project area is mainly dominated by non-native annual grasslands, oak woodlands, and planted crops, including orchards and vineyards. Within the non-native annual grassland, patches of native grasslands occur as well as seasonal wetlands and vernal pools. Other vegetation types present but less abundant include ruderal disturbed areas, freshwater and brackish marsh, coyote brush scrub, and riparian forest.

Sensitive Natural Communities

A total of 16 sensitive natural communities[1] were recorded in the survey area[2]. These communities are shown in Table 2: Sensitive Natural Communities in the Survey Area, which lists the total number of sensitive natural community acreages in the survey area. Details about impacts on sensitive natural communities in the project area are discussed in Section 2.2.1, Vegetation Communities.

Table 2. Sensitive Natural Communities in the Survey Area

VEGETATION TYPE	NUMBER OF POLYGONS	ACREAGE
UPLAND HERBACEOUS DOMINATED VEGETATION TYPES		
Danthonia californica (California Oatgrass) Herbaceous Alliance	1	0.98
Stipa pulchra (Purple Needlegrass) Herbaceous Alliance	6	2.72
Wildflower Fields	2	2.47
WETLAND HERBACEOUS DOMINATED VEGETATION TYPES		
Seasonal Wetland	15	4.74
Northern Hardpan Vernal Pool	16	5.14
Coastal and Valley Freshwater Marsh	8	4.74
Coastal Brackish Marsh	6	40.84
Rubus armeniacus (Himalayan blackberry) Semi-Natural Shrubland Stand	1	0.95
Schoenoplectus acutus (Hardstem Bulrush) Herbaceous Alliance	1	0.28
Typha latifolia (Cattail) Herbaceous Alliance	11	12.18
SHRUB DOMINATED VEGETATION TYPES		
Salix laevigata (Red Willow) Woodland Alliance	9	19.16
Salix lasiolepis (Arroyo Willow) Shrubland Alliance	1	0.14
WOODLAND AND FOREST VEGETATION TYPES		
Alnus rhombifolia (White Alder) Forest Alliance	2	1.60
Quercus lobata (Valley Oak) Woodland Alliance	27	39.18
Salix gooddingii (Black Willow) Woodland Alliance	1	0.29
Umbellularia californica (California Bay) Forest Alliance	2	0.75
Total	**107**	**133.71**

Source: Nomad Ecology 2013

[1] The CNDDB treats a number of natural communities as rare, which are given the highest inventory priority (Holland 1986).

[2] The survey area was a 500-foot-wide swath centered on the transmission line right-of-way, as well as landing zones, pull sites, and access roads.

Section 2. POTENTIAL IMPACTS AND REVEGETATION

This section describes overall project impacts, potential impacts on vegetation communities, and invasive weeds and pathogens in the project area. Impacts on special-status plant species[3] are not anticipated during project implementation.

2.1. SUMMARY OF PROJECT COMPONENTS

2.1.1 PROJECT WORK AREAS

According to the project IS/MND (PG&E and AECOM 2014), approximately 336 temporary work areas would be established to facilitate project construction, including construction yards, tower work areas, guard structure work areas, pull sites, and helicopter landing zones (Table 3: Temporary Work Area Summary). Note that the project includes some duplication of work areas, such as duplication of Landing Zones, in portions of the project in order to ensure flexibility with avoidance of resource and other identified project constraints in the year of construction.

Table 3. Temporary Work Area Summary

WORK SPACE TYPE	ESTIMATED QUANTITY	REQUIRED IMPROVEMENTS (IS/MND)	APPROXIMATE TOTAL ACREAGE[1]
Construction Yards	2	None (already developed)	8.0
Tower Work Areas	171	Vegetation removal and minor grading may be required	88.66
Guard Structure Work Areas	114	Vegetation removal may be required	30.60
Pull Sites	13	Vegetation removal and minor grading may be required	28.56
Helicopter Landing Zones	36	Vegetation removal and minor grading may be required	85.23

Source: IS/MND (PG&E and AECOM 2014)

[1]Calculations were completed by Nomad Ecology in ArcGIS based on shapefiles of project components provided by AECOM. This information is preliminary and is subject to adjustment based on construction constraints, site-specific conditions, final engineering, and other factors. Acreage calculation excludes access routes.

Portions of some pull sites, helicopter landing zones, and tower work areas would need to be established by tree trimming and vegetation clearing. Mowing and grading would be necessary at some of the temporary work areas for fire prevention, vehicle movement, and to create a safe and level surface. Shrubs in these areas may be mowed and shredded or removed using a mower or similar equipment. During clearing activities, vegetation would be mowed or grubbed, leaving root systems intact wherever possible, to encourage resprouting and minimize erosion. In some locations, geotechnical fabric and gravel may be applied temporarily in a work area.

[3] Special-status plant species are those listed as Endangered, Threatened, or Rare by the U.S. Fish and Wildlife Service and/or the California Department of Fish and Wildlife, as well as plant species included in the California Native Plant Society's *Inventory of Rare and Endangered Plants of California,* including CNPS Ranks 1A, 1B, 2A, and 2B. Affects analysis of Rank 4 plants also are included on a case-by-case basis if they are determined to be locally significant and relevant to a particular project.

Construction Yards

Two construction yards have been identified for use during project construction. Because the soil in the proposed construction yards has been disturbed previously, limited or no site preparation is expected to be necessary. These construction yards are expected to range between 2 and 4 acres.

Tower Work Areas

A total of 171 tower work areas have been identified for use during project construction. Each of these is expected to be approximately 0.5 acre; however, depending on the nature of the work, construction activities may require up to 1 acre. Site preparation is not expected to be required for the majority of the tower work areas, but in some instances it may include vegetation or crop removal, tree trimming, or grading/blading of equipment pads, as needed.

Guard Structure Work Areas

Before removing the existing conductors, PG&E would establish up to 114 temporary guard structures to prevent conductors from sagging onto other lines or roads during removal or installation. Installation of guard structures is expected to require an approximately 0.1-acre work area at each proposed crossing; however, a work area of up to 0.5 acre may be required, depending on site-specific conditions.

Pull Sites

A total of 13 pull sites would be established along the alignment, generally beneath or immediately adjacent to the existing line. Each pull site is anticipated to have a footprint of up to approximately 1.4 acres, but may be up to 2 acres in size. Site preparation is not expected to be required for the majority of the pull sites, but some vegetation or crop removal, tree trimming or removal, or minor grading/blading of equipment pads, may be performed as needed.

Helicopter Landing Zones

To expedite construction and minimize intrusion and ground disturbance, tower modification would be conducted by helicopter to the extent possible. To accommodate helicopter access to project towers, up to 36 off-site helicopter landing zones would be established temporarily, to store and assemble materials and be used for refueling. Construction will be phased; therefore there may be interim periods where helicopter landing zones are not used during different construction phases. These helicopter landing zones would be located on PG&E-owned parcels or nearby industrial properties where possible. These landing zones would range in size from 2 to 3 acres. They would be established within open, topographically flat areas, made up of either grassland, ruderal or paved surfaces that may require grading or vegetation removal.

2.1.2 PROJECT ACCESS

Access to the majority of the alignment is already available to support routine operation and maintenance activities to the existing lines. Minor vegetation trimming may be required to facilitate equipment access. PG&E may also grade new temporary unpaved roads or improve (e.g., rocking, mowing, grading, widening) existing dirt roads and temporary overland travel routes to provide access to the towers along the existing alignment. An overview of project access road needs is provided in Table 4. Access Summary.

The project would require improvements at approximately 20 locations where access roads cross drainages, creeks, or other water features, such as installing new culverts, replacing existing culverts, installing a temporary bridge, and/or adding rock, rip rap or fill (dirt) so that the locations are serviceable during construction and allow safe passage of construction vehicles and equipment. These locations are described further in Section 2.2.2, Wetlands and Waters.

Table 4. Access Summary

Type of Road	Road Surface/Improvements	Approximate Maximum Width (feet)	Approximate Maximum Length (feet)	Total Approximate Maximum Area (acres)
Existing Paved	No improvements would be required aside from repairing any damage caused by the project.	20	65,534	30.09
Existing Unpaved	Widening, grading, and/or vegetation removal may occur as necessary. Existing roads may be expanded at corners, passing areas, or intersections, to allow safe passage of equipment.	12	344,288	94.85
Overland Route	Vegetation removal may occur as necessary for fire prevention purposes.	12	42,354	11.67

Source: IS/MND (PG&E and AECOM 2014).

2.2. Impacts to Botanical Resources

2.2.1 Vegetation Communities

Potential Impacts

Table 5 shows the potential impacts on each vegetation type and which pull sites, helicopter landing zones, and tower work areas are located within that vegetation type. The total disturbance to natural habitats (i.e., ruderal, non-native grassland, native grassland, coyote brush scrub, oak woodland, and seasonal wetland) is anticipated to total a maximum of approximately 140 acres (excluding access), with the majority being ruderal and non-native grassland habitats. It is anticipated that impact acreages are likely to be lower than the maximum acreage permitted for the project.

Native grasslands, a sensitive natural community, in the project area are represented by California oatgrass grassland, purple needlegrass grassland, and wildflower fields. Temporary impacts are anticipated to occur on native grasslands at Tower Work Areas 45, 56, and 110, and LZ-94.

Table 5. Detailed Land Cover Type Assessment

Vegetation Type[1]	Subtype[1]	Approximate Size of Temporary Impact (Acres)[2]	Construction Location[3]
Natural Vegetation Communities			
Ruderal	-	57.34	PS-1A, PS-1B, PS-14, PS-126, PS-109, PS-148, PS-189 LZ-33A, LZ-38, LZ-44A, LZ-44B, LZ-52, LZ-64, LZ-123, LZ-132, LZ-134, LZ-136, LZ-138, LZ-139, LZ-140, LZ-154, LZ-172, LZ-181, LZ-188 TWA 1, 3, 17, 30, 33, 71, 109, 111, 124-125, 141, 146-147, 154-156, 163, 167, 169, 186
Non-Native Grassland	-	66.92	PS-14, PS-76, PS-80, PS-94, PS-108, PS-165 LZ-29, LZ-20, LZ-38, LZ-85, LZ-94, LZ-98, LZ-103A, LZ-103B, LZ-134, LZ-148, LZ-160, LZ-165, LZ-173B, LZ-98 TWA 3, 9-16, 18-22, 24-26, 28-32, 40-51, 53-55, 57-63, 65-70, 72, 74-75, 77-85, 87-92, 95-104, 106-107, 109-110, 134, 137, 139, 160-161, 164-166, 170, 172, 174, 177-182, 184-185, 187
Native Grassland	California Oatgrass	0.42	TWA 110
	Purple Needlegrass	0.35	TWA 45, 56
	Wildflower Fields	1.48	LZ-94; TWA 110
Coyote Brush Scrub	-	1.40	TWA 41, 85, 87, 90, 97, 173-174
Oak Woodland[4]	Coast Live Oak Woodland	4.79	PS-94, PS-108; LZ-85 TWA 74-75, 86-92, 95-97, 107, 173-174, 177, 180
	Coast Live Oak/Manzanita	0.12	TWA 88
	Blue Oak	3.79	PS-76, PS-80 TWA 40, 42-50, 53, 57-60, 62-63, 65, 70, 77-84
	Valley Oak	1.03	LZ-173B; TWA 36-37, 72-73, 158, 172
	Interior Live Oak	3.03	LZ-85; TWA 27, 29-30, 32, 37, 41-42, 45, 48, 49, 51, 54-56, 60-61, 64, 67, 78, 80-81, 84-85
	California Bay	0.02	TWA 104
Seasonal Wetland	-	0.02[5]	TWA 1, 10
Northern Hardpan Vernal Pool	-	0 (work conducted by helicopter or on foot)	TWA 3
Coastal Brackish Marsh	-	0 (work conducted by helicopter or on foot)	TWA 117
Other Land Cover Types			
Developed	-	88.17	PS-14, PS-148, PS-189, PS-109, PS-1B LZ-44A, LZ-112, LZ-132, LZ-172, LZ-173B, LZ-11 TWA 10, 12, 14, 17, 20, 31, 34, 64, 109, 118, 124, 154-156, 185
Dryland Farmed	-	14.84	PS-126 LZ-3, LZ-33B, LZ-126B, LZ-126A TWA 2, 18-19, 71, 127, 183, 187-188

Vegetation Type[1]	Subtype[1]	Approximate Size of Temporary Impact (Acres)[2]	Construction Location[3]
Orchard	-	6.03	PS-38, PS-64; LZ-38; TWA 34-36, 38-39, 64, 125
Urban Mix	-	2.81	PS-14, PS-148; LZ-44A; TWA 27, 124-125,146, 156, 163
Vineyard	-	26.35	PS-108, PS-126 LZ-73, LZ-173A, LZ-136 TWA 71, 73, 104-107, 118-123, 125, 127-136, 138, 140-146, 149-153, 157-160, 162-163, 166-167, 169, 171, 175-176, 186

Notes:
[1] Detailed vegetation mapping was completed by Nomad Ecology (Nomad Ecology 2013).
[2] Calculation were completed by Nomad Ecology in ArcGIS based on shapefiles of project components provided by AECOM. Acreage calculation excludes access routes. This information is preliminary and is subject to adjustment based on construction constraints, site-specific conditions, final engineering, and other factors.
[3] PS=Pull Station; LZ = Landing Zone; TWA = Tower Work Area
[4] Oak woodland includes both upland habitat and riparian habitat in the vicinity of streams. Impacts to this vegetation type may not necessarily result in the removal of trees as access routes and work locations may be sited between trees.
[5] IS/MND (PG&E and AECOM 2014) also notes 0.04 acre of permanent impact.

Revegetation

The revegetation goal is to return vegetation to pre-construction conditions. All revegetation will be accomplished by direct seeding grasses and forbs, and shrubs and trees as appropriate. To decrease the possibility of introducing pathogens from a plant nursery to the site, container stock will not be used for revegetation. Seed mixes and planting methodology are described in Section 4, Revegetation Implementation.

2.2.2 Wetlands and Waters of the U.S.

Potential Impacts

Aquatic resources would be impacted at up to 19 locations because of road crossing improvement or temporary guard structure locations required as part of the project (Table 6). Work at these locations would result in potential impacts on seasonal wetlands, streams[4], and riparian habitat.

Although northern hardpan vernal pool is present at Tower Work Area 3, construction in this area is planned to be performed with a helicopter or on foot, and thus no impact would occur. Similarly, coastal brackish marsh exists at Tower Work Area 117; construction in this area would be performed with a helicopter or on foot, and thus no impact would occur.

Revegetation

All disturbed areas in wetlands and waters will be revegetated with native plant species with a local origin as feasible in order to return vegetation to pre-construction conditions. Seed mixes and planting methodology are described in Section 4, Revegetation Implementation.

Compensatory mitigation requirements pertaining to the California red-legged frog under the 404 Nationwide Permit will be implemented separately from this plan. Under the 401 Water Quality Certification, a Mitigation Plan has been submitted to address wetland impacts.

[4] Streams include intermittent waters, perennial waters, and ephemeral waters.

Table 6. Aquatic Resource Impacts by Site

AQUATIC SITE NUMBER[1]	LOCATION[2]	AQUATIC RESOURCE TYPE[1]	VEGETATION TYPE	IMPACT	PERMANENT IMPACT (ACRES) [1]	TEMPORARY IMPACT (ACRES) [1]
1	PS-1A	Wetland	Seasonal Wetland	Install temporary culvert	0	0.016
2	Outside project area between TWA 39 and 40	Wetland	-[2]	Construct at-grade crossing	0.018	0
3	Between TWA 41 and 42	Intermittent waters	Oak woodland (Coast live oak)	Modify existing culvert	0.014	0
4	Between TWA 41 and 42	Intermittent waters	Oak woodland (Coast live oak)	Replace culvert	0.012	0
5	Between TWA 41 and 42	Intermittent waters	Oak woodland (Blue oak)	Place fill over existing culvert	0.02	0
6	Between TWA 41 and 42	Intermittent waters	Non-native grassland	Construct at-grade crossing	0.007	0
7	Between TWA 42 and 43	Intermittent waters	Oak woodland (Blue oak)	Replace culvert	0.005	0
9	Between TWA 49 and 50	Intermittent waters	Oak woodland (Blue oak)	Install temporary bridge	0	0
10	Between TWA 53 and 54	Perennial waters	Oak woodland (Interior Live Oak)	Construct at-grade crossing	0.001	0
11	Between TWA 59 and 60	Intermittent water	Oak woodland (Interior Live Oak)	Modify existing culvert	0.005	0
12	Outside project area near TWA 63	Intermittent waters	Oak woodland (Valley Oak)	Replace culvert	0.003	0

AQUATIC SITE NUMBER[1]	LOCATION[2]	AQUATIC RESOURCE TYPE[1]	VEGETATION TYPE	IMPACT	PERMANENT IMPACT (ACRES)[1]	TEMPORARY IMPACT (ACRES)[1]
13	Outside study area near TWA 69	Intermittent waters	Non-native grassland	Install culvert	0.006	0
14	Between TWA 89 and 90	Intermittent waters	Oak woodland (Coast Live Oak)	Construct at-grade crossing	0.006	0
15	Outside project area near TWA 89	Wetland	Seasonal Wetland	Construct at-grade crossing	0.006	0
16	Between TWA 90 and 91	Wetland	Oak woodland (Coast Live Oak)	Construct at-grade crossing	0.006	0
17	Between TWA 92 and PS-94	Wetland/ephemeral waters	Seasonal Wetland	Construct at-grade crossing	0.006[4]	0
18	Outside project area near LZ-103B	Ephemeral waters	Non-native grassland	Construct at-grade crossing	0.006	0
19	Outside project area at LZ-140	Wetland	Ruderal	Construct at-grade crossing	0.006	0
20	Between TWA 185 and 186	Wetland/perennial waters	Freshwater marsh /Red willow woodland	Install temporary guard structures	0	0.006[4]
				Approximate Total Wetlands	**0.04**	**0.02**
				Approximate Total Waters	**0.10**	**0**

[1] Source: IS/MND (PG&E and AECOM 2014). These acreages include anticipated approximated impacts to the bed, bank, and channel, and do not include areas above the top of bank.
[2] Areas with a "-" were outside the survey area.

2.2.3 TREES

Potential Impacts

Eucalyptus trees may be removed for construction along the western edge of Tulucay Substation.

Tree trimming or removal may be required to facilitate equipment access. Any necessary tree removal will be evaluated by the Project Biologist. All trees removed will be tallied by species in order to determine replacement requirements.

Revegetation

Consistent with the Streambed Alteration Agreement (SAA) for the project, existing native trees to be removed within areas subject to the jurisdiction of the SAA will be replaced with native trees at a 3:1 ratio; non-native trees will be replaced with native trees at a ratio of 2:1; smaller shrubs and understory vegetation will be replaced at a 1:1 ratio. In upland areas of the project, existing native trees to be removed will be replaced with native trees at a 3:1 ratio and non-native trees will be replaced with native trees at a ratio of 1:1. The species of tree to be replanted will be based on the tree species removed and the vegetation type. Trees will be direct seeded, as outlined in Section 4, Revegetation Implementation.

2.2.4 SPECIAL-STATUS PLANTS

Potential Impacts

Five special-status plant species were recorded in the project area (Nomad Ecology 2013): Baker's navarretia (*Navarretia leucocephala* subsp. *bakeri*), bearded popcorn flower (*Plagiobothrys hystriculus*), Mason's lilaeopsis (*Lilaeopsis masonii*), oval-leaved viburnum (*Viburnum ellipticum*), and Sonoma sunshine (*Blennosperma bakeri)* (Table 7).

Although all five species were found during project-specific botanical surveys, only three—Mason's lilaeopsis, Baker's navarretia, and bearded popcorn flower—were present in close proximity to but outside work areas, where potential impacts could occur. Implementation of avoidance and minimization as outlined in the IS/MND and placement of work areas as planned would result in no impacts on special-status plant species.

Table 7. Special-Status Plant Species in the Project Vicinity

COMMON NAME (SCIENTIFIC NAME)	LISTING STATUS	LOCATION	ANTICIPATED IMPACTS AND MITIGATION
Baker's navarretia (*Navarretia leucocephala* subsp. *bakeri*)	CRPR 1B.1	Within the Remy Preserve, east of Interstate 505 between TWA 3 and TWA 9 in an area grazed by cattle.	None
Bearded popcorn flower (*Plagiobothrys hystriculus*)	CRPR 1B.1	In a disced mesic field immediately west of Interstate 505, south of the access road leading to TWA 9.	None
Mason's lilaeopsis (*Lilaeopsis masonii*)	SR CRPR 1B.1	On the riverbanks and tidal mudflat areas of the Napa River between TWA 112 and TWA 115.	None
Oval-leaved viburnum (*Viburnum ellipticum*)	CRPR 2.3	At the bottom of a steep canyon, straddling an ephemeral stream in the Napa County portion of the Vaca Mountains.	None

COMMON NAME (SCIENTIFIC NAME)	LISTING STATUS	LOCATION	ANTICIPATED IMPACTS AND MITIGATION
Sonoma sunshine (*Blennosperma bakeri)*	FE SE CRPR 1B.1	Observed in a wet depression in non-native grassland habitat, along an existing dirt road, opposite Bonness Road east of Arnold Drive.	None

Source: IS/MND (PG&E and AECOM 2014).

Revegetation

No impacts are anticipated therefore no revegetation of special-status plant species will be necessary.

2.3. INVASIVE SPECIES

2.3.1 INVASIVE WEEDS

Project-related activities have the potential to introduce or spread invasive weed species within work areas. Several invasive weed species tracked by the California Invasive Plant Council and California Department of Food and Agriculture were recorded in the project area. Of these species, the following discussion only includes those that have elevated threat rankings, are dominant in the project area in a given area (to serve as a record of existing infestations), pose a potential threat to adjacent botanical resources, or have the potential to be more widely spread during project-related activities. Nine invasive plant species of concern, all of which are not native to any part of California, were observed in the project area during surveys by Nomad Ecology in 2013: barb goat grass (High/B), black mustard (Moderate), purple star thistle (Moderate/B), yellow star thistle (High), medusahead grass (High/C), fennel (High), Klamath weed (Moderate), perennial pepperweed (High/B), and Harding grass (Moderate) (Nomad Ecology 2013). The general locations of these invasive weeds in the project area are listed in Table 8. Trace individuals of other non-native plant species with weed ratings also were observed in the project area; however, because of the low number, limited location, and lack of perceived threats, these species are not discussed.

Ubiquitous non-native plant species [e.g. ripgut brome (*Bromus diandrus*), wild oats (*Avena fatua*), Italian ryegrass (*Festuca perenne*), among others] are not considered target invasive weeds for the purpose of this revegetation plan due to the infeasibility of controlling them in the project areas and because they comprise a major component of grasslands on site and elsewhere in the region.

PG&E will implement BMPs for the avoidance of invasive weed spread as outlined in APM BIO 14 in the IS/MND for the project.

Table 8. Invasive Weeds Observed in the Project Area

Common Name Scientific Name	CDFA Rank	Cal-IPC Rank	General Locations
barbed goat grass *(Aegilops triuncialis)*	B	High	–Large infestations at TWA 45, 46, and 47 and between TWA 46 and 47 in the Vaca Mountains. –Between TWA 59 and 60 in the Vaca Mountains. –Along access to and between TWA 89 and 90 in Vallejo Lakes. –Between TWA 90 and 91, at TWA 91, west of TWA 94, and at TWA 96 in Vallejo Lakes.
black mustard (*Brassica nigra)*	-	Moderate	–Near TWA 73 near Suisun Creek. –At TWA 182 in pasture. –In vineyards throughout the Carneros Valley.
purple starthistle *(Centaurea calcitrapa)*	B	Moderate	–Between TWA 21 and 22. –At TWA 98. –Between TWA 96 and 97. –Near TWA 103. –Between TWA 180 and 181.
yellow starthistle *(Centaurea solstitialis)*	-	High	–Large stand at TWA 26. –Between TWA 43 and 44, at TWA 44, between TWA 44 and 45. –Between TWA 61 and TWA 62, south of TWA 62 along access. –Around TWA 65. –Northeast of TWA 82 and TWA 90 and east of TWA 85 in the Skyline Wilderness Area and Vallejo Lakes.
medusahead grass *(Elymus caput-medusae)*	C	High	–Throughout grasslands in the project area.
fennel *(Foeniculum vulgare)*	-	High	–East of TWA 110 in the wildflower field vegetation. –South of TWA 111 near the unnamed watercourse that is hydrologically connected to the Napa River.
Klamath weed (*Hypericum perforatum*)	-	Moderate	–Near TWA 60 along the access road. –Between TWA 61 and 62.
Harding grass *(Phalaris aquatica)*	-	Moderate	–South of TWA 111 near the unnamed watercourse that is hydrologically connected to the Napa River. –Near TWA 123 in field surrounded by vineyards. –Several large infestations just east of Lakeville Substation near TWA 185 and TWA 186.

Note:
Of the non-native plant species tracked by the California Invasive Plant Council and California Department of Food and Agriculture, this table includes only those that have an elevated threat ranking, were dominant on the landscape in a given area to serve as a record of existing infestations, pose a potential threat to adjacent botanical resources, or have the potential to be more widely spread during project-related activities.

2.3.2 PHYTOPHTHORA

Sudden Oak Death

Sudden oak death (SOD) is known to occur in the three counties that the project area crosses: Sonoma, Napa, and Solano counties (California Oak Mortality Task Force 2015). Regulations at state and federal levels require SOD quarantine in these counties, and host or target species for this pathogen are not to be moved outside these counties. Sudden oak death is caused by a fungal pathogen known as *Phytophthora ramorum*, which is produced on host tissue and may be dispersed by various means, including rain splash, wind-driven rain, and movement of infected plant material, movement of contaminated soil, or spread in watercourses (Kliejunas 2010). The fungal pathogen can be spread through the movement of host materials, including plants, plant parts, unprocessed wood and wood products, and other products made from affected hosts. Other undetermined mechanisms also are likely (Kliejunas 2010).

In California, species fatally affected by this pathogen include Pacific madrone (*Arbutus menziesii*), tanoak (*Lithocarpus densiflorus*), coast live oak (*Quercus agrifolia*), canyon live oak (*Quercus chrysolepis*), California black oak (*Quercus kelloggii*), and Shreve's oak (*Quercus parvula* var. *shrevei*). SOD is carried by many other host plants that are not killed by this pathogen, including bigleaf maple (*Acer macrophyllum*), California buckeye (*Aesculus californica*), Pacific madrone (*Arbutus menziesii*), common manzanita (*Arctostaphylos manzanita*), toyon, (*Heteromeles arbutifolia*), California honeysuckle (*Lonicera hispidula*), false Solomon's seal (*Smilacina racemosa*), Douglas fir (*Pseudotsuga menziesii*), California coffeeberry (*Rhamnus californica*), coast redwood (*Sequoia sempervirens*), and California bay (*Umbellularia californica*) (California Oak Mortality Task Force 2015).

Multiple confirmed isolations of *Phytophthora ramorum* are located within 1 mile of the project area (OakMapper 2015), at the following locations:

- Confirmed isolation of *Phytophthora ramorum* in California bay trees, 0.12 and 0.29 mile southeast of Tower Work Area 78, as well as infected toyon 0.47 mile northeast of the tower.
- Three confirmed isolations of *Phytophthora ramorum* in California bay trees, 0.27 mile south of TWA 86 and Tower Work Area 87.
- Multiple confirmed isolations of *Phytophthora ramorum* in California bay trees, 0.28 mile southeast between Tower Work Area 96 and Tower Work Area 97.
- Multiple confirmed isolations of *Phytophthora ramorum* in California bay trees, 0.90 mile north of project area between Tower Work Area 176 and Tower Work Area 180.

Other Species of Phytophthora

Several species of *Phytophthora* are reported to cause foliar diseases on ornamental plants, and movement of the pathogen in the nursery trade has become a major issue and concern. Thirteen species of *Phytophthora* have now been identified in California nurseries (Yakabe et al. 2009). Recent restoration projects have shown that *Phytophthora* can be spread by infected nursery stock into native soil on restoration sites even when clean nursery practices are implemented (Natesan 2015).These findings indicate that phytosanitary measures must be considered to prevent further introduction and spread (Swiecki 2015).

In summary, the exotic species *Phytophthora* is a serious concern in nursery stock used for habitat restoration, for the following reasons (Swiecki and Bernhardt 2014):

- Contaminated nursery stock probably is the most direct and efficient means of introduction;
- Increasingly, a wide variety of *Phytophthora* species are in nurseries;

- Introduced *Phytophthora* species already have been shown to affect a wide range of plant communities in varying climates and soils;
- Both rare and common native plants species are affected;
- *Phytophthora* moves quickly, is spread easily on vehicles and boots, is very persistent in soil, and is not possible to eradicate over large areas.

Considering the dispersal mechanisms, the high rate of infestation of nurseries, and the risks associated with introduction, prevention is the recommended management strategy. To prevent the introduction of exotic species of *Phytophthora* into the project site, container planting is not recommended for revegetation. Direct seeding or planting of pole cuttings is recommended for revegetation efforts.

Section 3. PRECONSTRUCTION ACTIVITIES

3.1. PRECONSTRUCTION DATA COLLECTION

Before the start of construction, select areas that will be disturbed will be visited and notes on species composition, cover[5], and presence of target invasive weeds will be recorded. Work areas located in native grassland, coyote brush scrub, oak woodland, seasonal wetland, and at stream and wetland crossings will be targeted, with a select number of non-native grassland sites visited as well. Data collection will occur in spring and summer, as feasible. This data will be used to further refine restoration activities at each work location.

In addition, reference sites similar to and adjacent to affected work areas will be chosen for the purpose of providing a control site for post-construction mitigation efforts. This is especially important for evaluating performance standards for annual species; population boundaries and abundance may fluctuate because of characters of the seed bank, individual genetics, and annual variations in temperature and rainfall that influence plant germination and phenology. These reference sites will be of similar size, elevation, slope, and aspect, preferably adjacent to impact areas. After restoration activities are completed, the revegetated work areas will be compared to adjacent selected reference sites.

Vegetation characteristics at select disturbance and reference sites will be recorded using a modified version of the California Native Plant Society's Vegetation Rapid Assessment Protocol (CNPS 2007). This protocol is a rapid method to collect information on species cover and can be replicated easily at each impact site and reference site. Descriptions of the type of data to be recorded at reference sites, impact areas, and areas of weed infestations are provided as follows:

- **Photographs** will be taken of impact areas, reference sites, and weed infestations.
- **Species composition** is the constituent species present in a given area. Dominant species within the defined reference site, impact area, and weed infestation area will be recorded.
- **Species origin** identifies whether a species is native to California or elsewhere.
- **Cover estimate** is the cover of one species; absolute percent cover sums to the total plant cover for that stratum, not necessarily 100 percent. Cover classes to be used are: less than 1%, 1 to 5 percent, 5 to 15 percent, 15 to 25 percent, 25 to 50 percent, 50 to 75 percent, and greater than 75 percent.
- **Slope** is the upward or downward degree of slant to a landscape feature.
- **Aspect** is the position of facing a particular direction; given either as degrees on a compass or cardinal directions.
- **GPS location mapping** will capture population extents of special-status species, and weed infestations may be mapped as feasible using appropriate GPS technology that is compatible with a Geographic Information System.

[5] Cover will be measured using California Native Plant Society methodology and cover diagrams as a reference, available online at http://www.cnps.org/cnps/vegetation/pdf/percent_cover_diag-cnps.pdf.

3.2. SEED COLLECTION AND SALVAGE

No seeds or plants for restoration activities will be collected before construction. Local seeds will be collected post-construction from undisturbed areas within the right-of-way for direct seeding of trees and shrubs. Herbaceous seed mixes will be purchased.

No impacts on special-status plant species related to project activities are expected to occur. Therefore, no special-status plant seeds will be collected.

Section 4. REVEGETATION IMPLEMENTATION

4.1. SCHEDULE OF REVEGETATION ACTIVITIES

Table 9 shows the schedule of revegetation activities, including post-construction surveys, seed collection, willow and cottonwood pole collection, seeding and planting, maintenance, and monitoring. Monitoring will occur for up to 3 years for sites that have not met success criteria. Annual grassland restoration sites are anticipated to require fewer than 3 annual monitoring visits, as this habitat type often recovers quickly post-seeding to achieve required performance criteria. Tree plantings will be monitored for 3 years.

Table 9. Schedule of Revegetation Activities

ACTIVITY	IMMEDIATELY POST-CONSTRUCTION	YEAR 1	YEAR 2	YEAR 3
Post-Construction Surveys	X			
Acorn and Other Seed Collection (fall)	X			
Willow and Cottonwood Pole Collection (winter)	X			
Seeding and Planting (fall and winter)	X			
Maintenance		X	X	X
Monitoring and Reporting		X	X	X

4.2. SURVEYS OF SITES POST-CONSTRUCTION

The project restoration biologist will visit disturbed sites following project activities to further refine what revegetation activities need to occur at each site. The project restoration biologist will determine if and what type of revegetation is necessary, including the size of the area needing revegetation, the seed mix recommended for use, the type of scarification (if any), the method of seeding (by hand or hydroseeding), tree or shrub plantings and species (if any), and numbers of plantings. Determination will be based on agency permit requirements, comparison to preconstruction conditions, the type of vegetation disturbed, the intensity of the disturbance, and input from landowners, as applicable.

In areas that have been mowed or driven on but where no soil disturbance has occurred or at least 50 percent of the original cover remains, the area will be allowed to revegetate naturally. In addition, very small areas (less than 25 square feet or at the discretion of the project restoration biologist) of bare ground may be left to revegetate on their own if they are surrounded by vegetated ground and no target invasive weed species are present.

Existing access roads will not be revegetated because they will continue to be used for operations and maintenance.

4.3. REVEGETATION ACTIVITIES BY VEGETATION TYPE

Table 10 summarizes each vegetation type that will be impacted due to project activities, and the revegetation that will occur for that vegetation type. Sites will be targeted for revegetation throughout the period of October 15 to March 1 within the same year construction is completed. Ideally, seeding and planting should occur only in fall through late winter so that sufficient rainfall is received to trigger germination.

Table 10. Revegetation Activities by Vegetation Type

VEGETATION TYPE	SUBTYPE	REVEGETATION	HERBACEOUS SEED MIX
Ruderal	-	Herbaceous Seeding	Pasture Mix
Non-Native Grassland	-	Herbaceous Seeding	Pasture Mix or Native Grassland Mix (site specific)
Native Grassland	California Oatgrass	Herbaceous Seeding	California Oatgrass Mix
	Purple Needlegrass		Native Grassland Mix
	Wildflower Fields		Wildflower Field Mix
Coyote Brush Scrub	-	Herbaceous Seeding	Coyote Brush Mix
Oak Woodland	Coast Live Oak Woodland	Herbaceous Seeding Direct Seeding as necessary[1] (Acorn and other species)	Oak Woodland Mix
	Coast Live Oak/ Manzanita Woodland	Herbaceous Seeding Direct Seeding as necessary[1] (Acorn and other species)	Oak Woodland Mix
	Blue Oak Woodland	Herbaceous Seeding Direct Seeding as necessary[1] (Acorn and other species)	Oak Woodland Mix
	Valley Oak Woodland	Herbaceous Seeding Direct Seeding as necessary[1] (Acorn and other species)	Oak Woodland Mix
	Interior Live Oak Woodland	Herbaceous Seeding Direct Seeding as necessary[1] (Acorn and other species)	Oak Woodland Mix
	California Bay Forest	Herbaceous Seeding Direct Seeding as necessary[1] (Acorn and other species)	Oak Woodland Mix
Seasonal Wetland	-	Herbaceous Seeding	Seasonal Wetland Mix
Urban Mix	-	None	None
Developed	-	None	None
Dryland Farmed	-	Herbaceous Seeding (if desired by landowner)	Pasture Mix
Orchard	-	Herbaceous Seeding (if desired by landowner)	Pasture Mix
Vineyard	-	Herbaceous Seeding (if desired by landowner)	Pasture Mix

[1] Direct seeding of acorn and shrubs will occur where necessary to meet replacement ratio requirements for the removal of trees and shrubs.

4.4. SITE PREPARATION

The following discussion describes construction methods that will be implemented as feasible to successfully prepare the work area for revegetation activities.

- Vegetation clearing (e.g., mowing, blading, grubbing) in natural vegetation will be limited to the minimum necessary to safely complete construction to preserve existing plants, seeds, and microorganisms.
- Tree and shrub removal will be minimized as much as possible. Shrubs and trees that must be removed for safe construction will be cut at ground level. Mulch from woody vegetation may be chipped and stored on-site (in disturbed non-native habitat or in oak woodland).
- Stockpiling of material will be allowed only in uplands within established work areas.
- Topsoil material will be salvaged as stated in APM BIO-4 in the IS/MND other vegetation types accordance with site specific conditions and at the discretion of the project biologist.
- After completion of construction, areas that are disturbed will be restored to preconstruction conditions. During recontouring activities, soils will be compacted to the minimal amount required to conform to construction and geotechnical standards, where appropriate. Storm Water Pollution Prevention Plan best management practices will be implemented to reduce erosion during construction and after construction is completed
- Compacted material may be lightly scarified to facilitate restoration if determined to be necessary by the project restoration biologist. The goal of soil scarification is to prepare the area for seeding. Scarification loosens the soil, improves seed-to-soil contact, increases microtopography, and prevents seeds from washing away from the desired seeding location. Grading and compaction of surface soil caused by construction does not provide the ideal conditions for most native species (non-disturbance adapted species), and soil scarification ameliorates these conditions. The degree of scarification required at each site will be determined by the project restoration biologist during post construction site visits.
- Appropriate weed-free erosion control materials will be used as identified in the Storm Water Pollution Prevention Plan for the projects.

4.5. SEEDING AND PLANTING

4.5.1 SEEDING SEED MIXES

Timing

Sites will be revegetated as soon as feasible after construction completion. Seeding ideally will occur in the late fall and early winter, before the onset of or during winter rains. This will allow seeded species to germinate and grow in the winter months during the rainy season and will avoid the need for irrigation, in most cases. However, if drought conditions are anticipated, it is possible that limited rainy season watering may be necessary. If seeding occurs in late winter or early spring, irrigation may be necessary. The need for irrigation will be determined by the project restoration biologist and will be based on the timing of seeding and the amount of precipitation received after seeding. Annual drought conditions will be considered in terms of optimizing water usage to achieve results under statewide drought restrictions.

Seed Mixes

Seed mixes for each vegetation type are listed in Tables 11 to 17. Seed mixes will be approved by the project restoration biologist before purchase and application, with input from landowners, as applicable. Where possible, local sources will be used, including from within the appropriate county. Proposed seed mixes are subject to change, based on site conditions, landowner input, and seed availability, but will be similar or identical to mixes presented in Tables 11 to 17.

Table 11. Pasture Mix

SPECIES	HAND BROADCAST SEEDING RATE (PURE LIVE SEED POUND/ACRE)	HYDROSEED SEEDING RATE (PURE LIVE SEED POUND/ACRE)
soft chess *Bromus hordeaceus*	12	16
Italian ryegrass *Festuca perennis*	12	16
rose clover *Trifolium hirtum*	6	8
Total	**30**	**40**

Table 12. Native Grassland Seed Mix

SPECIES	HAND BROADCAST SEEDING RATE (PURE LIVE SEED POUND/ACRE)	HYDROSEED SEEDING RATE (PURE LIVE SEED POUND/ACRE)
purple needlegrass *Stipa pulchra*	5	7
blue wildrye *Elymus glaucus* subsp. *glaucus*	5	7
three weeks Fescue *Festuca microstachys*	5	7
California brome *Bromus carinatus* var. *carinatus*	5	7
fiddleneck *Amsinckia intermedia*	2	3
yarrow *Achillea millefolium*	0.5	1
sky lupine *Lupinus nanus*	0.75	1
tomcat clover *Trifolium willdenovii*	0.75	1
Total	**24**	**34**

Table 13. California Oatgrass Seed Mix

SPECIES	HAND BROADCAST SEEDING RATE (PURE LIVE SEED POUND/ACRE)	HYDROSEED SEEDING RATE (PURE LIVE SEED POUND/ACRE)
California oatgrass *Danthonia californica*	20	25
Total	**20**	**25**

Table 14. Wildflower Field Seed Mix

SPECIES	HAND BROADCAST SEEDING RATE (PURE LIVE SEED POUND/ACRE)	HYDROSEED SEEDING RATE (PURE LIVE SEED POUND/ACRE)
tidy tips *Layia chrysanthemoides*	3	4
dove lupine *Lupinus bicolor*	3	4
California goldfields *Lasthenia californica*	1	1.5
common stickyseed *Blennosperma nanum* var. *nanum*	1	1.5
California poppy *Eschscholzia californica*	3	4
Total	**11**	**15**

Table 15. Coyote Brush Seed Mix

SPECIES	HAND BROADCAST SEEDING RATE (PURE LIVE SEED POUND/ACRE)	HYDROSEED SEEDING RATE (PURE LIVE SEED POUND/ACRE)
coyote brush *Baccharis pilularis*	0.5	0.5
blue wildrye *Elymus glaucus* subsp. *glaucus*	6	8
creeping wildrye *Elymus triticoides* subsp. *triticoides*	6	8
Total	**12.5**	**16.5**

Table 16. Oak Woodland Seed Mix

SPECIES	HAND BROADCAST SEEDING RATE (PURE LIVE SEED POUND/ACRE)	HYDROSEED SEEDING RATE (PURE LIVE SEED POUND/ACRE)
California brome *Bromus carinatus var. carinatus*	7	9
blue wildrye *Elymus glaucus* subsp. *glaucus*	6	8
one-sided bluegrass *Poa secunda* subsp. *secunda*	4	5
California fescue *Festuca californica*	4	5
yarrow *Achillea millefolium*	1	2
Total	**22**	**29**

Table 17. Seasonal Wetland Mix

SPECIES	HAND BROADCAST SEEDING RATE (PURE LIVE SEED POUND/ACRE)	HYDROSEED SEEDING RATE (PURE LIVE SEED POUND/ACRE)
Baltic rush (*Juncus balticus*)	1	2
toad rush (*Juncus bufonius var. bufonius)*	1	2
variegated clover (*Trifolium variegatum* var. *variegatum*	6	9
meadow barley (*Hordeum brachyantherum*)	6	9
Total	**14**	**22**

Seed Application

Broadcast Seeding

Small sites (less than 0.1 acre) can be seeded by hand. This is often the optimal way to address small areas, since it is often possible to restore multiple sites within a single day and access requirements for hydroseeding equipment are avoided. In addition, less water is used for seed application compared to hydroseeding. Hand broadcast seeding will be accomplished using a small, hand-held mechanical broadcaster.

A layer of protective mulch will be added to hand broadcast seeded areas, at a rate of approximately 500 to 1,000 pounds per acre to conserve moisture, reduce soil erosion, and increase germination. Either weed-free rice straw or Strawnet pellet mulch will be used. Strawnet pellet mulch is made from compressed straw fibers that are formed into pellets. Strawnet pellet mulch needs to be applied just before it rains or watered at the time of application. When hydrated, the pellets swell and rupture, forming a thin ground cover.

Hydroseeding

The hydroseeding method uses the hydraulic application of a slurry of seeds, fertilizer, and mulch. Hydroseeding will be done according to the specifications below or as adjusted by the project restoration biologist. A 3-step application method will increase the likelihood that the seeds are in contact with the soil and are lightly overlain with mulch which increases seeding success. Hydroseeding materials will be applied in separate applications in the approximate sequence as follows:

1. Seed Application - Apply the hydroseeding mixture with hydroseeding equipment at the rates indicated within 60 minutes after the seed has been added to the mixture:

MATERIAL	POUNDS PER ACRE
Seed	as specified in seed mix
Wood Fiber or equivalent	500
Commercial fertilizer (Biosol fertilizer 7-2-3 or equivalent) *	300

2. Straw Application - Apply straw at the rate of 2.0 tons per acre. Incorporation of straw will not be required. Distribute straw evenly without clumping or piling.

3. Fiber and Tackifier Application - Apply the following mixture with hydroseeding equipment at the corresponding rates:

MATERIAL	POUNDS PER ACRE
Wood Fiber or equivalent	500
Tackifier	125

The ratio of total water to total tackifier in the mixture will be as recommended by the manufacturer. Hydroseed materials must be applied so they are in contact with the ground surface.

4.5.2 DIRECT SEEDING WOODY SPECIES

Woody species will be direct seeded where necessary to meet replacement ratios for the removal of trees and shrubs. Direct seeding does not carry the risk of introducing exotic *Phytophthora* pathogens into native plant communities. Direct seeding has been shown to be more cost effective than container stock planting for woody species in California (Palmerlee and Young 2010). In favorable sites or with more intensive care, many species will grow as well from seed as will nursery-grown transplants (Chan et al. 1977). Therefore, the primary approach proposed for woody plantings for this project is to direct seed locally-collected seed for the dominant species in impacted habitats.

Direct Seeding Plant Palettes

Trees and shrubs will be direct seeded primarily in the following vegetation communities: coast live oak woodland, coast live oak/manzanita, blue oak woodland, valley oak woodland, interior live oak woodland, and California bay forest (Table 18), as required to meet replacement ratio requirements. In locations where target replacement ratios do not need to be met, only broadcast or hydroseeding techniques will be applied. Final species selection will be based of the vegetation to be impacted prior to project disturbance.

Table 18. Direct Seeding Plant Palette

DIRECT SEEDED SPECIES[1]	NO. OF SEEDS PER PLANTING SITE
coast live oak (*Quercus agrifolia*)	3
blue oak (*Quercus douglasii*)	3
valley oak (*Quercus lobata*)	3
interior live oak (*Quercus wislizenii*)	3
buckeye (*Aesculus californica)*	2
elderberry (*Sambucus nigra* subsp. *caerulea*)	6
coyote brush (*Baccharis pilularis*)	20
California sagebrush (*Artemisia californica*)	20
mountain mahogany (*Cercocarpus betuloides* var. *betuloides)*	6

Tree and Shrub Seed Collection

Seeds will be collected from different tree and shrub individuals to ensure diversity. Seeds will be collected from healthy, vigorous, well formed, mature trees, and isolated trees will be avoided (NRCS 2009). Seed collection will be well documented, clearly indicating the following information: collectors' names, species, date and location of collection, and the date storage began and ended.

Acorns

Acorns will be collected in early fall, several weeks after the first acorns have started to drop, and after the acorns on the tree can be dislodged easily from the acorn cap by gentle twisting (McCreary 2009). Immature acorns cannot be ripened artificially after removal from the tree; therefore, acorns will not be collected until they are ripe. Acorns will be collected directly from tree branches by handpicking or knocking the acorns onto a tarp on the ground, using long poles, if feasible. It will be best to collect acorns from the branches rather than from the ground because acorns are sensitive to moisture loss, and can dry rapidly on the ground (McCreary 2009). If acorns are collected from the ground, they will be placed in a bucket of water for several hours, and floaters will be discarded.

Acorn caps will be removed before storage. Interior live oak and coast live oak acorns will be stratified by soaking them in water for 24 hours and then storing them in a cooler or refrigerator (33.8 to 37.4 degrees Fahrenheit [1 to 3 degrees Celsius]) for 30 to 90 days before sowing (McCreary 2009). Blue oak and valley oak acorns will not require stratification. All acorns will be stored in a cooler or refrigerator in loosely sealed (partially open) plastic bags, but blue oak or valley oak acorns will not be stored for more than 1 or 2 months before planting, to provide the greatest viability (McCreary 2009). If acorns start to germinate during storage, they will be removed and planted as soon as possible. If mold develops during storage and the acorns are discolored and slimy, the acorns will be discarded (McCreary 2009).

Other Seeds

Other seed may be collected prior to construction and stored for planting post construction.

California buckeye (*Aesculus californica*) fruits may be collected by picking or shaking them from the trees as soon as the capsules turn yellowish and begin to split open, or by gathering them from the

ground soon after they have fallen (Rudolf 1974).The seeds should be sown at once or stratified for spring sowing. Initial viability of fresh seeds can be maintained for 6 months when they are stored in plastic bags in the refrigerator.

California bay (*Umbellularia californica*) seeds can be collected from October to December. The seeds are mature when they are dark brown and the fruits are dark purple. Lightly cracking the seeds before planting can increase germination as can 90-120 days of cold stratification for best germination.

California sagebrush (*Artemisia californica*) seeds can be harvested by clipping seed stalks and bagging material in paper bags for air drying. Seeds are ripe when seed can be removed from heads by shaking and seed is very hard (Elkhorn Slough 2001).

Coyote brush (*Baccharis pilularis)* is easily grown from seed, especially if these seeds are propagated the same day they are collected. The ripe fruits can be collected by hand or by brushing them into containers or ground cloths. If not planting the same day as collecting, the achenes should be spread out to dry in a warm, well-ventilated room, or in the sun, protected from the wind (Olson 1974). When dried, they may be rubbed through a fine screen to remove the pappus for ease in handling. Cleaned seeds of Baccharis can be stored at 2 to 5º C in sealed containers (Young and Young 1992).

Elderberries (*Sambucus nigra* subsp. *caerulea*) are collected by stripping or cutting the clusters from branches. Collections should be made as soon as the fruits ripen to avoid losses to birds. If the seeds are not extracted at once, care must be taken to avoid heating. The fruits can be run through a macerator and the seeds recovered by flotation. Seeds may be stored in closed containers at low temperatures for several years (Young and Young 1992). Elderberry seeds are difficult to germinate because of their dormant embryos and hard seedcoats. Pretreatment usually consists of 90 days of warm stratification followed by 90 days of prechilling. An alternative is to soak seeds 10 to 15 minutes in acid followed by 2 months of prechilling. Elderberry seeds can be sown in the fall soon after collection or prechilled and sown in the spring. In either case, germination is not complete until the spring of the second year after sowing.

Tree and Shrub Direct Seeding Methodology

Seeding will be planned for the fall, ideally after a sufficient rainfall has occurred to soak the soil as least several inches down, using locally collected seeds obtained during the previous spring, summer, and fall. Planting of seeds should take place no later than the end of January. The literature indicates that fresh seed of most species in the planting palette will not require treatment to overcome seed dormancy (Emery 1988).

Before installing seeds, grasses and other low vegetation will be scraped in an approximate 3-foot-diameter area. If seeding is on a slope, a level planting site should be established. Depending on the size of the seed, 3 (largest, such acorns) to 20 seeds (smallest, such as coyote bush) will be planted. Small seeds will be lightly be covered with soil, and large seeds like acorns will be placed 0.5 to 1.0 inches deep.

Trees and shrubs that are direct-seeded will be protected from herbivory using either a Tubex or a cage system. An 8-24 inch-diameter tube constructed of half-inch wire mesh will be sunk 4 inches into the ground around the seeds and will extend above the ground at least 12-inches. Two wooden posts or T-posts will be wired to the cage for stabilization. The Tubex or cage system will be removed once the tree or shrub is fully established. Other herbivory protection methods may be used as recommended by the project restoration biologist.

Rice straw will be installed as mulch around each planting to control weeds in the immediate vicinity of the planting. After the seeds and protective hardware are installed, at least 1 gallon of water will be applied slowly to the seeding site, so that all water percolates and no runoff occurs.

When all direct seeding has been installed, planting sites will be marked on a map and an "as-built" summary will be prepared for use during subsequent site monitoring.

4.5.3 WILLOW AND COTTONWOOD POLE CUTTINGS

Riparian vegetation may be impacted at stream crossings along access routes. Most of the stream crossings were mapped as oak woodland vegetation; however, willows or cottonwoods are present at some of these locations. Based on preconstruction surveys, if willows or cottonwoods are appropriate for revegetation at any of these locations, they will be planted using pole cuttings, which are a non-rooted vegetative propagule.

Pole Cutting Plant Palettes

Table 19 includes willow and cottonwood species that can be propagated using pole cuttings, and are known to occur on the project site. The species, number of plantings, and locations will be determined during preconstruction and post-construction site visits, before revegetation implementation.

Table 19. Willow Pole Cutting Plant Palette

SPECIES
Arroyo willow *Salix lasiolepis*
Fremont cottonwood *Populus fremontii* subsp. *fremontii*
Gooding's black willow *Salix gooddingii*
Pacific willow *Salix lasiandra* var. *lasiandra*
Red willow *Salix laevigata*
Sandbar willow *Salix exigua*

Pole Collection

Willow and cottonwood pole cuttings will be collected after the leaves have fallen from donor plants (usually December) and before they break bud and begin to grow in early spring (usually February). To minimize storage time, cuttings will be harvested no more than 2 weeks before planting. Willow pole cuttings at the largest end will be 0.5 inch minimum and 3 inches maximum. Cottonwood pole lengths will be 36 inches minimum and 72 inches maximum. Harvested cuttings will be live, healthy wood at least 2 years old or older. The best cuttings are 2 to 7 years old wood, with smooth bark that is not split or deeply furrowed with no sign of damage.

Lopping shears, pruning shears, or a small wood saw can be used to harvest cuttings. All equipment should be sharp and all cuts should be clean. No more than 25 percent of any individual plant should be removed and branches that will not impair the source willow's health and appearance should be selected. All side branches of the cutting should be trimmed off so the cutting will be a single stem. When collecting, care will be taken to stack cuttings with the upper tips all oriented in the same

direction, so that during planting, cuttings will be planted right side up. Willows should be covered during transport with wet burlap sacks if feasible.

Pole Storage and Soaking

Ideally, the pole cuttings will be soaked in water for 10 to 14 days after collection. Soaking the cuttings before planting can increase root and shoot production by improving stem water content and early root and shoot initiation. Soaking also substantially increases the survival rate of cuttings. The entire cutting should be submerged in water. Soaking can be accomplished in a wading pool, trough, garbage can, tank stream, pond, or any other body of water that is deep enough. Cuttings that have been soaked off-site and delivered to the site but are not used within one day will be wrapped in wet burlap sacks and will be stored in a cool location until the next planting day.

Pole Planting

Backhoes, excavators, tractor-mounted posthole diggers, soil augers, planting bars, or shovels can be used to plant cuttings. The equipment used will depend on the rockiness of the soil, depth to groundwater, access constraints, and the availability of hand labor or equipment. When hand planting, a hole can be created with a shovel or by pounding in a wooden post or metal post with a posthole pounder, then the cutting will be placed in the hole. Cuttings should not be pounded into the soil directly because this damages the cutting.

For small diameter pole cuttings, multiple pole cuttings should be planted in one hole. If the pole diameter is less than 1.5 inches, two cuttings will be planted in one hole. Pole cuttings should be installed at least 6 inches below groundwater. Cuttings must be oriented up. Two-thirds or three-quarters of the length of the cutting will be belowground. Only 1 to 2 feet of the cutting should extend aboveground. The cutting must have good soil contact because air pockets around the cutting will kill the roots. The soil will be tamped firmly around each planting to remove air pockets, and the cutting should be watered to allow backfill to settle and ensure good contact with the pole cutting.

4.5.4 CONTAINER PLANTING

Container planting is not recommended due to the risk of introducing *Phytophthora* species into natural communities in the project area as discussed in Section 2.3.2, Phytophthora. If container planting is required by the permitting agencies, or a clean source of containers is verified, then containers will be planted using the following methods.

Plant Palettes

Depending on the location along the alignment that requires container planting, species will be chosen by the project restoration biologist from the plant palette. Selections will be based on species present before project disturbance and the ecoregion. It is not recommended that manzanita species be planted from containers as they are known to be susceptible to *Phytophthora* (Swieki 2015). Tree and shrub species known from the project site that could be good candidates for container planting depending on the habitat impacted are in Table 20.

Table 20. Container Plantings Plant Palette

SPECIES	COMMON NAME
Aesculus californica	buckeye
Artemisia californica	California sagebrush
Artemisia douglasiana	mugwort
Baccharis pilularis	coyote brush

SPECIES	COMMON NAME
Calycanthus occidentalis	spice bush
Ceanothus oliganthus var. *sorediatus*	jim-brush
Cercocarpus betuloides var. *betuloides*	mountain mahogany
Corylus cornuta subsp. *californica*	California hazelnut
Eriophyllum confertiflorum var. *confertiflorum*	golden-yarrow
Eriophyllum lanatum var. *achilleoides*	woolly sunflower
Frangula californica subsp. *californica*	coffeeberry
Fraxinus dipetala	foothill ash
Fraxinus latifolia	Oregon ash
Garrya fremontii	Fremont's silktassel
Heteromeles arbutifolia	toyon
Holodiscus discolor var. *discolor*	ocean spray
Lonicera hispidula	California honeysuckle
Prunus ilicifolia subsp. *ilicifolia*	holly-leafed cherry
Quercus agrifolia var. *agrifolia*	coast live oak
Quercus chrysolepis	canyon live oak
Quercus douglasii	blue oak
Quercus kelloggii	black oak
Quercus lobata	valley oak
Quercus wislizeni var. *wislizeni*	interior live oak
Rhamnus crocea	redberry
Rhamnus ilicifolia	hollyleaf redberry
Ribes californicum var. *californicum*	California gooseberry
Rosa californica	California wild rose
Rosa gymnocarpa	wood rose
Salvia spathacea	California hummingbird sage
Sambucus nigra subsp. *caerulea*	elderberry
Stachys ajugoides	bugle hedgenettle
Symphoricarpos albus var. *laevigatus*	snowberry
Symphoricarpos mollis	creeping snowberry
Note: Container plantings are not recommended because of the risk of introducing *Phytophthora* in a wildland setting.	

Planting Methodology

Container plant installation in most cases will occur after the rainy season has begun and enough rain has fallen to moisten the soils in the planting zones. Before planting, containers, grasses, and other low vegetation will be scraped in an approximately 3-foot-diameter area. Container planting holes will be excavated to twice the width and 1.5 times the depth of the container. After the holes have been excavated, the inside surfaces of the holes will be scarified to enable root penetration.

Container plantings will be protected from herbivory using the cage system as detailed in Section 4.5.2 Direct Seeding Woody Species. The cage system will be removed once the tree or shrub is fully

established. Rice straw will be installed as mulch around each planting to control weeds in the immediate vicinity of the planting. After the container plantings and protective hardware are installed, at least 1 gallon of water will be applied slowly to the planting site, so that all water percolates and no runoff occurs.

When all plants have been installed, planting sites will be marked on a map and an "as-built" summary will be prepared for use during subsequent site monitoring.

4.6. MAINTENANCE

4.6.1 PLANT REPLACEMENT AND SUPPLEMENTAL SEEDING

Dead or damaged plants will be replaced during the first year as necessary to meet success criteria. Supplemental seeding will occur as needed to meet success criteria. The project restoration biologist will determine when replanting and reseeding is necessary and what species should be used.

4.6.2 NON-NATIVE INVASIVE SPECIES REMOVAL

Removal of non-native invasive species will be conducted in the spring, fall, or summer in direct seeded areas, as feasible. Removal methods will use hand pulling and mechanical mowing.

4.6.3 IRRIGATION

After planting of seeds or containers, at least 1 gallon of water will be applied slowly to the planting location, so that all water percolates and no runoff occurs.

Irrigation will be carried out in areas with direct seeding and planting installations. For this project it is anticipated that DriWater will be the primary irrigation method. If DriWater is employed, the product is expected to be replaced approximately every 60 days during the dry season.

If feasible, direct seeding locations will be hand watered monthly during the first winter if periods of a month or more without significant rain occur (defined as at least 0.25 inch of precipitation). If feasible, from April through October following installation, watering shall occur every 14 days, depending on weather conditions. Approximately 1 to 2 gallons of water will be applied during each irrigation. Watering during the second winter will occur only if a month or more passes without significant rain.

4.6.4 DROUGHT MEASURES

PG&E will implement the following measures to address the drought issue.

- Restoration activities will generally be timed to occur in the fall (September/October) with hydroseeding and hand seeding to occur in fall so that seasonal rains can promote seed growth.
- For any areas with container plantings or direct seeding, dry water packets can be utilized to provide water under drought conditions. The advantage of dry water applications is that they are targeted to a specific area and release slowly over time to deliver water efficiently to plantings.
- For seeded areas, if rain does not occur consistently during anticipated timeframes, PG&E may determine that additional applications of water may be needed to support vegetation growth in seeded areas.
- Broadcast (hand) seeding will be implemented where feasible. Broadcast seeding does not require water for application like hydroseeding which will reduce water usage during restoration activities.

- PG&E is looking into the feasibility and use of reclaimed water to support hydroseeding.

Section 5. SUCCESS CRITERIA, MONITORING AND REPORTING

5.1. SUCCESS CRITERIA

Success criteria will be used to measure the extent of revegetation after construction completion. Recovery success criteria will be as follows: (1) visual comparisons between revegetated areas and adjacent non-disturbed area (reference site) will be similar and total cover of disturbed areas will be at least 80 percent of total cover of adjacent reference sites; (2) dominant species composition and cover values[6] within the seeded areas will be comparable to adjacent references sites, and native cover of disturbed areas will be at least 75 percent of total cover of adjacent reference sites; (3) planted trees and shrubs will meet the replacement ratios, with a suitable number of trees and shrubs in good or fair condition; (4) the restored areas will not support any new invasive weed species[7] not previously recorded or a higher abundance of existing weed species compared to preconstruction conditions; (5) restored areas will be stable (i.e., no significant indicators[8] will be noted during the monitoring period). The success criteria will be consistent with permits for the project (CDFW 2014).

Table 21. Success Criteria for the Project

PERFORMANCE INDICATOR	TARGET VALUE
Total Cover	80 percent of original cover or of cover of adjacent reference sites.
Native Cover	75 percent of native cover of adjacent reference sites.
Number of Replacement Trees and Shrubs	A sufficient number of replacement trees alive to meet the replacement criteria. In areas subject to the jurisdiction of the SAA, planting ratios will 3:1 for native trees removed, 2:1 for non-native trees removed, and 1:1 ratio for smaller shrubs and understory vegetation. In upland areas of the project, planting ratios will be 3:1 for native trees removed and 1:1 for non-native trees removed.
Cover of Invasive Weeds	Total cover of target invasive weeds will be less than or equal to adjacent reference sites or baseline data.
Restored Areas are Stable	No significant indicators noted.

Note: Significant indicators include erosion, unvegetated areas, and invasive weed infestations, among other issues.

[6] Cover will be measured using California Native Plant Society Rapid Assessment protocol (CNPS 2007) and cover diagrams that are available online at http://www.cnps.org/cnps/vegetation/pdf/percent_cover_diag-cnps.pdf.
[7] Invasive weed species include species with a California Invasive Plant Council ranking of High (Cal-IPC 2014) or a California Department of Food and Agriculture ranking of A or B (CDFA 2014).
[8] Significant indicators include erosion, unvegetated areas, and invasive weed infestations, among other issues.

5.2. MONITORING

Monitoring will be sufficient to demonstrate that the restoration goals are achieved, and that the success criteria has been met. Monitoring will occur for until success criteria are met. Annual grassland restoration sites are anticipated to require fewer than 3 annual monitoring visits, as this habitat type often recovers quickly post-seeding to achieve required performance criteria. Tree and shrub plantings will be monitored for at least 3 years, until success criteria are met.

5.2.1 AS BUILT PLAN

Following revegetation, a summary will be prepared to document the completion of revegetation activities. This summary will include an accounting of the total numbers of trees impacted replaced (by species), each kind of revegetation action completed, a map showing the location of revegetation, approximate acreages of each habitat type that has been revegetated, the species, application method and quantity of native plant seed broadcast, and photographs documenting the restoration. Any changes to the revegetation plan from anticipated revegetation methods will be noted and discussed. Actions to be undertaken in the following year, including any additional seed collection or procurement may also be included.

5.2.2 PHOTOMONITORING

Permanent photo-documentation points will be established in the project area. A minimum of one photo point per modified habitat will be established, and photo points will be established anywhere that trees are removed. Additional photo points may be taken in representative areas. At each photo point, the location will be recorded with GPS coordinates. Once per year, photographs will be taken from each photo point, using a digital camera.

5.2.3 VEGETATIVE COVER

Data on species composition and cover will be recorded at select disturbance areas and reference sites. Vegetation characteristics will be recorded using the Vegetation Rapid Assessment Protocol (CNPS 2007). This protocol is a rapid method to collect information on species cover and can be replicated easily at each impact site and reference site. Data will be collected over the entire impact area. Data collected during monitoring will be the same as data collected during preconstruction field visits, as discussed in Section 3.1, Preconstruction Data Collection, for comparison purposes. Sampling is expected to be carried out annually in April or May, to verify that annual vegetation is identifiable and has achieved its maximum growth.

5.2.4 PERCENT SURVIVORSHIP AND HEALTH AND VIGOR (TREES)

Plant survival will be measured for all of the direct seeded trees, to determine that the replacement ratio has been attained. Health and vigor ratings will also be recorded to track the health of the plantings but is not tied to project success. Once per year in the summer or early fall, all direct seeded tree plantings will be counted, height measured, and a condition rating assigned. The general condition of each plant will be recorded using the following criteria:

- Excellent: No evidence of stress; minor pest or pathogen damage may be present; no chlorotic leaves; no or very minor herbivory
- Good: Some evidence of stress; pest or pathogen may be present; few chlorotic leaves (greater than 5 percent); minor evidence of herbivory
- Fair: Moderate level of stress; high levels of pest or pathogen damage; some chlorotic leaves (greater than 10 percent); some herbivory damage such as nipped leaves, wear marks

- Poor: High level of stress; high levels of pest or pathogen damage; many chlorotic leaves (greater than 30 percent), severe herbivory damage

5.3. REMEDIAL MEASURES

All monitoring visits will include an evaluation of the need for remedial measures if necessary. Remedial efforts may include reseeding, weeding, erosion control, or irrigation. Remedial measures will be implemented for areas that have not achieved acceptable survivorship or vegetative cover (compared to reference sites). For example, if health and vigor data scores are very low, additional direct seeding of tree species may need to occur to attain the native tree replacement requirement.

5.4. MONITORING REPORTING

At the end of each monitoring year, an annual report will be prepared that includes methods used, results of monitoring, photomonitoring photographs, representative photographs, a summary of reference and restoration site data, an assessment of progress toward meeting success criteria, recommendations, and implemented actions. PG&E will be held responsible until the restoration has been successfully completed as documented in the monitoring reports.

Revegetation sites that meet success criteria following the initial revegetation activities will not be included in the following year's monitoring report. The second year's monitoring report will address any site that was not restored in the first year and a description of any remedial measures that were considered necessary with documentation of remedial actions. The third year's monitoring report will address any site that was not restored in the second year and a description of any remedial measures that were considered necessary with documentation of remedial actions. Further monitoring reports will be submitted as needed. Annual monitoring reports will be available by January 31 of each year.

Section 6. REFERENCES

Abrams, L. 1955. *Illustrated Flora of the Pacific States: Washington, Oregon, and California*. Four volumes.

AECOM and PG&E. 2014 (July). *Pacific Gas and Electric Company's Vaca Dixon-Lakeville 230 Kilovolt Transmission Line Reconductoring Project Initial Study/Proposed Mitigated Negative Declaration*. Administrative final.

AECOM and California Environmental Services, LLC. 2013 (September). *Jurisdictional Wetland Delineation Report Vaca Dixon-Lakeville 230 kV Reconductoring Project*.

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, editors. 2012. *The Jepson Manual: Vascular Plants of California*. Second edition. University of California Press, Berkeley.

Best, C., J. T. Howell, W. Knight, I. Knight, and M. Wells. 1996. *A Flora of Sonoma County*. *Manual of the Flowering Plants and Ferns of Sonoma County*. First edition. California Native Plant Society.

California Department of Fish and Wildlife (CDFW). 2013a. *State and Federally Listed Endangered, Threatened and Rare Plants of California.* California Natural Diversity Database. Biogeographic Data Branch.

———. 2013b (January). *Special Vascular Plants, Bryophytes and Lichens List.* California Natural Diversity Database. Wildlife and Habitat Data Analysis Branch.

California Department of Food and Agriculture (CDFA). 2015. *Pest Ratings of Noxious Weed Species and Noxious Weed Seed*. Available: http://www.cdfa.ca.gov/phpps/ipc/weedinfo/winfo_list-pestrating.htm.

California Invasive Plant Council (Cal-IPC). 2015. *California Invasive Plant Inventory*. Cal-IPC Publication. California Invasive Plant Council: Berkeley, CA.

California Native Plant Society (CNPS). 2007. CNPS *Rapid Assessment Protocol*. CNPS Vegetation Committee. Sacramento, CA.

———. 2015. *Inventory of Rare and Endangered Plants*. Online edition, v-8. California Native Plant Society. Sacramento, CA. Available: http://www.cnps.org/inventory.

California Oak Mortality Task Force. 2015. Sudden Oak Death. Available: www.suddenoakdeath.org. Accessed January 2015.

Chan, F. J., R. Harris, and A.T. Leiser. 1977. *Direct Seeding Woody Plants in the Landscape*. University of California Agricultural Extension Leaflet 2577.

Consortium of California Herbaria (CCH). 2015. *Species Management System for California Herbaria.* Compiled by T. J. Rosatti, E. C. Neese, A. N. Kikuchi, C. S. Terry, L. M. Lewis, J. G. Turner, and M. A. Young. Available: http://www.mip.berkeley.edu/www_apps/smasch/.

DiTomaso, J. M., and E. A. Healy. 2007. *Weeds of California and Other Western States*. University of California Agriculture and Natural Resources Publication 3488.

Elkhorn Slough. 2001. *Native Species Planting Guide for the Elkhorn Slough National Estuarine Research Reserve.* February.

Emery, D. E. 1988. *Seed Propagation of Native California Plants*. Santa Barbara Botanic Garden, Santa Barbara, CA.

Everett. P. C. 2012 (February 29). A *Second Summary of the Horticulture and Propagation of California Native Plants at the Rancho Santa Ana Botanic Garden, 1950–1970*. Edited by Bart C. O'Brien. Published by Rancho Santa Ana Botanic Garden, Claremont, CA.

Fox, L., H. Steele, K. Holl, and M. Fusari. 2006. Contrasting Demographies and Persistence of Rare Annual Plants in Highly Variable Environments. *Plant Ecology* 183:157–170.

Hillman, J. 2015 (January). *Dam the Luck! How the Anderson Dam Seismic Retrofit has Led to New Insights into the Ecology, Evolution, and Conservation of the Coyote Ceanothus (*Ceanothus ferrisiae*) (Rhamnaceae)*. Pathogens and Pests, CNPS Conservation Conference 2015, San Jose, CA.

Holland, R. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. California Department of Fish and Game, the Resources Agency.

Jepson Flora Project. 2015. *Jepson e-Flora*. Version 1.0. Available: http://ucjeps.berkeley.edu/IJM.html. Accessed January 2015.

Kliejunas, J. T. 2010. *Sudden Oak Death and Phytophthora Ramorum: a Summary of the Literature.* General Technical Report PSW-GTR-234. U.S. Forest Service, Pacific Southwest Research Station, Albany, CA.

McCreary, D. 2009. *Regenerating Rangeland Oaks in California*. University of California Agriculture and Natural Resources. Sierra Foothill Research and Extension Center Publication 21601e.

Natesan, E. 2015 (January). *Challenges of Large-Scale Restoration Projects*. Pathogens and Pests. CNPS Conservation Conference 2015, San Jose, CA.

Natural Resources Conservation Service (NRCS). 2009. *Direct Seeding of Trees*. Available: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1167382.pdf.

Nomad Ecology. 2013 (December). *Botanical Resource Survey Report Vaca Dixon-Lakeville 230 kV Reconductoring Project, Sonoma, Napa, and Solano Counties, California*.

OakMapper. 2015. *Monitoring Sudden Oak Death*. University of California, Berkeley. Available: http://oakmapper.org/. Accessed February 2015.

Packard, S., and C. F. Mutel. 1997. *The Tallgrass Restoration Handbook for Prairies, Savannas, and Woodland.* The Society for Ecological Restoration.

Palmerlee, A., and T. Young. 2010. *Direct Seeding is More Cost Effective than Container Stock across Ten Woody Species in California*. Department of Plant Sciences and Ecology Graduate Group, University of California, Davis.

Potter, D. 2015 (January 12). *Tiny Parasite Threatens Native Plants*. KQED Science. Available: http://blogs.kqed.org/science/audio/tiny-parasite-threatens-native-plants/.

Rudolf, P. O. 1974. Aesculus L. Pp. 195-200 in *Seeds of Woody Plants in the United States*. Forest Service, USDA, Washington, DC.

Sawyer, J. O., and T. Keeler-Wolf. 1995. *A Manual of California Vegetation.* California Native Plant Society, Sacramento.

Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. *A Manual of California Vegetation.* Second edition. California Native Plant Society, Sacramento.

Swiecki, T. 2015 (January). *Limiting the Destruction of Ione Manzanita Habitat Caused by the Exotic Pathogen Phytophthora Cinnamomi* (*pythiaceae*). Pathogens and Pests. CNPS Conservation Conference 2015, San Jose, CA.

Swiecki, T., and E. Bernhardt. 2014. *Phytophthora Species Move from Native Plant Nurseries into Restoration Plantings*. Presentation. Available: http://caforestpestcouncil.org/resources/. Accessed February 2015.

U.S. Department of Agriculture (USDA). 1977. *Soil Survey of Solano County*. Natural Resources Conservation Service.

———. 1978a. *Soil Survey of Napa County*. Natural Resources Conservation Service.

———. 1978b. *Soil Survey of Sonoma County*. Natural Resources Conservation Service.

———. 1997 (September). *Ecological Subregions of California, Section and Subsection Descriptions*. U.S. Forest Service, Pacific Southwest Region. R5-EM-TP-005.

USDA Animal and Plant Health Inspection Service (APHIS). 2013 (August). *List of Regulated Hosts and Plants Proven or Associated with Phytophthora ramorum.*

Yakabe, L. E., C. L. Blomquist, S. L. Thomas, and J. D. MacDonald. 2009 (September). Identification and Frequency of Phytophthora Species Associated with Foliar Diseases in California Ornamental Nurseries. In *Plant Disease*, pages 883–890.

Young, J. A., and C. G. Young. 1992. *Seeds of Woody Plants in North America*. Dioscorides Press, Portland, Oregon

Appendix A COMPENSATORY MITIGATION PLAN

Pacific Gas and Electric Company

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June 16, 2015

Joanna Jensen
State Water Resources Control Board
1001 I Street, 15th Floor, 15-57C
Sacramento, CA 95814

RE: Vaca Dixon-Lakeville 230 kV Reconductoring Project- Compensatory Mitigation Plan

Dear Ms. Jensen,

PG&E is planning to construct the Vaca Dixon-Lakeville 230 kV Reconductoring Project (project), which will replace conductor on two circuits between Vaca Dixon Substation in Vacaville and Lakeville Substation in Petaluma. As part of the regulatory approval and permitting of this project, PG&E will be required to mitigate for anticipated, unavoidable, permanent loss of aquatic resources. This draft plan details PG&E's approach to meeting the mitigation requirements pertaining to wetlands on this project.

As a condition of the 401 Water Quality Certification, issued by the State Water Resources Control Board, PG&E will be required to mitigate for the permanent loss of up to 0.039 acres of wetlands and 0.088 acres of stream habitat. PG&E is committed to meeting all legal and financial assurances required for compensatory mitigation. PG&E's preferred approach to compensatory mitigation on this project is to (1) provide onsite mitigation by enhancing 0.052 acres and 100 linear feet of stream habitat; and (2) purchase 0.10 floodplain mosaic wetlands (wetlands & stream) credits from the Cosumnes Floodplain Mitigation Bank. Further information about the proposed on-site mitigation and mitigation credit purchase is provided below.

1. Proposed Onsite Enhancement of Stream Habitat

PG&E proposes to remove an existing defunct culvert at Crossing Location #9 and a defunct culvert at prior Crossing Location #8 and reshape the drainages in order to provide habitat enhancements and return the drainages to their natural stream morphology. In addition, PG&E would install a water bar at Location #8 to prevent further erosion of the south bank of the drainage. PG&E would use equipment during the summer months of August 1st through September 30th to minimize impacts to the existing bed and bank of the drainages and avoid work within a wetted stream channel. Below are site specific details for the construction methods at these two locations:

Location 8: (latitude 38.343600°; longitude -122.048883°)

Site 8 is located within an unnamed intermittent tributary to Laguna Creek, northeast of Tower 49 (see Attachment 1 for a site map). Steelhead are potentially present in Laguna Creek, which flows into Alamo Creek, and ultimately drains to the Sacramento River via Cache Slough. The surrounding vegetation is California annual grassland and oak woodland. At this site, the intermittent stream is incised 10 to 15 feet, with steep banks. A ranch road apparently formerly crossed the stream at this location on a berm with a culvert; however, the former berm is now completely eroded away and a segment of the pipe is exposed at the edge of the stream channel. The tributary area is 44 acres and the 100-year peak flow is estimated at 21 cubic feet per second. PG&E had initially proposed to install two approximately 54-foot-long 36-inch corrugated metal pipe culverts to create a 14-foot-wide road crossing, resulting in an estimated 0.016 acre and 54 linear feet of impact to the stream habitat. After discussing the erosional problems present at this site with Water Board and Department of Fish and Wildlife staff, PG&E is proposing to access the nearby transmission towers by helicopter and thus avoiding any potential impacts to aquatic resources.

PG&E is furthermore proposing to remove the existing approximately 14-inch, 10-foot long defunct metal culvert pipe that is situated within the drainage (see Attachment 1 for picture of the culvert location within the stream channel), causing detrimental unnatural erosion of the drainage. Removal of this culvert will return more natural stream flows and morphology to this drainage segment. PG&E proposes to remove the culvert by attaching a chain around the culvert and lifting it out by helicopter to an approved project landing zone. The culvert would then be hauled to a waste disposal site. If the culvert cannot be lifted out of the drainage via helicopter, PG&E proposes to pull the culvert out by hand, then cut into pieces and carry it out by hand to a truck parked at Crossing Location #9. PG&E would implement extreme fire danger safety protocols while cutting the culvert into pieces. Plywood scraps located within the drainage would also be removed by hand.

PG&E also proposes to install a 4-foot wide by 1-foot deep rock water bar across the existing dirt access road to prevent further rill erosion of the road and south bank of the drainage. The bottom 9 inches of the water bar would consist of 2-4 inch rock and the top 3 inches would consist of 1-2 inch rock base. All work for installing the water bar would be performed by hand and materials would be flown in via helicopter.

This onsite mitigation restored area as delineated on the Site Map in Attachment 1 would result in enhancement of 384 square feet or 0.009 acres of stream habitat. The linear length of the drainage improvement is 31 feet. Please see attachment 1 showing a site map and engineering drawings for these improvements. Upland areas will be revegetated in accordance with the pre-existing condition and in accordance with procedures outlined within the project's Restoration and Monitoring Plan.

Location 9: (latitude 38.339433°; longitude -122.048883°)

Site 9 is located within Laguna Creek, southeast of Tower 50 (see Attachment 1 for a site map). The surrounding vegetation is riparian woodland, blue oak woodland, interior live oak woodland, and California annual grassland. Steelhead are potentially present in Laguna Creek 1.8 miles downstream. The site is immediately downstream of a confluence of two low-gradient channels. This site consists of a large intermittent streambed, roughly 20 feet wide with a well-defined bed and bank at the crossing of an old ranch road. A culvert formerly crossed the creek here but was washed out; the old drain pipe still is present in the channel. The tributary area is 768 acres and the 100-year peak flow is estimated at 256 cubic feet per second.

Due to the potential for high flows at the location, PG&E had initially proposed to construct an at-grade crossing to accommodate vehicles and equipment during construction and for operation and maintenance of the transmission line. However, after considering the complexities of constructing a major at-grade crossing at this site, PG&E has opted to construct a 45-foot-long by 14-foot-wide temporary bridge crossing instead. No material will be placed within the bed or bank of the drainage, and there is therefore no anticipated impact to this site due to fill or excavation. PG&E was therefore able to avoid the anticipated approximately 0.013 acre and approximately 20 linear feet of impact to the stream habitat associated with an at-grade crossing.

An imbedded remnant of a large approximately 36-inch, 20-foot long, culvert is present thirty feet downstream of the proposed crossing, causing channel erosion, including alteration of the natural stream flows and channel morphology. PG&E proposes to remove the culvert by accessing the culvert pipe with an excavator to lift the culvert on end and then depositing the rock and soils present in the culvert along the south side of the headwater fork to redirect and restore water flows in the natural main streambed channel, which flows along the north bank. The culvert would then be lifted out of the drainage and either hauled offsite with a truck or flown out via helicopter. The culvert would then be disposed of at a waste disposal site. If an excavator cannot feasibly remove the culvert, workers would cut the culvert into pieces and remove the sections by hand or by a backhoe. PG&E would implement extreme fire danger safety protocols while cutting the culvert into pieces. A qualified stream morphologist would also be onsite during removal and rock/sediment placement to ensure natural hydraulic features are implemented. PG&E would also notify both the State Water Board and California Department of Fish and Wildlife at least 1-week in advance of the culvert removal so that both agencies can monitor the operation, as necessary.

This onsite mitigation restored area as delineated on the Site Map in Attachment 1 would result in 1,859 square feet or 0.043 acres of mitigation stream habitat credit. The linear length of the drainage improvement is 69 feet. Please see attachment 1 showing a site map and engineering drawings for these improvements. Upland areas will be revegetated in accordance with the pre-existing condition and in accordance with procedures outlined within the project's Restoration and Monitoring Plan.

2. Proposed Purchase of Floodplain Mosaic Wetland Credits from the Cosumnes Floodplain Mitigation Bank

The Cosumnes Floodplain Mitigation Bank is approved to sell mitigation credits for wetlands and riparian habitat. The bank is approved by the United States (U.S.) Army Corps of Engineers, U.S. Environmental Protection Agency, California Department of Fish and Wildlife (CDFW), and National Marine Fisheries Service. This bank also received approval by the Central Valley Regional Water Quality Control Board to accept funds for water quality violations.

(A) The contact information for the Cosumnes Floodplain Mitigation Bank is as follows:

Westervelt Ecological Services (property owner and Bank operations manager)
600 North Market Boulevard, Suite #3
Sacramento, CA 95834
Ph (916) 646-3544
Fx (916) 646-3675
Attn: Travis Hemmen
E-mail: themmen@westervelt.com

(B) The Cosumnes Floodplain Mitigation Bank is located in southern Sacramento County along the Cosumnes River near the town of Mokelumne City (38.256181 degrees, 121.4345730 degrees).

(C) PG&E proposes to mitigate impacts to 0.039 acres of wetlands and 0.036 acres of stream habitat through the purchase of 0.10 (rounded to the nearest 1/10 of an acre) floodplain mosaic wetlands (wetlands & stream) credits.

(D) Credits equate to 0.10 acres of habitat.

(E) The floodplain mosaic wetland credit matches in-kind with the wetland/ stream impacts described in our permit application.

(F) The service area for this bank overlaps with the project area and is considered to be the most effective and efficient approach to compensatory wetland mitigation for this project.

If acceptable, PG&E will purchase the credits as described above, and provide the State Water Resources Control Board with proof of this purchase to include in the permit files. Should you have any questions about this project or need any additional information, do not hesitate to contact me at (415) 973-4893.

Sincerely,

Brandon Liddell
Senior Land Planner

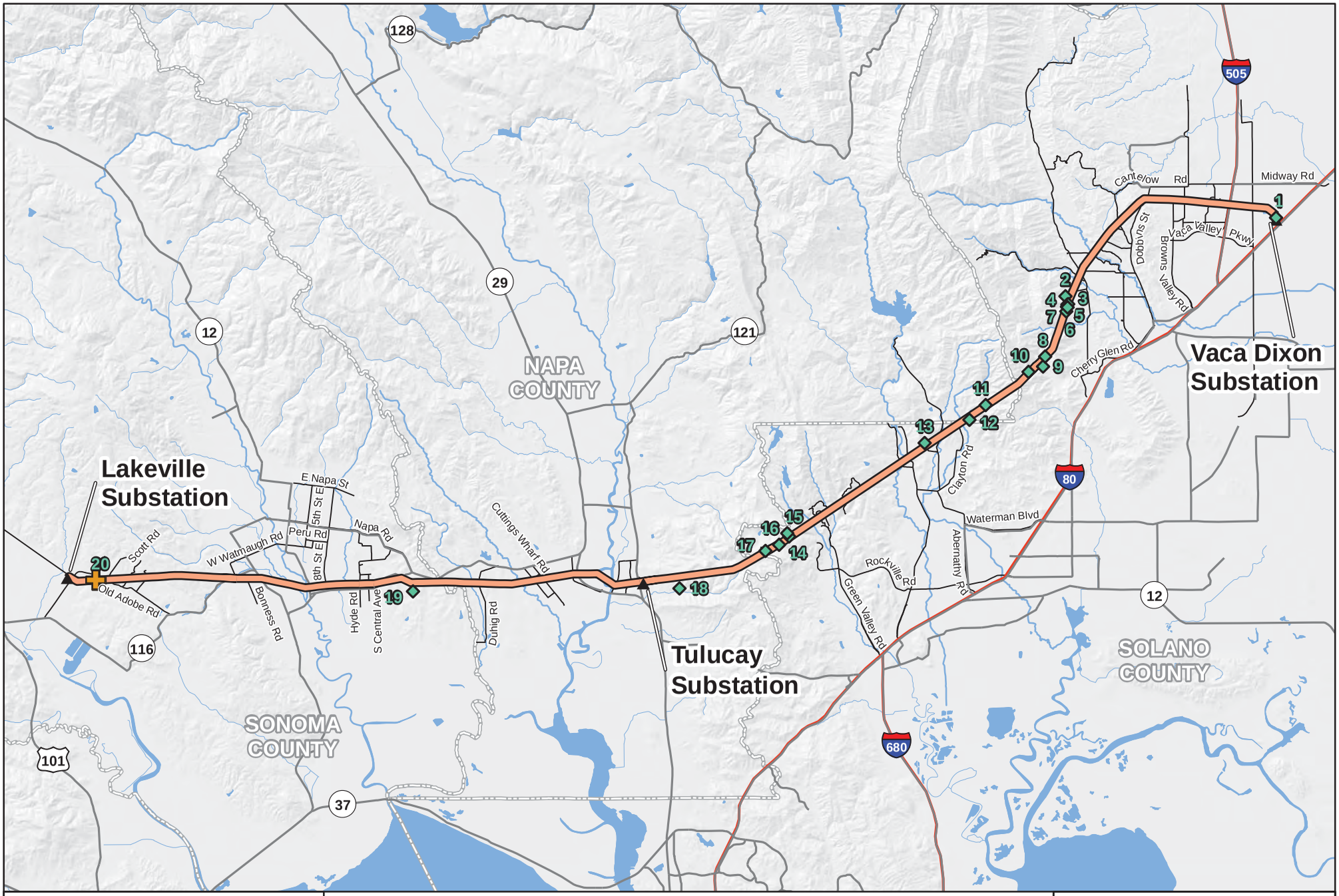
CC:

Andi Henke, PG&E Biologist
Maggie Trumbly, PG&E Environmental Management Supervisor
Nance Donati, PG&E Environmental Policy
DJ Allison, AECOM
Travis Hemmen, Westervelt Ecological Services
Justin Yee, Army Corps of Engineers
Bill Orme, State Water Resources Control Board

PG&E Vaca Dixon- Lakeville Project

Compensatory Mitigation Plan

Attachment 1- Maps and Drawings


Lakeville Substation
Vaca Dixon Substation
Tulucay Substation
NAPA COUNTY
SONOMA COUNTY
SOLANO COUNTY
Cantelow Rd
Midway Rd
Vaca Valley Pkwy
Dobbins St
Browns Valley Rd
Cherry Glen Rd
Clayton Rd
Waterman Blvd
Abernathy Rd
Rockville Rd
Green Valley Rd
E Napa St
5th St E
8th St E
Peru Rd
Napa Rd
W Watmaugh Rd
Scott Rd
Old Adobe Rd
Bonness Rd
Hyde Rd
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Duhig Rd
Cuttings Wharf Rd
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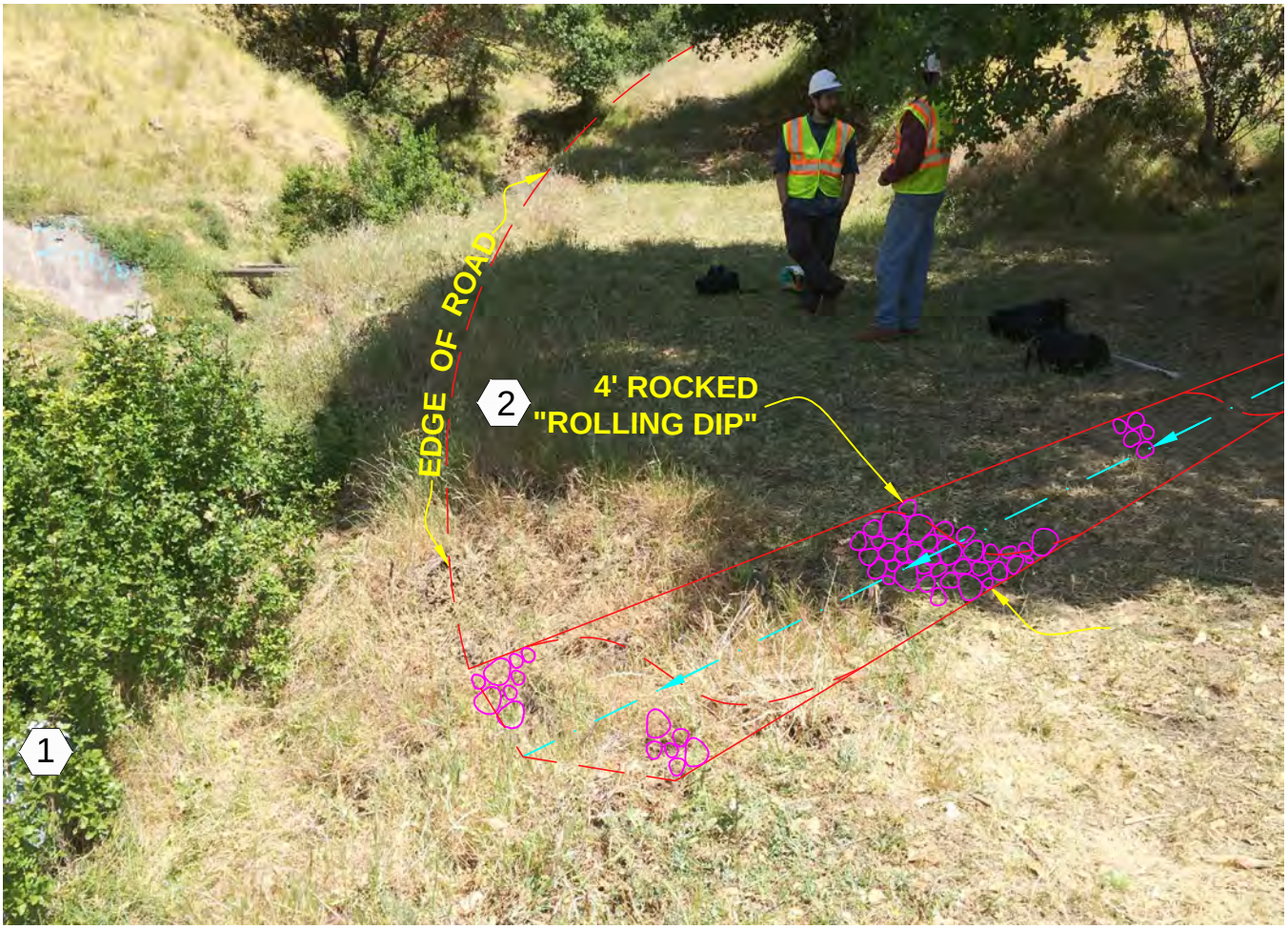
19
20
505
80
680
128
29
121
12
116
101
37
Miles
0
2
4
8
1:240,000
1 in = 4 miles
N
Existing Substation
Existing Vaca Dixon-Lakeville 230 kV Transmission Line
Highway
County Boundary
Crossing Improvement Site
Temporary Guard Structure
Water Feature
Source: AECOM 2013; PG&E 2013
Vaca Dixon-Lakeville 230 kV Reconductoring Project
Project Vicinity Map
August 28, 2013

Vaca Dixon- Lakeville Project: Compensatory Mitigation Plan

Site 8 Boundary Location Map

Vaca Dixon- Lakeville Project: Compensatory Mitigation Plan

Site 9 Boundary Location Map

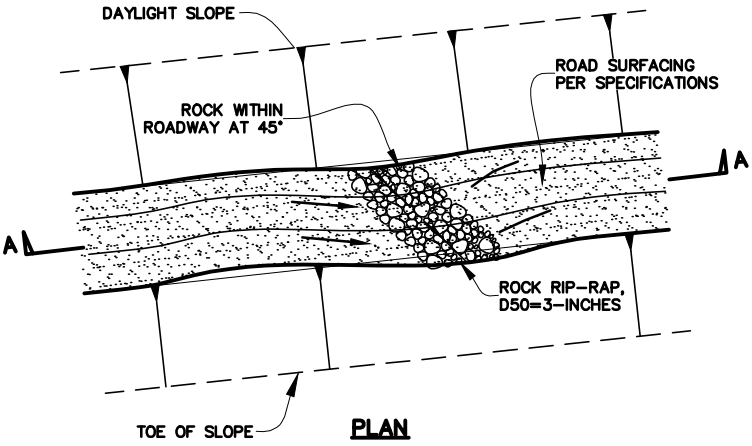


CROSSING LOCATION 8

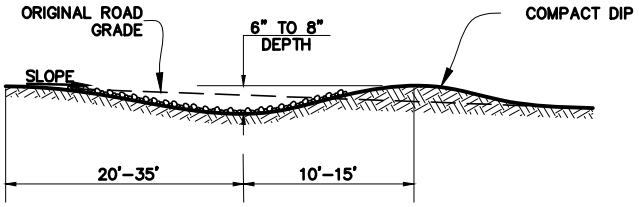
CONSTRUCTION NOTES:

1. CULVERT TO BE REMOVED.

2. CONSTRUCT 4–FOOT WIDE ROCKED "ROLLING DIP/WATER BAR" PER DETAIL HEREON. ROCK SHALL BE 2 TO 3–INCHES IN SINGLE MAXIMUM DIMENSION.



PLAN



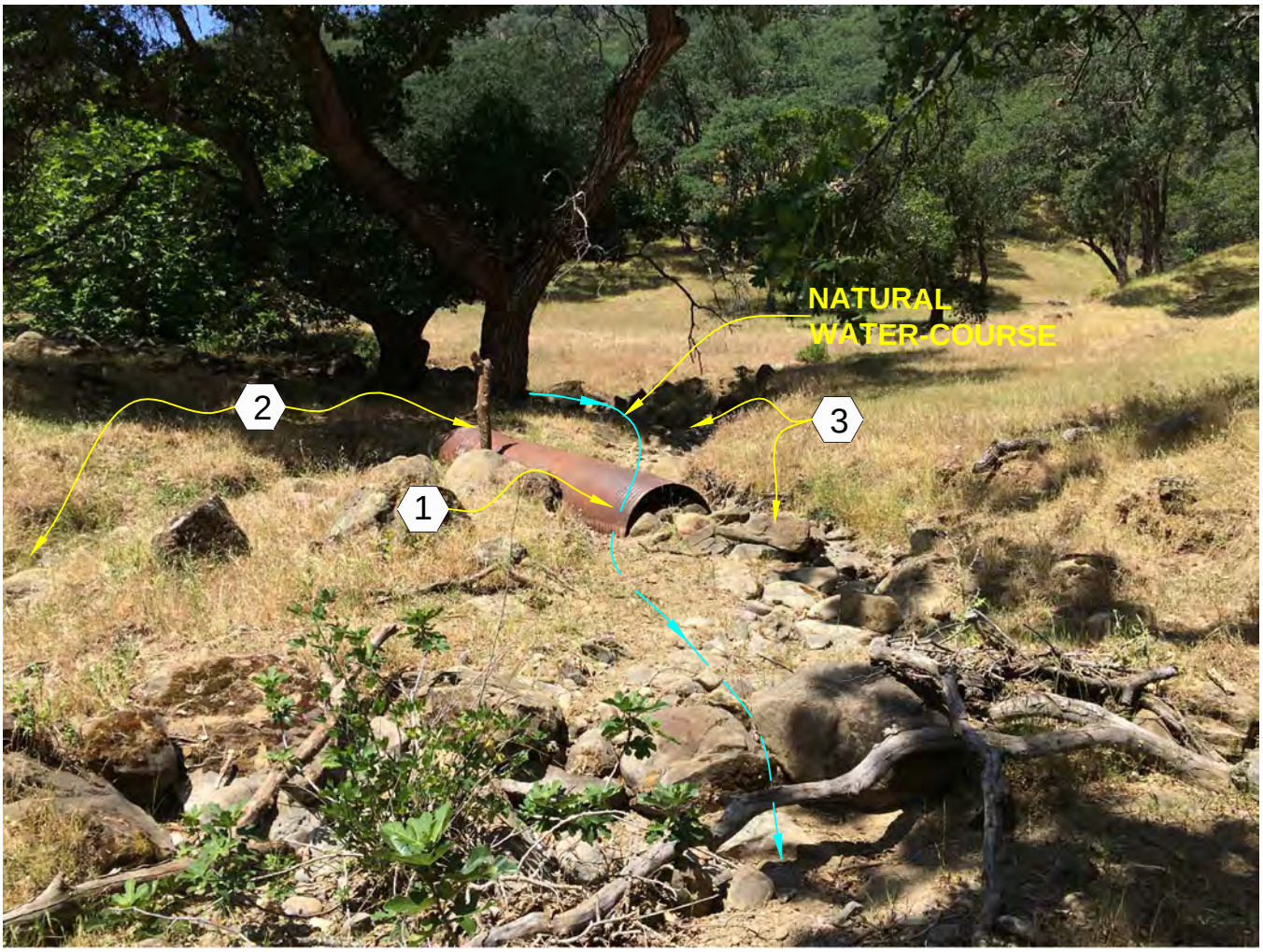
SECTION A–A

A/1 TYPICAL WATER CROSSING – "ROLLING DIP"
N.T.S.

LAV// Pinnacle Engineering
5401 Business Park South, Suite 204, Bakersfield, CA 93309
Phone: (661) 869-0184 Fax: (661) 377-0076

JOB No.: 14-606 DATE: 05/11/2015

VACA-DIXON-LAKEVILLE
RE-CONDUCTORING PROJECT
CROSSING IMPROVEMENTS



CROSSING LOCATION 9

CONSTRUCTION NOTES:

1. EXISTING CULVERT TO BE REMOVED.
2. PLACE ROCKS IN SIDE-CHANNEL AS INSTRUCTED BY STREAM MORPHOLOGIST.
3. ROCK AND SEDIMENT FROM WITHIN PIPE, SHALL BE PLACED INTO WATERCOURSE AS DIRECTED BY STREAM MORPHOLOGIST.

LAV// Pinnacle Engineering
5401 Business Park South, Suite 204, Bakersfield, CA 93309
Phone: (661) 869-0184 Fax: (661) 377-0076

JOB No.: 14-606 | DATE: 05/11/2015

VACA-DIXON-LAKEVILLE
RE-CONDUCTORING PROJECT
CROSSING IMPROVEMENTS

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MITIGATION MONITORING AND REPORTING PLAN

A. Authority and Purpose

The IS prepared for this Project evaluated the potential for impacts from construction, operation, and maintenance of the Project, which indicated that the Project could have potentially significant effects on the environment. Environmental resources identified as potentially affected by the Project include:

- Air quality and greenhouse gas emissions;
- Biological resources;
- Cultural resources;
- Geology and soil;,
- Hazards and hazardous material;
- Hydrology and water quality;
- Noise; and
- Transportation and traffic.

The Permittee proposed, and/or agreed to, implementation of mitigation measures to avoid or reduce potential Project impacts to these resources to less than-significant levels. The mitigation measures includes a combination of specialized construction techniques, best management practices (BMPs), and applicant-proposed measures (APMs) that are incorporated into the IS/MND for the Project.

As the designated CEQA lead agency, the State Water Board is required to adopt, concurrent with adoption of the IS/MND, a Mitigation Monitoring and Reporting Plan (MMRP) for the Project to ensure that all mitigation measures included in the IS/MND are implemented as intended, and that identified potential significant environmental impacts are indeed reduced to less than significant levels as stated in the IS/MND.

B. Mitigation Compliance Responsibility

This proposed MMRP has been prepared to provide a summary of how the State Water Board, as the CEQA lead agency for the Project, would ensure that the mitigation measures identified in the IS/MND and Order are implemented. The MMRP also identifies other agencies that have enforcement and compliance responsibilities; however, until the mitigation measures have been completed, the State Water Board will retain main responsibility for ensuring that all measures are implemented by the Permittee in accordance with the MMRP.

The Permittee will be responsible for successfully implementing all the mitigation measures in the MMRP and IS/MND, and is responsible for assuring that these requirements are met by all of its construction contractors and field personnel. Standards for successful mitigation also are implicit in many mitigation measures that include such requirements as obtaining permits or avoiding a specific impact entirely. Additional mitigation measures may be imposed by applicable agencies with jurisdiction through their respective permit processes. A list of other permits and approvals that are known to be required for the Project are listed below in Table 1.

Table 1. Other Required Permits and Approvals

Jurisdiction	Agency	Permit/Approval
Federal	U.S. Fish and Wildlife Service	Section 7 Consultation
	FAA	Notification of Proposed Construction or Alteration
	U.S. Army Corps of Engineers	Section 404 Nationwide Permit 12
State	Public Utilities Commission	Notice of Construction
	Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement
	State Historic Preservation Officer	Section 106 Consultation
Local	Solano, Napa, and Solano counties; cities of Vacaville and Napa	Encroachment Permits, Demolition Permits

C. General Monitoring and Reporting Procedures

The State Water Board, as the lead agency under CEQA for the Project, is responsible for confirming that the all required mitigation measures are implemented properly by the Permittee, or consultants or personnel hired by the Permittee during the Project. The Permittee must assign environmental monitors, approved by the State Water Board, to be onsite during any portion of Project implementation that has the potential to create a significant environmental impact, or other impact for which mitigation is required.

The assigned environmental monitor is responsible for ensuring that all procedures specified in the MMRP and Order are followed. A checklist will be developed and maintained by the environmental monitor(s) to track all procedures required for each mitigation measure and to ensure that the timing specified for the procedures is adhered to. The environmental monitor(s) will note any problems that may occur, and take appropriate action to rectify any problems. Site visits and specified monitoring procedures performed by other individuals will be reported to the assigned environmental monitor(s). A monitoring record form will be submitted to the environmental monitor by the individual conducting the visit or procedure so that details of the visit can be recorded and progress tracked by the environmental monitor.

In order to document compliance with required mitigation measures and this Order, the Permittee shall submit Monthly Reports (Report Type 1) to the State Water Board, as described in Section XIII.B. and Attachment F (Reporting and Notification Requirements). The Permittee shall notify the State Water Board staff immediately of any Project activity or event causing a significant impact to environmental resources. Notification may be via telephone, e-mail, delivered written notice, or other verifiable means.

The Permittee shall grant Water Board staff permission to inspect any records, sites, facilities, equipment, practices, or operations regulated or required under this Order for the purposes of assuring compliance with the required mitigation measures and this Order.

D. Applicant-Proposed Mitigation Measures

The following section lists applicant-proposed mitigation measures identified and described in Section 3.9 of the IS/MND on pages16 to 26. To the extent any of the following measures conflict with requirements in subsequently issued agency permits, the agency permit requirements would supersede these measures.

1. General Mitigation Measures

APM-GEN-1: Develop and Implement a Worker Environmental Training Program
A worker environmental training program that is specific to the project will be developed. Each construction and on-site worker will attend the environmental training before starting on-site work. Training will include avoidance and minimization measures that are being implemented to protect biological resources, hydrologic resources, cultural resources, and air quality, as well as manage hazardous materials. The training will also discuss the terms and conditions of any permits or agreements, information on the federal and state Endangered Species Acts, and the consequences of noncompliance with these permits, agreements, and acts. Workers will be informed about the presence, identification, life history, and habitat requirements of the special-status species that have a potential to occur in the project area. Training will include recognizing and avoiding exclusion areas and sensitive habitat and specific avoidance or minimization measures for sensitive species and habitats. Training also will include information on state and federal laws protecting nesting birds, wetlands, and other water resources. Focused trainings may be directed at an individual's job-specific task, provided that the worker conducts activities within a limited scope (pilots, delivery drivers, site visitors, etc.). The Environmental Inspector will have discretion as to which level of training a worker receives and whether they are required to have an escort (i.e., another person who has received the full environmental training). All trainees will sign a training sign-in sheet, verifying participation. The environmental training will include avoidance requirements and procedures to be followed if unanticipated cultural resources are discovered during project-related activities, as well as a discussion regarding disciplinary and other actions that may occur when historic preservation laws and PG&E policies are violated. All project workers involved with ground-disturbing activities will receive a pamphlet describing how to identify cultural resources and what to do if an unanticipated discovery is made during construction.

2. Aesthetics

APM-AE-1: Temporary Nighttime Construction Lighting
Temporary lighting required for nighttime construction will be focused on work areas and directed on site to minimize potential effects on nearby sensitive receptors.

3. Agricultural Resources

APM-AG-1: Agriculture Impacts Avoidance and Compensation
If crops (i.e., grape vines, orchards) are removed or damaged to accommodate construction activities, PG&E will provide compensation to landowners for temporary crop loss associated costs. Per landowner request, PG&E will restore existing agricultural fields to preconstruction conditions or compensate the landowner to restore fields to preconstruction conditions so crops can be replanted.

4. Air Quality and Greenhouse Gas Emissions

APM-AQ-1: Minimize Vehicle/Equipment Emissions

PG&E will minimize vehicle emissions during construction by implementing the following measures:

- Minimize idling times by shutting equipment off when not in use and by reducing the maximum idling time, as required by applicable California Regulations.
- Maintain and properly tune construction equipment in accordance with manufacturer's specifications.
- Options for reducing the emissions of off-road equipment (more than 50 horsepower) will include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as they become available.

APM-AQ-2: Minimize Fugitive Dust

PG&E will minimize fugitive dust during construction by implementing the following measures in accordance with the SWPPP:

- Visible dust emissions generated by the project will not exceed 20 percent opacity during the time when soil is disturbed.
- Exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered or covered, as needed, to reduce fugitive dust.
- Haul trucks transporting soil, sand, or other loose material off site will be covered or will be required to maintain at least 1 foot of freeboard.
- Visible mud or dirt track-out onto adjacent paved roads will be removed from active work areas at the end of each work day.
- Vehicle speeds on unpaved roads with no posted speed limit and rights-of-way will be limited to 15 miles per hour.
- A publicly visible sign with the name and telephone number of the lead agency contact for dust complaints will be posted. The air district's phone number also will be visible on the sign.

PG&E may also temporarily apply gravel or other substrates to control fugitive dust at landing zones or other work areas, as necessary.

5. Biological Resources

APM-BIO-1:

a. Approval of Biological Monitors: At least 30 days before starting construction activities PG&E shall submit to CDFW in writing the names and qualifications of biologists (Designated Biologists) assigned to this project. PG&E shall obtain CDFW approval of any Designated Biologists in writing before starting construction activities, and shall also obtain approval in advance in writing if any Designated Biologists are changed or added. PG&E shall ensure that the Designated Biologists are knowledgeable and experienced in the biology and natural history of animal and plant that may be present at the project area. The Designated Biologists shall be responsible for monitoring construction activities to minimize and avoid take of biota and to minimize disturbance of habitats.

   Lead Biologist: One Designated Biologist shall be appointed Lead Biologist and that individual shall be responsible for oversight of the Designated Biologists, coordination of biological issues with all parties working on the project, record keeping, reports and monitoring site compliance with the terms of this Agreement. In some instances, approval of

Designated Biologists by CDFW may require that they work under the supervision of the Lead Biologist.

Quantity of Designated Biologists On-Site: The PG&E shall have a sufficient number of Designated Biologists on-site to ensure all phases of construction activities are monitored to minimize and avoid project impacts as required in the applicant proposed measures and applicable federal and state permits.

b. Assign a Biological Monitor to be On Site during Construction Activities: A biological monitor will monitor construction activities that have the potential to affect special-status species or other sensitive resources. The monitors(s) will ensure implementation and compliance with the resource-specific avoidance and minimization measures. Each monitor will have the authority to temporarily halt or redirect work or determine alternative work practices with construction workers, as appropriate, if construction activities are likely to impact sensitive biological resources.

   If a special-status wildlife species is encountered during construction, project activities will cease in the area where the species is found until the biologist, with prior authorization from USFWS and/or CDFW, in accordance with the species state or federal listing, relocates the species out of harm's way and/or takes other appropriate steps previously authorized by USFWS and/or CDFW to protect the wildlife. Work may resume once the biological monitor has determined that construction activities will not harm the wildlife. No pursuit, capture or harm to state fully protected species will be allowed; state fully protected species will be allowed to leave project areas under their own volition.

APM-BIO-2: Restrict Work Area and Access Routes
Vehicles will be confined to established roadways and pull-outs, and pre-approved access roads, overland routes, turn-outs, project work areas, PG&E-owned facilities, and access areas.

APM-BIO-3: Maintain Equipment and Follow Refueling Directives
All equipment will be maintained to avoid leaks of automotive fluids, such as fuels, solvents, or oils. Staging and storage areas for equipment, materials, fuels, lubricants, and solvents shall be located more than 100 feet from stream channel and banks. All equipment and fuel stored on-site shall be bermed to contain any spilled material and shall be protected from rain. Berms shall consist of plastic covered dirt or sand bags.

APM-BIO-4: Avoid Impacts on Special- Status Plant Populations
Special-status plant populations previously identified during the field surveys within or adjacent to project work areas will be surveyed prior to construction, as necessary, to determine the extent of the current populations. All locations currently supporting or previously observed in all planning and preconstruction botanical surveys to support special-status plant populations will be flagged. During these surveys, special-status plant populations as described above that have the potential to be impacted will be mapped and flagged and/or identified with signage for avoidance. Surveys will be conducted during the appropriate blooming period for each special-status plant species previously identified within the project area and maps will be updated to reflect any plant species detected. If work must occur before the next blooming season and ground disturbance must occur in previously known special-status plant areas, then those areas will be treated as if the plant is present (i.e., topsoil segregation). Should grading work be required within occupied habitat, up to the top 6 inches or other feasible amount will be stored separately on site, protected from exotic weeds, and replaced following completion of the project. Provisions for disturbed populations will be addressed in the Mitigation and Restoration

Plan. The Mitigation and Restoration Plan will address how water conservation will be practiced in the event drought conditions persist.

APM-BIO-5: Conduct Pre-Construction Surveys and Establish Work Exclusion Areas

a. Burrowing species: A biologist will conduct pre-construction surveys no more than 2 weeks before the start of construction activities at scheduled work locations. During these surveys, the biologist will note any potential burrowing owl or American badger burrows within 250 feet of the project. The biologist will confirm or readjust the boundaries of specific temporary work areas based on any sensitive resources that are present, and will determine if additional targeted resource surveys are needed to verify the status of burrowing owl, American badger, or other special-status species that have the potential to occur within the project area.
b. Foothill yellow-legged frog (FYLF): Immediately prior to the start of any work within 50 feet of suitable habitat, the on-site biologist will conduct a visual survey of the work area for the presence of FYLF. If a FYLF is found within the work area, it will be relocated, if necessary, by the Biological Monitor to nearby suitable habitat outside of the active work area. Any relocations will be reported to CDFW.
c. Western pond turtle: Immediately prior to the start of any work within 50 feet of suitable habitat, the on-site biologist will conduct a visual survey of the work area for the presence of western pond turtle. If a western pond turtle is found within the work area, it will be relocated, if necessary, by the Biological Monitor to nearby suitable habitat outside of the active work area. Any relocations will be reported to CDFW.
d. California red-legged frog (CRLF): Immediately prior to the start of activities in suitable CRLF habitat—from Tower Work Area 98 to Tower Work Area 109 in Napa County and from Tower Work Area 157 to Lakeville Substation—a USFWS-approved biologist will conduct a daily pre-construction survey for CRLF. During the wet season (November 1 to April 14), the pre-construction survey within these areas will include all locations where work will occur that day. During the dry season, the survey area will be limited to work locations within 300 feet of suitable aquatic habitat for CRLF. Wet season windows for surveys may be advanced or set back by up to 30 days depending on actual precipitation event occurrences (greater than 0.5 inches within a 24-hour window) during season of construction if authorized by CDFW and SWRCB.

APM-BIO-6: Avoid Impacts on Wetlands and Streams

Prior to the initiation of construction in areas containing or adjacent to streams or wetlands, the work areas will be surveyed by a biologist and flagged for avoidance. Exclusionary buffers will be established around wetlands and streams, as necessary. Wetlands and streams will be avoided to the maximum extent feasible. In the event that avoidance is not feasible and if work should occur in wetlands and streams, PG&E will implement BMPs including, but not limited to: temporarily placing wooden, fiber, or metal mats or portable bridges at stream and wetland crossings to minimize downstream sedimentation, rutting of soils, and ground disturbance. PG&E will also prepare a Land Form and Grading Plan, to be approved by the SWRCB, which will outline guidelines for access road and site disturbance to minimize run-off and erosion. PG&E will also restore impacted wetlands and streams to pre-construction conditions, as described in APM BIO-15.

APM-BIO-7: Avoid Impacts on Valley Elderberry Longhorn Beetle

In accordance with PG&E's existing Programmatic Biological Opinion, all elderberry plants with a stem diameter greater than 1 inch that have been identified during pre-construction surveys in the project area, within the range of valley elderberry longhorn beetle (VELB), will be mapped

before the start of construction; any elderberry bushes within 20 feet of planned work activities will be flagged for avoidance (PG&E VELB Environmental Compliance Program 2007). Should impacts on elderberry bushes be unavoidable, the impacts will be documented in accordance with the Programmatic Biological Opinion.

APM-BIO-8: Avoid Wildlife Entrapment
Temporary excavations, including but not limited to pole excavations for crossing structures, that may act as pitfall traps (i.e., those exceeding 6 inches in depth) will be securely covered at the end of each work day or escape ramps will be provided at linear intervals not exceeding 10 feet. Existing pole excavations will be inspected before they are filled to verify the absence of wildlife. If wildlife becomes entrapped in an excavation, work will be halted, the biological monitor will be contacted, and the species will be rescued. The incident will be reported to the appropriate agencies in compliance with project authorizations.

APM-BIO-9: Allow Only Specified Erosion Control Materials
To avoid impacting special-status reptile and amphibian species—including California redlegged frog, foothill yellow-legged frog, and western pond turtle—only tightly woven netting or similar material, such as natural fiber rolls and geotextiles, will be used for erosion control within or adjacent to suitable habitat. No plastic monofilament netting will be used in these areas.

APM-BIO-10: Avoid Impacts on Nesting Birds
If work is scheduled to occur during the avian nesting season (March 1 through August 31), nest detection surveys will be conducted no more than 15 days prior to initial work activities at designated construction areas and towers to determine nesting status in the area. Nest surveys will be accomplished by ground surveys and/or by helicopter and will support phased construction, with surveys scheduled to be repeated if construction lapses in a work area for 30 days between March and July. Nest surveys will follow standard biological survey methods, and survey efforts will be tailored by project location, with visits planned at appropriate timeframes/ intervals to detect nesting activity. In addition, biologists monitoring construction will conduct nest surveys and/or nest monitoring in areas adjacent to ongoing construction. If nests are found, the project biologist will establish an appropriate buffer to be in compliance with the Migratory Bird Treaty Act (MBTA) and Fish and Game Code 3503. PG&E will apply standardized species-specific no activity buffers developed as part of PG&E's avian management plan. Nest building activities will be periodically monitored, recorded and assessed for protection measures. Active nests (defined as the presence of chicks and/or eggs) will be monitored and exclusion buffer sizes increased if the monitoring biologist determines this is necessary based on disturbance behavior exhibited by nesting birds in proximity to project construction. Nesting pair acclimation to disturbance in areas with regularly occurring human activities will be considered when establishing no activity nest buffers. Per the discretion of the biological monitor, vegetation removal by hand may be allowed within nest buffers or in areas of potential nesting activity. These activities shall be closely monitored to ensure that active nests are not disturbed. Abnormal nesting behaviors include, but are not limited to, defensive flights/vocalizations directed towards project personnel, standing up from a brooding position, and flying away from the nest. The biological monitor will have authority to order the cessation of all nearby project activities if the nesting birds exhibit abnormal behavior which may cause reproductive failure (nest abandonment and loss of eggs and/or young) until an appropriate buffer is established. To prevent encroachment, the established buffer(s) will be clearly marked for avoidance. The established buffer(s) will remain in effect until the young have fledged or the nest is no longer active as confirmed by the biological monitor. Helicopter restrictions will include observance of appropriate established buffers and avoidance of hovering in the vicinity of active nest sites. Helicopter flight restrictions may be in effect for

densely populated residential areas, and nest surveys by ground in populated areas, such as in backyards, will be subject to property access permissions.

APM-BIO-11: Avoid Impacts on Burrowing Owl
No project-related disturbance will occur within buffers established in accordance with APM-BIO-10 of occupied burrowing owl burrows during the non-breeding season (September 1 through January 31), with appropriate adjustments during the breeding season (February 1 through August 31). The limits of the exclusion zone in the project area will be marked with staking, posts, or flagging. If construction activities must occur within these limits while burrows are active, a site-specific work plan, including onsite monitors, will be prepared and work will take place only in the presence of biological monitor. Compliance with the MBTA and Fish and Game Code 3503 shall be maintained.

APM-BIO-12: Avoid Impacts on Eagle and Swainson's Hawk Nests
If work is conducted during the nesting season, a pre-construction survey to assess the status of known golden eagle, bald eagle, and Swainson's hawk nest sites in the project area will be conducted by a biologist before the start of construction. These surveys will be conducted at appropriate seasonal times and/or will be repeated as necessary to identify active nests throughout the nesting season. A 0.5-mile exclusionary buffer will be implemented around active eagle or Swainson's hawk nest sites. The buffers around active Swainson's hawk nests may be reduced to 0.25 mile if observations by the biological monitor determine that project activities will not disturb nesting activities. This determination will be made based on nest location, tolerance of human disturbances, topography, vegetative screening, and the work activities planned. If the 0.25-mile buffer needs to be breached, prior to the break, CDFW and/or USFWS will be consulted.

APM-BIO-13: Avoid Impacts on Roosting Bats
A survey for special-status bats, including western red bat and pallid bat, will be conducted at appropriate timeframes to detect bats prior to the removal of potential special-status bat roosting habitat, which includes, but is not limited to, the removal or trimming of large trees, snags, or riparian trees, or the presence of structures that could support bats, as identified by a biologist. The survey will include the work location and an area up to 200 feet around the work areas in suitable habitat. If an active roost is detected, a 100 foot buffer will be established around the roost and a qualified biologist will periodically monitor the site. If this avoidance strategy is not practicable, an alternative plan will be developed in consultation with CDFW. Any planned tree removal in suitable habitat will be assessed for the presence of western red bats and the following procedures will be followed. To the maximum extent feasible, tree removal or trimming activities will only occur between September and April (not during the maternity season – May through August). In suitable habitat, any trees, snags, or stumps planned for removal or significant trimming will be removed on warm days between late morning and early afternoon when any bats present are likely to be warm. Noise and vibration disturbance will be created on the tree, and potential crevices and cavities will be carefully opened and inspected by a qualified biologist for the presence of bats. If bats are suspected within trunk or limb tree cavities, attempts will be made to expose any bats to allow escape, by successively cutting sections above the cavity to open it, and pausing 10 minutes between cuts to inspect and determine if bats are present. If bats may occur in branches that can be removed from the tree intact and set aside, the removed branches will be carefully removed and set upright to allow bats to passively escape. Active maternity colonies of western red bats are not anticipated in the project area given the known maternity range for this species, but should a bat nursery occur, disturbance will be avoided by establishment of appropriate buffers (approximately 100 to 200

feet) until it is determined that breeding is complete and the young are mature and flight-capable.

APM-BIO-14: Avoid and Minimize Impacts on Critical Habitat and Sensitive Natural Communities

If construction work will be conducted within USFWS-designated critical habitat or near sensitive natural communities—including brackish marsh, wetlands, streams, vernal pools, and native grasslands—the boundaries of the work area adjacent to sensitive vegetation areas will be delineated with visible flagging or fencing, or otherwise marked by a biologist as exclusion zones, prior to the start of construction in those areas. The flagging, fencing, and/or other marking will be maintained in place for the duration of construction at each location. Should work be necessary within sensitive natural communities, measures— including cleaning construction equipment of dirt and vegetation before entry and requiring that only weed-free materials be utilized—will be implemented to avoid the introduction of noxious weeds. Only project personnel entering by foot will be allowed within vernal pool habitat.

APM-BIO-15: Restore Sites Disturbed by Construction

Before construction begins, a Mitigation and Restoration Plan will be prepared by a restoration ecologist and submitted to the State Water Board and CDFW for approval. This process will be augmented by measures to protect fish and wildlife resources that are generated within specific Lake and Streambed Alteration Agreements with CDFW. The Restoration Plan will include post-construction plans for restoring construction work areas to preconstruction conditions through recontouring, erosion control, removal of construction debris, and decompacting soil. The Restoration Plan will also provide seasonal and/or weather constraints associated with driving through dry stream crossings. Restoration work may also include such activities as replanting or reseeding of native species, or using a seed mix that is consistent with agricultural/ranching operations and complements nearby habitat type(s) or agricultural conditions.

The Mitigation and Restoration Plan will also specify requirements to document the existing conditions of work areas and overland travel routes prior to construction, including preconstruction photo documentation, which will be conducted by a biologist. Specifically, wetlands and streams impacted by crossing improvements or used during construction will be photodocumented prior to construction. Once restoration work is completed, a biologist will conduct post-construction photo documentation of the crossing location sites to ensure they have returned to approximate pre-construction conditions.

APM-BIO-16: California Red- Legged Frog Exclusion Fencing

If major ground-disturbing work will occur within suitable CRLF habitat—from Tower Work Area 98 to Tower Work Area 109 in Napa County and from Tower Work Area 157 to Lakeville Substation—during the wet season (defined as November 1 to April 14), exclusion fencing may be installed around the perimeter of work areas to exclude CRLF from these areas. The fencing, which can be made of wood, geotextile fabric, or other durable material, will be a minimum of 3 feet in height and will be buried at least 4 inches underground. Gates will be installed to allow vehicles to enter from access roads. These gates will be kept closed (to the extent practicable) during construction, and will be closed at the end of each work day. Exit funnels may be installed, where appropriate, to allow small vertebrates to leave the work area unharmed. The exclusion fencing will remain in place for the duration of construction activities—if located within 300 feet of suitable aquatic habitat for CRLF—or for the duration of the wet season only if no suitable aquatic habitat is present. A biological monitor will regularly check that the fence is functioning properly and will check for the presence of sensitive species. A biological monitor will check the fences daily during any rain events of 0.25 inch or greater and within 48 hours

after a rain event of 0.25 inch or greater, on days where construction is occurring at the fenced work area.

APM-BIO-17: Minimize Impacts to Steelhead
Work within stream channels upstream of areas where steelhead may be present will be conducted during the dry season when water is absent. These areas include tributaries to Encinosa Creek, tributaries to Ulatis Creek, Laguna Creek and its tributaries, tributaries to Green Valley Creek, tributaries to Dug Road Creek, and tributaries to the Petaluma River. Rock fill or riprap used for culverts or plating will consist of appropriate masonry material that is free of debris or pollutants. PG&E will develop and implement site-specific BMPs a part of the SWPPP to prevent erosion and sedimentation during construction. The size, quantity, and placement of rock fill will be appropriate to maintain normal stream flows, prevent scouring and erosion, and avoid impeding the passage of aquatic organisms.

APM-BIO-18: Nighttime Lighting
Temporary lighting required for nighttime construction will be directed away from known nest locations, bat roosts, and other sensitive biological resources. The minimum amount of lighting necessary for nighttime construction will be used. Nest locations and other sensitive biological resources will be flagged in the field and a biologist will provide a tailboard training describing the locations to crewpersons near the work site before lighting is installed. CDFW approval will be necessary for instances when PG&E needs to operate heavy equipment after 11:00 PM for more than three consecutive nights or more than five nights a month.

APM-BIO-19: Compensatory Mitigation Approval
Prior to initiation of construction, PG&E will provide a compensatory mitigation strategy in a Restoration and Mitigation Plan to CDFW and SWRCB for approval to offset temporary and permanent impacts to sensitive species habitat, aquatic resources and riparian habitat, and sensitive natural communities. Compensatory mitigation may include purchase of mitigation credits at a state or federal approved mitigation bank, in lieu fee program, or onsite/ offsite restoration that improves ecological features of the impacted resource. PG&E will not begin construction until written approval is received from CDFW and SWRCB for this plan.

6. Cultural and Paleontological Resources

APM-CU-1: Archaeological Site Avoidance
Archaeological sites and isolates are within the reconductoring project area. To avoid inadvertent damage to these sites during project implementation, work area limits adjacent to known sites will be clearly marked with visible flagging tape, and construction crews will be instructed that no vehicle access, travel, equipment staging and storage, or other construction-related activities are allowed outside designated work areas.

APM-CU-2: Management of Unanticipated Discoveries
Construction activities may inadvertently uncover previously unrecorded cultural resources. If cultural resources are inadvertently discovered during construction activities, all activities will be halted within 100 feet of the discovery and a PG&E cultural resources specialist will be contacted to assess its significance.

APM-CU-3: Treatment of Paleontological Discoveries
If fossil remains are uncovered during project construction, all work within 50 feet of the discovery will be halted, and the construction crew will immediately notify PG&E. PG&E will contact a paleontologist who will evaluate the resource and will prepare a treatment plan in

accordance with Society of Vertebrate Paleontology Guidelines (1996). Components of the treatment plan related to "unique" fossil specimens that are encountered during construction may include a field survey, additional construction monitoring, specific sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings.

APM-CU-4: Treatment of Human Remains
If any human remains are inadvertently discovered during construction activities, all activities will be halted within 100 of the discovery and a PG&E cultural resources specialist will be contacted to conduct an assessment. The PG&E cultural resources specialist will contact the county coroner, if necessary, following the California Health and Safety Code, Section 7050.5. If the human remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, who will notify and appoint a Most Likely Descendent (MLD). PG&E and the MLD will determine how to treat human remains. No work may proceed within 100 feet of the site until treatment of the remains is complete or permission from the PG&E cultural resources specialist has been received.

7. Hazards and Hazardous Materials

APM-HAZ-1: Hazardous Materials Management
To minimize the potential for release of hazardous materials and risk of upset, PG&E will adhere to the measures detailed in the SWPPP for storage, refueling, and maintenance of helicopters, construction vehicles, and construction equipment during project implementation. PG&E will review these measures with on-site personnel at the start of the project, and when any new personnel are brought onto the project. The briefing will cover the availability of spill kits, procedures for reporting, and cleanup procedures for the release of hazardous materials, and protocols for handling hazardous materials on site. PG&E will meet all California Division of Occupational Safety and Health (Cal/OSHA) workplace safety standards to ensure worker safety in the handling and use of hazardous materials. These measures will be included in the Worker Environmental Training Program.

APM-HAZ-2: Fire Risk Management
PG&E will implement standard fire prevention procedures, such as keeping appropriate firefighting equipment on site; ensuring consistent access to firefighting equipment; maintaining firefighting equipment in operating condition; ensuring access to a temporary or permanent water supply; locating internal, combustible, engine-powered equipment away from combustible materials, and no smoking will be allowed in project work areas.

8. Hydrology, Water Quality, and Beneficial Uses of Waters of the State

APM-HYDRO-1: Storm Water Pollution Prevention Plan
PG&E will file a notice of intent with the State Water Board for coverage under the General Construction Storm Water Permit and will prepare and implement a SWPPP in accordance with General Order No. 2009-0009-DWQ. Implementation of the SWPPP will help stabilize disturbed areas and reduce erosion and sedimentation. The following measures are generally included in the SWPPP and are consistent with PG&E's standard practices.

- Erosion control devices (ECDs) will be developed to prevent the acceleration of natural erosion and sedimentation rates. A monitoring program will be established to ensure that the prescribed BMPs are followed throughout project construction.
- ECDs will be on site and ready for installation before the start of construction activities;

- All ECDs will be inspected before and after each qualifying storm event, as defined by the State Water Board. ECDs will be maintained regularly and replaced as necessary throughout the course of construction.
- A qualified SWPPP practitioner (QSP) will oversee the implementation of the SWPPP and ECDs.

APM-HYDRO-2: Minimize Ground Disturbance
Ground-disturbing activities, such as grading, blading, and cut-and fill activities, will be minimized to the greatest extent feasible. However, if g ground-disturbing activities are required, they will be limited to the dry season to the greatest extent feasible and measures from the SWPPP will be implemented at all affected locations. Decompaction testing will be conducted, as needed, and post-construction restoration will be implemented, as described in APM-BIO-15.

APM-HYDRO-3: Dewatering
Although excavation activities associated with the project are limited, in the unlikely event that groundwater is encountered, it will be pumped into a baker tank and discharged at an appropriate wastewater facility. Groundwater may also be used to control fugitive dust on site, as needed, and may be dispersed to other vegetated areas, on the condition that the reused groundwater does not result in ponding or flow into areas outside of the proposed construction footprint.

9. Noise

APM-NO-1: Noise Minimization with Portable Barriers
Compressors and other small stationary equipment used during construction will be shielded with portable barriers if the equipment is located near noise-sensitive receptors.

APM-NO-2: Maintain Noise Level Thresholds
While PG&E is not subject to local noise ordinances for project construction, PG&E will make reasonable efforts to maintain noise levels within local jurisdictional standards, which may include implementing alternative construction techniques when feasible, notifying residents in advance of certain construction activities, altering construction hours, or offering residents temporary accommodations during construction activities where noise thresholds are exceeded within the proximity of those residents.

APM-NO-3: Maintain Minimum Distance from Residential Structures
Helicopters will maintain a safe height in accordance with FAA regulations when passing over residential areas, with the exception of when helicopters are at temporary construction areas or actively assisting with the stringing of conductor or other project activities.

10. Recreation

APM-REC-1: Maintain Safe Recreational Access
Where construction will result in temporary closures of parks, open space, or trails, PG&E will provide temporary detours or direct public users to safe areas along the construction zone.

11. Transportation and Traffic

APM-TRA-1: Air Transit Coordination
PG&E will follow the following protocols that pertain to air traffic:

- PG&E will comply with all FAA regulations regarding air traffic within 2 miles from the project alignment and will implement safety measures required by the FAA in response to PG&E's Notices of Proposed Construction or Alteration.
- PG&E will coordinate all project helicopter operations with the local airports and the FAA before and during project construction.
- Residents may be required to temporarily vacate their homes or businesses. If this is necessary, PG&E will coordinate with potentially affected residents or businesses to minimize the duration of the necessary work and any inconvenience.

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CEQA FINDINGS OF FACTS

A. Compliance with California Environmental Quality Act

The State Water Board must comply with the California Environmental Quality Act (CEQA; Pub. Resources Code, Section 21000 et seq.), when issuing an Order.

B. Environmental Document Preparation

For this Project, the State Water Board is acting as lead agency for CEQA compliance, and is therefore responsible for determining the appropriate environmental document based on scientific and factual data, as well as ensuring its preparation. The State Water Board oversaw the preparation of an Initial Study (IS; (Cal. Code Regs., tit. 14, §15063) to determine whether the project would have significant effects on the environment. The IS evaluated the potential for impacts from construction, operation, and maintenance of the Project, which indicated that the Project could have potentially significant effects on the environment, including air quality and greenhouse gas emissions, biological resources, cultural resources, geology and soils, hazards and hazardous material, hydrology and water quality, noise, and transportation and traffic.

Because the IS only identified ***potentially*** significant effects to the environment from the Project, CEQA allows for a Mitigated Negative Declaration (MND) to be adopted, if the Project proponent revises project plans and adopts mitigation measures to eliminate or reduce potential adverse environmental impacts to the point where clearly no significant impact to the environment would occur (Cal. Code Regs., tit. 14, § 15070.) The project proponent must revise the project plans and adopt mitigation measures ***before*** any CEQA documents are released for public review.

The Permittee proposed, and/or agreed to, implementation of a combination of specialized construction techniques, best management practices (BMPs), and applicant-proposed measures (APMs) (see pages 3-17 to 3-26 of the IS/MND for the Project) to reduce environmental effects associated with the Project to less than-significant levels. State Water Board staff consulted extensively with the California Department of Fish and Wildlife (CDFW) when developing the mitigation measures to ensure protection of species and habitat. These changes to the Project were incorporated into the preliminary IS/MND, before the IS/MND was released for public review.

C. Public Notice and Review

Pursuant to CEQA requirements (Cal. Code Regs., tit. 14, § 15072), the State Water Board issued the draft IS/MND for public review on September 16, 2014, and filed a Notice of Intent (NOI) to adopt the IS/MND with the State Clearinghouse (SCH No. 2014092051). SCH distributed the environmental documents to relevant state agencies, departments, boards, and commissions for review and comment. An electronic version of the NOI was distributed to the State Water Board's list of interested parties for the Water Quality Certification Program, affected Regional Water Boards, and state and federal contacts for the Project via email. The NOI and the draft IS/MND were additionally posted and available for downloading on the State Water Board's web site, and could also be reviewed at the State Water Board during normal business hours. The NOI was also posted at County Clerks' Offices for Solano, Napa and Sonoma Counties, and published in the Press Democrat, Napa Valley Register, Daily Republic, and Vacaville Reporter.

The public comment period for the draft IS/MND stretched from September 22, 2014 through October 22, 2014. The State Water Board received no comments from the public or any agency on the draft IS/MND during the public review period.

D. Incorporation by Reference

The final draft IS/MND is incorporated herein by reference and reflects the State Water Board's independent judgment and analysis. The Permittee's application for this Order with all attachments is also incorporated herein by reference, including detailed Project maps, a detailed Project description, copies of information provided to other resource agencies, and other supporting information.

E. Administrative Record

The IS/MND and other materials, which constitute the record that the State Water Board has based its findings on, may be viewed upon request at the State Water Board's office in Sacramento, California. The IS/MND and this Order are also available on the State Water Board's web site at:
http://www.waterboards.ca.gov/water_issues/programs/cwa401/notices/2014/vdlmnd091614.pdf

F. Findings

The IS/MND for the Project identified potential significant effects to the environment within the following resource/impact categories:

1. Air Quality and Greenhouse Gas Emissions;
2. Biological Resources;
3. Cultural Resources;
4. Geology and Soils;
5. Hazards and Hazardous Material;
6. Hydrology and Water Quality;
7. Noise; and
8. Transportation and Traffic.

As stated earlier, the Permittee proposed, and/or agreed to, implementation of a combination of specialized construction techniques, BMPs, and APMs to reduce environmental effects associated with the Project to less than-significant levels. Potentially significant effects, corresponding mitigation measures, and the findings justifying the selection of those measures are located in Section 4 of the IS/MND. Detailed descriptions of those mitigation measures are located in Section 3 of the IS/MND. All identified potentially significant environmental impacts, their associated APMs, and the CEQA findings for each of these impacts are summarized or referenced in Table 1, below.

Table 1: Potentially Significant Impacts, Mitigation Measures, and Findings
General Measures
Note that the General Measures will serve multiple resource protection goals. **APM-GEN-1:** Develop and Implement a Worker Environmental Training Program A worker environmental training program that is specific to the project will be developed.

Each construction and on-site worker will attend the environmental training before starting on-site work. Training will include avoidance and minimization measures that are being implemented to protect biological resources, hydrologic resources, cultural resources, and air quality, as well as manage hazardous materials. The training will also discuss the terms and conditions of any permits or agreements, information on the federal and state Endangered Species Acts, and the consequences of noncompliance with these permits, agreements, and acts. Workers will be informed about the presence, identification, life history, and habitat requirements of the special-status species that have a potential to occur in the project area.

Training will include recognizing and avoiding exclusion areas and sensitive habitat and specific avoidance or minimization measures for sensitive species and habitats. Training also will include information on state and federal laws protecting nesting birds, wetlands, and other water resources. Focused trainings may be directed at an individual's job-specific task, provided that the worker conducts activities within a limited scope (pilots, delivery drivers, site visitors, etc.). The Environmental Inspector will have discretion as to which level of training a worker receives and whether they are required to have an escort (i.e., another person who has received the full environmental training). All trainees will sign a training sign-in sheet, verifying participation.

The environmental training will include avoidance requirements and procedures to be followed if unanticipated cultural resources are discovered during project-related activities, as well as a discussion regarding disciplinary and other actions that may occur when historic preservation laws and PG&E policies are violated. All project workers involved with ground-disturbing activities will receive a pamphlet describing how to identify cultural resources and what to do if an unanticipated discovery is made during construction.

Air Quality and Greenhouse Gas Emissions

Impact 1: Conflict with an applicable air quality plan

Project construction activities would cause temporary and short-term emissions of ozone, particulate matter (PM) less than 10 microns in diameter (PM10), less than 2.5 microns in diameter (PM2.5), nitrogen oxide (NOx), and volatile organic compounds (VOCs). Project-related emissions would occur in areas under the jurisdictions of the Bay Area Air Quality Management District (BAAQMD) and the Yolo-Solano Air Quality Management District (YSAQMD), and could potentially conflict with those air quality plans.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-AQ-2: Minimize Fugitive Dust

PG&E will minimize fugitive dust during construction by implementing the following measures in accordance with the SWPPP:

- Visible dust emissions generated by the project will not exceed 20 percent opacity during the time when soil is disturbed.
- Exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered or covered, as needed, to reduce fugitive dust.
- Haul trucks transporting soil, sand, or other loose material off site will be covered or will be required to maintain at least 1 foot of freeboard.
- Visible mud or dirt track-out onto adjacent paved roads will be removed from active

work areas at the end of each work day.

- Vehicle speeds on unpaved roads with no posted speed limit and rights-of-way will be limited to 15 miles per hour.
- A publicly visible sign with the name and telephone number of the lead agency contact for dust complaints will be posted. The air district's phone number also will be visible on the sign.

PG&E may also temporarily apply gravel or other substrates to control fugitive dust at landing zones or other work areas, as necessary.

Finding: The State Water Board finds project construction emissions would not conflict with any applicable air quality plan with the identified mitigation incorporated, because (1) Emission analysis shows that average daily emissions from the Project meets both BAAQMD and YSAQMD emission thresholds; and (2) APM-AQ-2 includes applicable provisions from the BAAQMD Basic Construction Control Measures, which would fulfill the requirements of the BAAQMD to reduce fugitive dust impacts to a less-than-significant level.

Facts in Support of Finding:

An air quality and GHG emissions analysis for the reconductoring project was conducted using BAAQMD and YSAQMD criteria. BAAQMD's 1999 and proposed 2010 Air Quality Guidelines provide a set of criteria to assist in the preliminary evaluation of impacts on air quality and how to accurately assess and mitigate project-related impacts on air quality. YSAQMD also has developed a 2007 CEQA Handbook to assist lead agencies and project applicants as they prepare air quality analyses. Conservative emissions analyses for the Project were conducted using criteria and guidelines set forth by the BAAQMD and the YSAQMD. Details of the calculations and model outputs are provided in Attachment D to the IS/MND. See also pages 4-10 to 4-17 of the IS/MND.

Impact 2: Violate air quality standards

BAAQMD is currently designated as a nonattainment area for ozone, PM2.5, and PM10, and YSAQMD currently is designated as a nonattainment area for ozone and PM10, under California Ambient Air Quality Standards or National Ambient Air Quality Standards. Project emissions could potentially violate those air quality standards.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-AQ-1: Minimize Vehicle/Equipment Emissions

PG&E will minimize vehicle emissions during construction by implementing the following measures:

- Minimize idling times by shutting equipment off when not in use and by reducing the maximum idling time, as required by applicable California Regulations.
- Maintain and properly tune construction equipment in accordance with manufacturer's specifications.
- Options for reducing the emissions of off-road equipment (more than 50 horsepower) will include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as they become available.

APM-AQ-2: Minimize Fugitive Dust (see above)

Finding: The State Water Board finds that Project-related impacts to air quality standards would be less-than significant with mitigation incorporated, because (1) the emission analysis shows that the low-level Project emissions would not violate air quality standards, or contribute substantially to any existing or project-related air quality violations for criteria pollutants for which the BAAQMD or the YSAQMD currently is designated as a nonattainment area; and (2) Mitigation measures APM-AQ-1 and APM-AQ-2 implements BAAQMD Basic Construction Control Measures, as required.

Facts in Support of Finding: See Facts for Impact 1, above.

Impact 3: Cause cumulative criteria pollutant increases

Project construction would create a temporary increase in criteria air pollutants. BAAQMD and YSAQMD CEQA Guidelines state that project impacts, which are potentially significant to air quality on a project level, also may cause a cumulatively considerable contribution. Without mitigation, the Project could have potentially significant impacts to air quality on a project level.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-AQ-1: Minimize Vehicle/Equipment Emissions (see above)

APM-AQ-2: Minimize Fugitive Dust (see above)

Finding: The State Water Board finds that the Project's contribution to Cumulative Criteria Pollutant Increases would be less-than significant, because with mitigation (APM-GEN-1, APM-AQ-1, and APM-AQ-2), the Project would not have potentially significant impacts on air quality on a project level, and thus would not be considered a potential cause of a cumulatively considerable contribution air pollution.

Facts in Support of Finding: See Facts for Impact 1, above.

Impact 4: Expose Sensitive Receptors

"Sensitive receptor" denotes an area where sensitive humans - especially children, seniors, and sick persons—are located, and where a reasonable expectation exists for continuous human exposure to an air pollutant within air quality standard averaging periods (i.e., 24-hour, 8-hour, and 1-hour). Sensitive receptors typically include homes, hospitals, and schools. About 95 homes are located within 500 feet, and 3 homes within 100 feet, of the project work areas. The inhabitants of these homes would potentially be exposed to temporary increases in air pollutants stemming from dust (such as naturally occurring asbestos) and emissions (such as diesel particulates) from Project activities.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-AQ-1: Minimize Vehicle/Equipment Emissions (see above)

APM-AQ-2: Minimize Fugitive Dust (see above)

Finding: The State Water Board finds that the Project's contribution to Cumulative Criteria Pollutant Increases would be less-than significant, because (1) sensitive receptors exposures would be limited to construction areas where active construction typically would last 1-20 days; (2) APM-AQ-1 would minimize vehicle and equipment emissions; (3) APM-AQ-2 would minimize fugitive dust; and (4) Project construction areas do not contain naturally occurring asbestos.

Facts in Support of Finding: See Facts for Impact 1, above.

Biological Resources

Impact 5: Effect a candidate, sensitive, or special status species

A total of 77 special-status species (42 plant and 35 animal species) were found to have the potential to occur in the vicinity of the Project, and could potentially be adversely affected by the Project if no mitigation measures were incorporated.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-BIO-1:

a. Approval of Biological Monitors: At least 30 days before starting construction activities PG&E shall submit to California Department of Fish and Wildlife (CDFW) in writing the names and qualifications of biologists (Designated Biologists) assigned to this project. PG&E shall obtain CDFW approval of any Designated Biologists in writing before starting construction activities, and shall also obtain approval in advance in writing if any Designated Biologists are changed or added. PG&E shall ensure that the Designated Biologists are knowledgeable and experienced in the biology and natural history of animal and plant that may be present at the project area. The Designated Biologists shall be responsible for monitoring construction activities to minimize and avoid take of biota and to minimize disturbance of habitats.

   Lead Biologist: One Designated Biologist shall be appointed Lead Biologist and that individual shall be responsible for oversight of the Designated Biologists, coordination of biological issues with all parties working on the project, record keeping, reports and monitoring site compliance with the terms of this Agreement. In some instances, approval of Designated Biologists by CDFW may require that they work under the supervision of the Lead Biologist.

   Quantity of Designated Biologists On-Site: The PG&E shall have a sufficient number of Designated Biologists on-site to ensure all phases of construction activities are monitored to minimize and avoid project impacts as required in the applicant proposed measures and applicable federal and state permits.

b. Assign a Biological Monitor to be On Site during Construction Activities: A biological monitor will monitor construction activities that have the potential to affect special-status species or other sensitive resources. The monitors(s) will ensure implementation and compliance with the resource-specific avoidance and minimization measures. Each monitor will have the authority to temporarily halt or redirect work or determine alternative work practices with construction workers, as appropriate, if construction activities are likely to impact sensitive biological resources.

If a special-status wildlife species is encountered during construction, project activities will cease in the area where the species is found until the biologist, with prior authorization from USFWS and/or CDFW, in accordance with the species state or federal listing, relocates the species out of harm's way and/or takes other appropriate steps previously authorized by USFWS and/or CDFW to protect the wildlife. Work may resume once the biological monitor has determined that construction activities will not harm the wildlife. No pursuit, capture or harm to state fully protected species will be allowed; state fully protected species will be allowed to leave project areas under their own volition.

APM-BIO-2: Restrict Work Area and Access Routes

Vehicles will be confined to established roadways and pull-outs, and pre-approved access roads, overland routes, turn-outs, project work areas, PG&E-owned facilities, and access areas.

APM-BIO-3: Maintain Equipment and Follow Refueling Directives

All equipment will be maintained to avoid leaks of automotive fluids, such as fuels, solvents, or oils. Staging and storage areas for equipment, materials, fuels, lubricants, and solvents shall be located more than 100 feet from stream channel and banks. All equipment and fuel stored on-site shall be bermed to contain any spilled material and shall be protected from rain. Berms shall consist of plastic covered dirt or sand bags.

APM-BIO-4: Avoid Impacts on Special- Status Plant Populations

Special-status plant populations previously identified during the field surveys within or adjacent to project work areas will be surveyed prior to construction, as necessary, to determine the extent of the current populations. All locations currently supporting or previously observed in all planning and preconstruction botanical surveys to support special-status plant populations will be flagged. During these surveys, special-status plant populations as described above that have the potential to be impacted will be mapped and flagged and/or identified with signage for avoidance. Surveys will be conducted during the appropriate blooming period for each special-status plant species previously identified within the project area and maps will be updated to reflect any plant species detected. If work must occur before the next blooming season and ground disturbance must occur in previously known special-status plant areas, then those areas will be treated as if the plant is present (i.e., topsoil segregation). Should grading work be required within occupied habitat, up to the top 6 inches or other feasible amount will be stored separately on site, protected from exotic weeds, and replaced following completion of the project. Provisions for disturbed populations will be addressed in the Mitigation and Restoration Plan. The Mitigation and Restoration Plan will address how water conservation will be practiced in the event drought conditions persist.

APM-BIO-5: Conduct Pre-Construction Surveys and Establish Work Exclusion Areas

a. Burrowing species: A biologist will conduct pre-construction surveys no more than 2 weeks before the start of construction activities at scheduled work locations. During these surveys, the biologist will note any potential burrowing owl or American badger burrows within 250 feet of the project. The biologist will confirm or readjust the boundaries of specific temporary work areas based on any sensitive resources that are present, and will determine if additional targeted resource surveys are needed to verify the status of burrowing owl, American badger, or other special-status species that have the potential to occur within the project area.

b. Foothill yellow-legged frog (FYLF): Immediately prior to the start of any work within 50

feet of suitable habitat, the on-site biologist will conduct a visual survey of the work area for the presence of FYLF. If a FYLF is found within the work area, it will be relocated, if necessary, by the Biological Monitor to nearby suitable habitat outside of the active work area. Any relocation will be reported to CDFW.

c. Western pond turtle: Immediately prior to the start of any work within 50 feet of suitable habitat, the on-site biologist will conduct a visual survey of the work area for the presence of western pond turtle. If a western pond turtle is found within the work area, it will be relocated, if necessary, by the Biological Monitor to nearby suitable habitat outside of the active work area. Any relocation will be reported to CDFW.

d. California red-legged frog (CRLF): Immediately prior to the start of activities in suitable CRLF habitat—from Tower Work Area 98 to Tower Work Area 109 in Napa County and from Tower Work Area 157 to Lakeville Substation—a USFWS-approved biologist will conduct a daily pre-construction survey for CRLF. During the wet season (November 1 to April 14), the pre-construction survey within these areas will include all locations where work will occur that day. During the dry season, the survey area will be limited to work locations within 300 feet of suitable aquatic habitat for CRLF. Wet season windows for surveys may be advanced or set back by up to 30 days depending on actual precipitation event occurrences (greater than 0.5 inches within a 24-hour window) during season of construction if authorized by CDFW and SWRCB.

APM-BIO-6: Avoid Impacts on Wetlands and Streams

Prior to the initiation of construction in areas containing or adjacent to streams or wetlands, the work areas will be surveyed by a biologist and flagged for avoidance. Exclusionary buffers will be established around wetlands and streams, as necessary. Wetlands and streams will be avoided to the maximum extent feasible. In the event that avoidance is not feasible and if work should occur in wetlands and streams, PG&E will implement BMPs including, but not limited to: temporarily placing wooden, fiber, or metal mats or portable bridges at stream and wetland crossings to minimize downstream sedimentation, rutting of soils, and ground disturbance. PG&E will also prepare a Land Form and Grading Plan, to be approved by the SWRCB, which will outline guidelines for access road and site disturbance to minimize run-off and erosion. PG&E will also restore impacted wetlands and streams to pre-construction conditions, as described in APM-BIO-15.

APM-BIO-7: Avoid Impacts on Valley Elderberry Longhorn Beetle

In accordance with PG&E's existing Programmatic Biological Opinion, all elderberry plants with a stem diameter greater than 1 inch that have been identified during pre-construction surveys in the project area, within the range of valley elderberry longhorn beetle (VELB), will be mapped before the start of construction; any elderberry bushes within 20 feet of planned work activities will be flagged for avoidance (PG&E VELB Environmental Compliance Program 2007). Should impacts on elderberry bushes be unavoidable, the impacts will be documented in accordance with the Programmatic Biological Opinion.

APM-BIO-8: Avoid Wildlife Entrapment

Temporary excavations, including but not limited to pole excavations for crossing structures, that may act as pitfall traps (i.e., those exceeding 6 inches in depth) will be securely covered at the end of each work day or escape ramps will be provided at linear intervals not exceeding 10 feet. Existing pole excavations will be inspected before they are filled to verify the absence of wildlife. If wildlife becomes entrapped in an excavation, work will be halted, the biological monitor will be contacted, and the species will be

rescued. The incident will be reported to the appropriate agencies in compliance with project authorizations.

APM-BIO-9: Allow Only Specified Erosion Control Materials

To avoid impacting special-status reptile and amphibian species—including California red-legged frog, foothill yellow-legged frog, and western pond turtle—only tightly woven netting or similar material, such as natural fiber rolls and geotextiles, will be used for erosion control within or adjacent to suitable habitat. No plastic monofilament netting will be used in these areas.

APM-BIO-10: Avoid Impacts on Nesting Birds

If work is scheduled to occur during the avian nesting season (March 1 through August 31), nest detection surveys will be conducted no more than 15 days prior to initial work activities at designated construction areas and towers to determine nesting status in the area. Nest surveys will be accomplished by ground surveys and/or by helicopter and will support phased construction, with surveys scheduled to be repeated if construction lapses in a work area for 30 days between March and July. Nest surveys will follow standard biological survey methods, and survey efforts will be tailored by project location, with visits planned at appropriate timeframes/ intervals to detect nesting activity. In addition, biologists monitoring construction will conduct nest surveys and/or nest monitoring in areas adjacent to ongoing construction. If nests are found, the project biologist will establish an appropriate buffer to be in compliance with the Migratory Bird Treaty Act (MBTA) and Fish and Game Code 3503. PG&E will apply standardized species-specific no activity buffers developed as part of PG&E's avian management plan. Nest building activities will be periodically monitored, recorded and assessed for protection measures. Active nests (defined as the presence of chicks and/or eggs) will be monitored and exclusion buffer sizes increased if the monitoring biologist determines this is necessary based on disturbance behavior exhibited by nesting birds in proximity to project construction. Nesting pair acclimation to disturbance in areas with regularly occurring human activities will be considered when establishing no activity nest buffers. Per the discretion of the biological monitor, vegetation removal by hand may be allowed within nest buffers or in areas of potential nesting activity. These activities shall be closely monitored to ensure that active nests are not disturbed. Abnormal nesting behaviors include, but are not limited to, defensive flights/vocalizations directed towards project personnel, standing up from a brooding position, and flying away from the nest. The biological monitor will have authority to order the cessation of all nearby project activities if the nesting bird's exhibit abnormal behavior which may cause reproductive failure (nest abandonment and loss of eggs and/or young) until an appropriate buffer is established. To prevent encroachment, the established buffer(s) will be clearly marked for avoidance. The established buffer(s) will remain in effect until the young have fledged or the nest is no longer active as confirmed by the biological monitor.

Helicopter restrictions will include observance of appropriate established buffers and avoidance of hovering in the vicinity of active nest sites. Helicopter flight restrictions may be in effect for densely populated residential areas, and nest surveys by ground in populated areas, such as in backyards, will be subject to property access permissions.

APM-BIO-11: Avoid Impacts on Burrowing Owl

No project-related disturbance will occur within buffers established in accordance with APM-BIO-10 of occupied burrowing owl burrows during the non-breeding season (September 1 through January 31), with appropriate adjustments during the breeding

season (February 1 through August 31). The limits of the exclusion zone in the project area will be marked with staking, posts, or flagging. If construction activities must occur within these limits while burrows are active, a site-specific work plan, including onsite monitors, will be prepared and work will take place only in the presence of biological monitor. Compliance with the MBTA and Fish and Game Code 3503 shall be maintained.

APM-BIO-12: Avoid Impacts on Eagle and Swainson's Hawk Nests

If work is conducted during the nesting season, a pre-construction survey to assess the status of known golden eagle, bald eagle, and Swainson's hawk nest sites in the project area will be conducted by a biologist before the start of construction. These surveys will be conducted at appropriate seasonal times and/or will be repeated as necessary to identify active nests throughout the nesting season. A 0.5-mile exclusionary buffer will be implemented around active eagle or Swainson's hawk nest sites. The buffers around active Swainson's hawk nests may be reduced to 0.25 mile if observations by the biological monitor determine that project activities will not disturb nesting activities. This determination will be made based on nest location, tolerance of human disturbances, topography, vegetative screening, and the work activities planned. If the 0.25-mile buffer needs to be breached, prior to the break, CDFW and/or USFWS will be consulted.

APM-BIO-13: Avoid Impacts on Roosting Bats

A survey for special-status bats, including western red bat and pallid bat, will be conducted at appropriate timeframes to detect bats prior to the removal of potential special-status bat roosting habitat, which includes, but is not limited to, the removal or trimming of large trees, snags, or riparian trees, or the presence of structures that could support bats, as identified by a biologist. The survey will include the work location and an area up to 200 feet around the work areas in suitable habitat. If an active roost is detected, a 100 foot buffer will be established around the roost and a qualified biologist will periodically monitor the site. If this avoidance strategy is not practicable, an alternative plan will be developed in consultation with CDFW. Any planned tree removal in suitable habitat will be assessed for the presence of western red bats and the following procedures will be followed. To the maximum extent feasible, tree removal or trimming activities will only occur between September and April (not during the maternity season – May through August). In suitable habitat, any trees, snags, or stumps planned for removal or significant trimming will be removed on warm days between late morning and early afternoon when any bats present are likely to be warm. Noise and vibration disturbance will be created on the tree, and potential crevices and cavities will be carefully opened and inspected by a qualified biologist for the presence of bats. If bats are suspected within trunk or limb tree cavities, attempts will be made to expose any bats to allow escape, by successively cutting sections above the cavity to open it, and pausing 10 minutes between cuts to inspect and determine if bats are present. If bats may occur in branches that can be removed from the tree intact and set aside, the removed branches will be carefully removed and set upright to allow bats to passively escape. Active maternity colonies of western red bats are not anticipated in the project area given the known maternity range for this species, but should a bat nursery occur, disturbance will be avoided by establishment of appropriate buffers (approximately 100 to 200 feet) until it is determined that breeding is complete and the young are mature and flight-capable.

APM-BIO-14: Avoid and Minimize Impacts on Critical Habitat and Sensitive Natural Communities

If construction work will be conducted within USFWS-designated critical habitat or near sensitive natural communities—including brackish marsh, wetlands, streams, vernal

pools, and native grasslands—the boundaries of the work area adjacent to sensitive vegetation areas will be delineated with visible flagging or fencing, or otherwise marked by a biologist as exclusion zones, prior to the start of construction in those areas. The flagging, fencing, and/or other marking will be maintained in place for the duration of construction at each location. Should work be necessary within sensitive natural communities, measures— including cleaning construction equipment of dirt and vegetation before entry and requiring that only weed-free materials be utilized—will be implemented to avoid the introduction of noxious weeds. Only project personnel entering by foot will be allowed within vernal pool habitat.

APM-BIO-15: Restore Sites Disturbed by Construction

Before construction begins, a Mitigation and Restoration Plan will be prepared by a restoration ecologist and submitted to the State Water Board and CDFW for approval. This process will be augmented by measures to protect fish and wildlife resources that are generated within specific Lake and Streambed Alteration Agreements with CDFW. The Restoration Plan will include post-construction plans for restoring construction work areas to preconstruction conditions through recontouring, erosion control, removal of construction debris, and decompacting soil. The Restoration Plan will also provide seasonal and/or weather constraints associated with driving through dry stream crossings. Restoration work may also include such activities as replanting or reseeding of native species, or using a seed mix that is consistent with agricultural/ranching operations and complements nearby habitat type(s) or agricultural conditions.

The Mitigation and Restoration Plan will also specify requirements to document the existing conditions of work areas and overland travel routes prior to construction, including preconstruction photo documentation, which will be conducted by a biologist. Specifically, wetlands and streams impacted by crossing improvements or used during construction will be photodocumented prior to construction. Once restoration work is completed, a biologist will conduct post-construction photo documentation of the crossing location sites to ensure they have returned to approximate pre-construction conditions.

APM-BIO-16: California Red-Legged Frog Exclusion Fencing

If major ground-disturbing work will occur within suitable CRLF habitat (from Tower Work Area 98 to Tower Work Area 109 in Napa County and from Tower Work Area 157 to Lakeville Substation) during the wet season (defined as November 1 to April 14), exclusion fencing may be installed around the perimeter of work areas to exclude CRLF from these areas. The fencing, which can be made of wood, geotextile fabric, or other durable material, will be a minimum of 3 feet in height and will be buried at least 4 inches underground. Gates will be installed to allow vehicles to enter from access roads. These gates will be kept closed (to the extent practicable) during construction, and will be closed at the end of each work day. Exit funnels may be installed, where appropriate, to allow small vertebrates to leave the work area unharmed. The exclusion fencing will remain in place for the duration of construction activities—if located within 300 feet of suitable aquatic habitat for CRLF—or for the duration of the wet season only if no suitable aquatic habitat is present. A biological monitor will regularly check that the fence is functioning properly and will check for the presence of sensitive species. A biological monitor will check the fences daily during any rain events of 0.25 inch or greater and within 48 hours after a rain event of 0.25 inch or greater, on days where construction is occurring at the fenced work area.

APM-BIO-17: Minimize Impacts to Steelhead

Work within stream channels upstream of areas where steelhead may be present will be conducted during the dry season when water is absent. These areas include tributaries to Encinosa Creek, tributaries to Ulatis Creek, Laguna Creek and its tributaries, tributaries to Green Valley Creek, tributaries to Dug Road Creek, and tributaries to the Petaluma River. Rock fill or riprap used for culverts or plating will consist of appropriate masonry material that is free of debris or pollutants. PG&E will develop and implement site-specific BMPs a part of the SWPPP to prevent erosion and sedimentation during construction. The size, quantity, and placement of rock fill will be appropriate to maintain normal stream flows, prevent scouring and erosion, and avoid impeding the passage of aquatic organisms.

APM-BIO-18: Nighttime Lighting

Temporary lighting required for nighttime construction will be directed away from known nest locations, bat roosts, and other sensitive biological resources. The minimum amount of lighting necessary for nighttime construction will be used. Nest locations and other sensitive biological resources will be flagged in the field and a biologist will provide a tailboard training describing the locations to crewpersons near the work site before lighting is installed. CDFW approval will be necessary for instances when PG&E needs to operate heavy equipment after 11:00 PM for more than three consecutive nights or more than five nights a month.

APM-BIO-19: Compensatory Mitigation Approval

Prior to initiation of construction, PG&E will provide a compensatory mitigation strategy in a Restoration and Mitigation Plan to CDFW and SWRCB for approval to offset temporary and permanent impacts to sensitive species habitat, aquatic resources and riparian habitat, and sensitive natural communities. Compensatory mitigation may include purchase of mitigation credits at a state or federal approved mitigation bank, in lieu fee program, or onsite/ offsite restoration that improves ecological features of the impacted resource. PG&E will not begin construction until written approval is received from CDFW and SWRCB for this plan.

Finding: The State Water Board finds that Project-related impacts to candidate, sensitive, or special status species would be less-than significant with the above-mentioned mitigation measures incorporated. The California Department of Fish and Wildlife (CDFW), as a trustee agency, was consulted frequently regarding the APMs and concurs with this analysis and conclusion.

Facts in Support of Finding: See pages 4-18 to 4-52 of the IS/MND.

Impact 6: Effect sensitive natural communities

Three sensitive natural communities, as identified by the CDFW, occur in the project area: northern hardpan vernal pool, coastal brackish marsh, and native grassland. The project corridor also crosses several riparian corridors, seasonal wetlands, streams, and other aquatic resources, which may be considered sensitive natural habitat due to their hydrologic function and/or suitability for sensitive species.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-BIO-1: Biological Monitors (see above)

APM-BIO-2: Restrict Work Area and Access Routes (see above)

APM-BIO-5: Conduct Pre-Construction Surveys and Establish Work Exclusion Areas (see above)

APM-BIO-6: Avoid Impacts on Wetlands and Streams (see above)

APM-BIO-14: Avoid and Minimize Impacts on Critical Habitat and Sensitive Natural Communities (see above)

APM-BIO-15: Restore Sites Disturbed by Construction (see above)

APM-BIO-19: Compensatory Mitigation Approval (see above)

APM-HYDRO-2: Minimize Ground Disturbance

Ground-disturbing activities, such as grading, blading, and cut-and fill activities, will be minimized to the greatest extent feasible. However, if ground-disturbing activities are required, they will be limited to the dry season to the greatest extent feasible and measures from the SWPPP will be implemented at all affected locations. Decompaction testing will be conducted, as needed, and post-construction restoration will be implemented, as described in APM-BIO-15.

Finding: Ground disturbance of vernal pool and coastal brackish marsh habitat would be avoided, per APM-BIO-2 and APM-BIO-14, by conducting all construction work with a helicopter or on foot. Temporary impacts on native grasslands would occur at Tower 110, where overland access and project work areas within these habitats would be necessary. However, the Permittee would confine project work areas to the minimum acreage needed per APM-BIO-2 and APM-BIO-14. After construction, PG&E would implement APM-BIO-15, to promote site restoration in locations where temporary impacts occurred through reseeding, recontouring, and/or other means. Topsoil would be preserved in this area as well, to promote regeneration of this habitat type.

Tree trimming and removal of oaks within project work areas or along access roads may be necessary in some locations, but impacts are anticipated to be isolated to individual trees and would not require removal of substantial tracts of woodland habitat. Pull sites and landing zones were specifically situated in open areas that are free of oak trees, to minimize the need for trimming or removal. If mitigation is warranted for impacts to specific oak trees, it would be developed in coordination with the CDFW before beginning construction.

As described in detail in section VII of this Order, temporary and permanent impacts to streams and wetlands could occur due to proposed stream crossing improvements and the installation of guard structures. Impacts to streams and wetlands would be avoided and minimized to the extent possible per APM-BIO-2 and APM-BIO-6. Per APM-HYDRO-2, ground-disturbing activities will be limited to the dry season to the greatest extent feasible and measures from the SWPPP will be implemented at all affected locations. Disturbed sites will be restored per APM-BIO-15 and the Restoration and Compensatory Mitigation Plan in Attachment C. Compensatory mitigation is required for unavoidable impacts per APM-BIO-19 and Attachment C.

The State Water Board finds that Project-related impacts to sensitive natural communities would be less-than significant with the above-mentioned mitigation incorporated.

Facts in Support of Finding: See pages 4-18 to 4-52 of the IS/MND.

Impact 7: Effect federally protected wetlands

Approximately six crossings improvements occur within seasonal wetlands and five of these wetlands would be permanently impacted (0.04 acre) through the installation of new culverts, replacement or modification of existing culverts, and placement of rock rip rap.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-BIO-1: Biological Monitors (see above)

APM-BIO-2: Restrict Work Area and Access Routes (see above)

APM-BIO-3: Maintain Equipment and Follow Refueling Directives (see above)

APM-BIO-6: Avoid Impacts on Wetlands and Streams (see above)

APM-BIO-15: Restore Sites Disturbed by Construction (see above)

APM-BIO-19: Compensatory Mitigation Approval (see above)

APM-HYDRO-1: Storm water Pollution Prevention Plan (SWPPP)

The Permittee will file a notice of intent with the State Water Board for coverage under the General Construction Storm Water Permit and will prepare and implement a SWPPP in accordance with General Order No. 2009-0009-DWQ. Implementation of the SWPPP will help stabilize disturbed areas and reduce erosion and sedimentation. The following measures are generally included in the SWPPP and are consistent with the Permittee s standard practices.

- Erosion control devices (ECDs) will be developed to prevent the acceleration of natural erosion and sedimentation rates. A monitoring program will be established to ensure that the prescribed BMPs are followed throughout project construction.
- ECDs will be on site and ready for installation before the start of construction activities;
- All ECDs will be inspected before and after each qualifying storm event, as defined by the State Water Board. ECDs will be maintained regularly and replaced as necessary throughout the course of construction.
- A qualified SWPPP practitioner (QSP) will oversee the implementation of the SWPPP and ECDs.

APM-HYDRO-2: Minimize Ground Disturbance

Finding:

As described in detail in section VII of this Order, temporary and permanent impacts to wetlands could occur due to proposed stream crossing improvements and the installation of guard structures. Impacts to streams and wetlands would be avoided and minimized to the extent possible per APM-BIO-2 and APM-BIO-6. The Permittee would implement APM-BIO-6 to install BMPs such as matting, APM-HYDRO-1 to prepare and implement a SWPPP, and APM-HYDRO-2 to minimize soil disturbance during the wet season. Disturbed sites will be restored per APM-BIO-15 and the Restoration and Compensatory Mitigation Plan in Attachment C. Compensatory mitigation is required for unavoidable impacts per APM-BIO-19 and Attachment C. The State Water Board finds that Project-related impacts to wetlands would be less-than significant with mitigation incorporated.

Facts in Support of Finding: See pages 4-18 to 4-52 of the IS/MND.

Cultural and Paleontological Resources

Impact 8: Effect an archaeological resource

Twenty-nine archaeological resources are located in the existing transmission line corridor or near access roads, helicopter landing zones, or work areas of the Project.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-CU-1: Archaeological Site Avoidance

> Archaeological sites and isolates are within the reconductoring project area. To avoid inadvertent damage to these sites during project implementation, work area limits adjacent to known sites will be clearly marked with visible flagging tape, and construction crews will be instructed that no vehicle access, travel, equipment staging and storage, or other construction-related activities are allowed outside designated work areas.

APM-CU-2: Management of Unanticipated Discoveries

> Construction activities may inadvertently uncover previously unrecorded cultural resources. If cultural resources are inadvertently discovered during construction activities, all activities will be halted within one hundred (100) feet of the discovery and a PG&E cultural resources specialist will be contacted to assess its significance.

Finding: Mitigation measure APM-CU-1 will be implemented to avoid impacting archaeological sites. APM-GEN-1 will require workers to receive training regarding the protection of archaeological resources, as well as procedures per APM-CU-2 to be followed if an archaeological resource is encountered during ground-disturbing activities. The State Water Board therefore finds that impacts to archaeological resources would be less than significant with mitigation incorporated.

Facts in Support of Finding: See pages 4-53 to 4-58 of the IS/MND.

Impact 9: Destroy a unique paleontological resource or unique geologic feature

The Pleistocene alluvium in ten localities in Solano County and nine localities in Sonoma County within the Project area is considered to be a paleontologically sensitive rock formation, because these deposits are known to contain the remains of land mammals such as saber-toothed cat, mammoth, horse, camel, antelope, and hundreds of other species.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-CU-3: Treatment of Paleontological Discoveries

> If fossil remains are uncovered during project construction, all work within 50 feet of the discovery will be halted, and the construction crew will immediately notify PG&E. PG&E will contact a paleontologist who will evaluate the resource and will prepare a treatment plan in accordance with Society of Vertebrate Paleontology Guidelines (1996). Components of the treatment plan related to “unique” fossil specimens that are encountered during construction may include a field survey, additional construction monitoring, specific sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings.

Finding: Project work would include minimal to no ground-disturbing activities, and would therefore be unlikely to have an adverse effect on unique paleontological resources. In the event that any paleontological resources are encountered during ground-disturbing activities, the Permittee would implement APM-CU-3, which would require halting work within 50 feet of the resource, an evaluation of the resource by a paleontologist, and implementing a paleontological resources treatment plan if warranted. The State Water Board therefore finds that impacts to paleontological resources or unique geologic features would be less than significant with mitigation incorporated.

Facts in Support of Finding: See pages 4-53 to 4-58 of the IS/MND.

Impact 10: Disturb human remains

Evidence exists that human remains may be located in the project area and unknown prehistoric burials may be uncovered during project construction.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-CU-4: Treatment of Human Remains

If any human remains are inadvertently discovered during construction activities, all activities will be halted within one hundred (100) feet of the discovery and a PG&E cultural resources specialist will be contacted to conduct an assessment. The PG&E cultural resources specialist will contact the county coroner, if necessary, following the California Health and Safety Code, Section 7050.5. If the human remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, who will notify and appoint a Most Likely Descendent (MLD). The Permittee and the MLD will determine how to treat human remains. No work may proceed within 100 feet of the site until treatment of the remains is complete or permission from the PG&E cultural resources specialist has been received.

Finding: APM-CU-4 would require treatment of human remains in accordance with state laws and regulations. If any suspected human remains are inadvertently discovered during project construction, all activities would be halted within one hundred (100) feet of the discovery until a cultural resources specialist can assess the find. If the remains are determined to be human, per APM-CU-4, the county coroner and NAHC would also be contacted to make recommendations regarding the treatment and disposition of the remains. The State Water Board therefore finds that potential impacts to human remains would be less than significant with mitigation incorporated.

Facts in Support of Finding: See pages 4-53 to 4-58 of the IS/MND.

Geology and Soils

Impact 11: Result in substantial soil erosion or the loss of topsoil

Installation of the new tubular steel pole within Tulucay Substation requires excavation for a new concrete footing. In addition, minimal grading and vegetation clearing may be required to establish crane pads, helicopter landing zones, pull sites, and access roads. Small, temporary stockpiles of excavated dirt may be located near the excavations for the guard structures and snub poles. Various overland access routes would be used for tower and/or

work area access, which may result in the exposure of highly erodible soils.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-BIO-2: Restrict Work Area and Access Routes (see above)

APM-BIO-6: Avoid Impacts on Wetlands and Streams (see above)

APM-BIO-15: Restore Sites Disturbed by Construction (see above)

APM-HYDRO-1: SWPPP (see above)

APM-HYDRO-2: Minimize Ground Disturbance (see above)

Finding: APM-BIO-2 will limit vehicles to established roadways and pull-outs, and pre-approved access roads, overland routes, turn-outs, Project work areas, Permittee-owned facilities, and access areas during Project construction to minimize extent and impact of access roads. Transmission tower modifications will be conducted to the extent possible by helicopter and by making use of an existing network of roads to access most of the transmission corridor within the Project area. Most proposed construction yards and material storage areas have been previously disturbed; thus, limited or no site preparation is expected to be necessary at these sites. The Permittee has prepared a Land Form and Grading Plan, which outline guidelines for access road and site disturbance to minimize run-off and erosion. Exposed surfaces (e.g., parking areas, staging areas, dirt piles, graded areas, and unpaved access roads) will be watered or covered, as needed, to reduce fugitive dust and erosion. During clearing activities, vegetation will be mowed or grubbed, leaving root systems intact wherever possible, to encourage resprouting and minimize erosion. The Permittee would implement APM-BIO-6 to install BMPs such as matting to prevent erosion in wet areas, APM-HYDRO-1 to prepare and implement a SWPPP, and APM-HYDRO-2 to minimize soil disturbance during the wet season. Disturbed sites will be restored per APM-BIO-15 and the Restoration and Compensatory Mitigation Plan in Attachment C. The stockpiles will be located would be located away from and/or downgradient from waterways, and other sediment control BMPs will be developed and implemented as described in the SWPPP (APM-HYDRO-1). The Permittee will install Erosion Control Devices (ECDs) to prevent the acceleration of natural erosion and sedimentation rates. A monitoring program will be established to ensure that the prescribed BMPs are followed throughout project construction. ECDs will be on site and ready for installation before the start of construction activities and will be inspected before and after each qualifying storm event. ECDs will be maintained regularly and replaced as necessary throughout the course of construction. Construction debris would be transported on a line truck with a trailer to an area service center as needed for recycling or disposal. The State Water Board therefore finds that the Project's potential to result in substantial erosion or loss of topsoil is would be less-than significant with the above-mentioned mitigation incorporated.

Facts in Support of Finding: See pages 4-59 to 4-63 of the IS/MND.

Hazards and Hazardous Materials

Impact 12: Create a significant hazard through the routine transport, use, or disposal of hazardous materials

Project construction activities generally would not pose a hazardous materials risk; however, construction equipment would require refueling and periodic maintenance. Routine transport,

use, and disposal of hazardous materials such as fuels, lubricating oil, and hydraulic fluid during construction potentially could result in releases of these materials.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-HYDRO-1: SWPPP (see above)

APM-HAZ-1: Hazardous Materials Management

To minimize the potential for release of hazardous materials and risk of upset, the Permittee will adhere to the measures detailed in the SWPPP for storage, refueling, and maintenance of helicopters, construction vehicles, and construction equipment during project implementation. The Permittee will review these measures with on-site personnel at the start of the project, and when any new personnel are brought onto the project. The briefing will cover the availability of spill kits, procedures for reporting, and cleanup procedures for the release of hazardous materials, and protocols for handling hazardous materials on site. The Permittee will meet all California Division of Occupational Safety and Health (Cal/OSHA) workplace safety standards to ensure worker safety in the handling and use of hazardous materials. These measures will be included in the Worker Environmental Training Program.

APM-HAZ-2: Fire Risk Management

The Permittee will implement standard fire prevention procedures, such as keeping appropriate firefighting equipment on site; ensuring consistent access to firefighting equipment; maintaining firefighting equipment in operating condition; ensuring access to a temporary or permanent water supply; locating internal, combustible, engine-powered equipment away from combustible materials, and no smoking will be allowed in project work areas.

Finding:

Project activities would be conducted in accordance with BMPs in the SWPPP (see APM-HYDRO-1). Proper handling of hazardous materials and spills would occur in accordance with the applicable laws and regulations. APM-HAZ-1 would require the Permittee to use standard operating procedures for storage, refueling, and maintenance of helicopters, construction vehicles, and equipment, and meet Cal/OSHA workplace safety standards. APM-HAZ-2 implements standard fire prevention procedures to prevent and fight combustion of hazardous materials. The State Water Board therefore finds that potential impacts related to the routine transport, use, or disposal of hazardous materials would be less-than significant with the above-mentioned mitigation incorporated.

Facts in Support of Finding: See pages 4-64 to 4-68 of the IS/MND.

Impact 13: Create a significant hazard through reasonably foreseeable upset involving the release of hazardous materials into the environment

Hazardous materials, such as fuels, lubricating oil, and hydraulic fluid used for refueling and periodic maintenance of construction equipment, could potentially be released into the environment by accident during Project construction.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-HYDRO-1: SWPPP (see above)

APM-HAZ-1: Hazardous Materials Management

Finding:

The volume of hazardous materials that would be used during construction would be relatively small and all spills would be controlled and contained immediately. Project activities would be conducted in accordance with BMPs in the SWPPP (see APM-HYDRO-1). Proper handling of hazardous materials and spills would occur in accordance with the applicable laws and regulations. APM-HAZ-1 would require the Permittee to use standard operating procedures for storage, refueling, and maintenance of helicopters, construction vehicles, and equipment, and meet Cal/OSHA workplace safety standards. The State Water Board therefore finds that potential impacts related to the routine transport, use, or disposal of hazardous materials would be less-than significant with the above-mentioned mitigation incorporated.

Facts in Support of Finding: See pages 4-64 to 4-68 of the IS/MND.

Impact 14: Create public airport hazards

Five airports are located within two miles of the existing transmission line corridor: Petaluma Municipal Airport, Sonoma Skypark Airport, Sonoma Valley Airport, Napa County Airport, and Nut Tree Airport, which could potentially be affected by the Project. The Project includes raising thirty-nine existing towers by a maximum of 16.5 feet. In addition, the Permittee would use helicopters extensively during Project construction.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-TRA-1: Air Transit Coordination

The Permittee will follow the following protocols that pertain to air traffic:

- The Permittee will comply with all FAA regulations regarding air traffic within 2 miles from the project alignment and will implement safety measures required by the FAA in response to PG&E's Notices of Proposed Construction or Alteration.
- The Permittee will coordinate all project helicopter operations with the local airports and the FAA before and during project construction.
- Residents may be required to temporarily vacate their homes or businesses. If this is necessary, The Permittee will coordinate with potentially affected residents or businesses to minimize the duration of the necessary work and any inconvenience.

Finding:

No new towers would be installed as a part of the Project. Several of the towers proposed to be raised would exceed the Notice Criteria specified in FAA Regulations and Title 14 CFR, Section 77.9. The Permittee has submitted the required Notice of Proposed Construction and Alteration Application to the FAA for any towers that would be raised and would exceed the Notice Criteria. As described in APM-TRA-1, PG&E would implement any measures required

by the FAA in response to the Notice Criteria, and coordinate with local airports regarding helicopter operations and flight plans during project construction. The State Water Board therefore finds that potential impacts related to public airport hazards would be less-than significant with the above-mentioned mitigation incorporated.

Facts in Support of Finding: See pages 4-64 to 4-68 of the IS/MND.

Impact 15: Create wildfire hazards

The existing transmission corridor crosses open grass and oak woodland areas that are susceptible to wildland fires, including areas defined by California Department of Forest and Fire Protection (CALFIRE) as a moderate or high fire hazard zone. Heat or sparks from construction vehicles or equipment have the potential to ignite dry vegetation and could cause a fire.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-HAZ-2: Fire Risk Management

Finding:

The Permittee would implement standard fire prevention procedures, as described in APM-HAZ-2, thereby reducing potential effects related to wildland fires. The State Water Board therefore finds that potential impacts related to wildfire hazards would be less-than significant with the above-mentioned mitigation incorporated.

Facts in Support of Finding: See pages 4-64 to 4-68 of the IS/MND.

Hydrology, Water Quality, and Beneficial Uses of Waters of the State

Impact 16: Violate water quality standards or waste discharge requirements

Several drainages, wetlands, and ponds, considered Waters of the State, are affected by the Project. Attachment B of this Order lists the waterbodies affected, their receiving waters, and designated beneficial uses. The Project has potential to impact water quality and beneficial uses of waters of the state in several ways. Improvements to stream and wetland crossings could potentially result in temporary sedimentation or other disturbance to beds and banks during construction, thereby temporarily affecting the sediment load, including alteration of turbidity levels during construction and post-construction storm events. Contamination of waters from fuels or other hazardous construction materials is also a possibility. Some of the potential receiving waters have been listed as impaired to nutrients, siltation/sedimentation, pesticides, trash, mercury, and other constituents, which the Project could contribute to. Finally, destruction of stream or wetlands habitat during Project implementation could affect beneficial uses of state waters.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-AQ-2: Minimize Fugitive Dust (see above)

APM-BIO-1: Biological Monitors (see above)

APM-BIO-2: Restrict Work Area and Access Routes (see above)

APM-BIO-3: Maintain Equipment and Follow Refueling Directives (see above)

APM-BIO-5: Conduct Pre-Construction Surveys and Establish Work Exclusion Areas (see above)

APM-BIO-6: Avoid Impacts on Wetlands and Streams (see above)

APM-BIO-9: Allow Only Specified Erosion Control Materials (see above)

APM-BIO-14: Avoid and Minimize Impacts on Critical Habitat and Sensitive Natural Communities (see above)

APM-BIO-15: Restore Sites Disturbed by Construction (see above)

APM-BIO-16: California Red-Legged Frog Exclusion Fencing

APM-BIO-17: Minimize Impacts to Steelhead (see above)

APM-BIO-19: Compensatory Mitigation Approval (see above)

APM-HAZ-1: Hazardous Materials Management

APM-HYDRO-1: Storm water Pollution Prevention Plan (see above)

APM-HYDRO-2: Minimize Ground Disturbance (see above)

APM-HYDRO-3: Dewatering

> Although excavation activities associated with the project are limited, in the unlikely event that groundwater is encountered, it will be pumped into a baker tank and discharged at an appropriate wastewater facility. Groundwater may also be used to control fugitive dust on site, as needed, and may be dispersed to other vegetated areas, on the condition that the reused groundwater does not result in ponding or flow into areas outside of the proposed construction footprint.

Finding: Implementation of APM-BIO-2, APM-BIO-6, APM-BIO-14, and APM-HYDRO-2 would avoid and minimize disturbance to wetlands and other waters of the State. Helicopters and an existing network of access roads and work areas will be used where possible to avoid impacts to waters. The Permittee has prepared a Land Form and Grading Plan, which outline guidelines for access road and site disturbance to minimize run-off to waters and erosion. Exposed surfaces will be watered or covered, as needed, to reduce fugitive dust and erosion. The Permittee will install ECDs to prevent the acceleration of natural erosion and sedimentation rates. During clearing activities, vegetation will be mowed or grubbed, leaving root systems intact wherever possible to encourage resprouting and minimize erosion. The Permittee would implement APM-BIO-6 to install BMPs such as matting to prevent erosion in wet areas, APM-HYDRO-1 to prepare and implement a SWPPP, and APM-HYDRO-2 to minimize soil disturbance during the wet season. Dirt piles will be located away from and/or downgradient from waterways, and other sediment control BMPs will be developed and implemented as described in the SWPPP (APM-HYDRO-1). APM-BIO-3, APM-HAZ-1, and APM-HYDRO-3 are measures which protect water quality from hazardous constituents. The other listed APMs protect aquatic life and other beneficial uses. Disturbed sites will be restored per APM-BIO-15 and the Restoration and Compensatory Mitigation Plan in Attachment C. Unavoidable impacts will be compensated for as described in Attachment C.

The State Water Board finds that the Project's potential to violate water quality standards or waste discharge requirements would be less-than significant with the above-mentioned

mitigation incorporated. The Project would not contribute significantly to any impairment or violate any water quality standard, if implemented as described.

Facts in Support of Finding: See pages 4-69 to 4-83 of the IS/MND.

Impact 17: Substantially alter existing drainage patterns in a manner which would result in substantial erosion or siltation

The Project includes improvements to stream and wetland crossings, which could potentially result in permanent changes to existing drainage patterns. Drainage crossing improvements include installation of one temporary culvert, installation of one new permanent culvert, replacing two existing culverts, reinforcing four existing culverts, and installing nine at-grade crossings.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-BIO-2: Restrict Work Area and Access Routes (see above)

APM-BIO-6: Avoid Impacts on Wetlands and Streams (see above)

APM-BIO-15: Restore Sites Disturbed by Construction (see above)

APM-BIO-19: Compensatory Mitigation Approval (see above)

APM-HYDRO-1: Storm water Pollution Prevention Plan (see above)

APM-HYDRO-2: Minimize Ground Disturbance (see above)

APM-HYDRO-3: Dewatering (see above)

Finding: The Project is specifically designed to not substantially alter the drainage pattern of stream or result in substantial erosion. Helicopters and an existing network of access roads and work areas will be used where possible to avoid impacts to waters. Major grading and contouring would not be required. The Permittee's Land Form and Grading Plan includes guidelines to minimize runoff to waters and erosion. Implementation of APM-HYDRO-2 would minimize ground disturbance. The Permittee would implement APM-BIO-6 to install BMPs such as matting to prevent erosion in wet areas. APM-HYDRO-1 requires preparing and implementing a SWPPP to control runoff and potential erosion. APM-HYDRO-3 requires that if dewatering is necessary, that it not be discharge into a stream where it may cause excess runoff and erosion. Replacement culverts are larger than existing, under-sized culverts and will be cable of handling a 100-year storm event. Several culverts will be reinforced to control erosion and handle flows better. Disturbed sites will be restored per APM-BIO-15 and the Restoration and Compensatory Mitigation Plan in Attachment C. Unavoidable impacts will be compensated for as described in Attachment C. The Permittee has additional committed to removing two defunct culverts, which were causing severe erosion, and recontouring their stream drainages as part of the compensatory mitigation package. The State Water Board finds that the Project would not substantially alter existing drainage patterns in a manner which would result in substantial erosion or siltation with the above-mentioned mitigation measures incorporated.

Facts in Support of Finding: See pages 4-69 to 4-83 of the IS/MND.

Impact 18: Substantially alter existing drainage patterns in a manner which would result in flooding

The Project includes improvements to stream and wetland crossings, which could potentially result in permanent changes to existing drainage patterns. Drainage crossing improvements include installation of one temporary culvert, installation of one new permanent culvert, replacing two existing culverts, reinforcing four existing culverts, and installing nine at-grade crossings.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-BIO-2: Restrict Work Area and Access Routes (see above)

APM-BIO-6: Avoid Impacts on Wetlands and Streams (see above)

APM-BIO-15: Restore Sites Disturbed by Construction (see above)

APM-BIO-19: Compensatory Mitigation Approval (see above)

APM-HYDRO-1: Storm Water Pollution Prevention Plan (see above)

APM-HYDRO-2: Minimize Ground Disturbance (see above)

APM-HYDRO-3: Dewatering (see above)

Finding: The reconductoring project would not include the creation of impervious surfaces or other means that could increase surface water runoff rates, nor would the project require the substantial modification of any upland sites to an extent that could alter drainage patterns in a way that would increase the potential for any on- or off-site flooding. Two culverts would be replaced with larger culverts that can handle a 100-year storm event, which would allow for better drainage and prevent localized flooding. The Permittee's Land Form and Grading Plan includes guidelines to minimize runoff to waters. APM-HYDRO-1 requires preparing and implementing a SWPPP to control runoff. APM-HYDRO-3 requires that if dewatering is necessary, that it not be discharge into a stream where it may cause excess runoff. Several culverts will be reinforced to handle flows better. Disturbed sites will be restored per APM-BIO-15 and the Restoration and Compensatory Mitigation Plan in Attachment C. The Permittee has additional committed to removing two defunct culverts, which were restricting natural flow patterns and recontouring their stream drainages as part of the compensatory mitigation package. The State Water Board finds that the Project would not substantially alter existing drainage patterns in a manner which would result in flooding with the above-mentioned mitigation measures incorporated.

Facts in Support of Finding: See pages 4-69 to 4-83 of the IS/MND.

Impact 19: Cause exceedance of the capacity of storm water drainage systems or provide substantial additional sources of polluted runoff

The Project includes improvements to stream and wetland crossings, which could potentially result in permanent changes to existing drainage patterns.

Mitigation Measures:

APM-HYDRO-1: Storm Water Pollution Prevention Plan (see above)

Finding: Most of the existing transmission line corridor is located within rural residential,

agricultural, or undeveloped areas where municipal or otherwise developed storm water collection systems do not exist. Because the Project would not substantially alter the drainage patterns of any of the project work areas, it would not result in an increased amount of storm water runoff that could exceed the capacity of existing systems. APM-HYDRO-1 would ensure that the Project would not have any substantial effects on water quality from sediment-laden runoff or through the accidental discharge of hazardous materials. The State Water Board finds that the Project would not cause exceedance of the capacity of storm water drainage systems or provide substantial additional sources of polluted runoff with the above-mentioned mitigation measures incorporated.

Facts in Support of Finding: See pages 4-69 to 4-83 of the IS/MND.

Noise

Impact 20: Cause exceedance of noise standards

Noise from construction equipment, vehicles, or helicopters during Project construction activities could potentially violate local noise standards.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-NO-1: Noise Minimization with Portable Barriers

> Compressors and other small stationary equipment used during construction will be shielded with portable barriers if the equipment is located near noise-sensitive receptors.

APM-NO-2: Maintain Noise Level Thresholds

> While the Permittee is not subject to local noise ordinances for project construction, the Permittee will make reasonable efforts to maintain noise levels within local jurisdictional standards, which may include implementing alternative construction techniques when feasible, notifying residents in advance of certain construction activities, altering construction hours, or offering residents temporary accommodations during construction activities where noise thresholds are exceeded within the proximity of those residents.

APM-NO-3: Maintain Minimum Distance from Residential Structures

> Helicopters will maintain a safe height in accordance with Federal Aviation Administration (FAA) regulations when passing over residential areas, with the exception of when helicopters are at temporary construction areas or actively assisting with the stringing of conductor or other project activities.

Finding: The State Water Board finds that the Project would not cause exceedance of local noise standards or ordinances with the above-mentioned mitigation measures incorporated.

Facts in Support of Finding: See pages 4-84 to 4-94 of the IS/MND.

Transportation and Traffic

Impact 21: Change air traffic patterns

Helicopters would be used for the Project to transport and install towers and cage-top extensions, and to transport personnel and materials in locations where vehicle access to towers would be problematic because of physical or biological constraints. This change in air

traffic patterns could potentially have a significant effect.

Mitigation Measures:

APM-GEN-1: Worker Training (see above)

APM-TRA-1: Air Transit Coordination (see above)

Finding: The State Water Board finds that Project impacts related to air traffic changes would be less than significant with mitigation incorporated because (1) helicopters that would be carrying equipment or construction materials would not pass over major highways or habitable structures; (2) in the unlikely event that construction plans require otherwise, APM-TRA-1 would reduce this potential impact to a less than-significant level by requiring the Permittee to (a) coordinate with residents to temporarily vacate their homes or businesses, (b) coordinate with local airports before and during construction, and (3) comply with all FAA regulations regarding air traffic within 2 miles of the existing transmission line corridor.

Facts in Support of Finding: See pages 4-106 to 4-110 of the IS/MND.

G. Mitigation Monitoring and Reporting Plan (MMRP)

When adopting a MND, the lead agency must also adopt a reporting or monitoring program for the changes made to the Project, or conditions of project approval, incorporated into the Project in order to mitigate or avoid significant effects on the environment (Cal. Code Regs., tit. 14, § 15074 (d).) The State Water Board has prepared a Mitigation Monitoring and Reporting Plan (MMRP) for the Project (see Attachment D of this Order) to ensure that all mitigation measures included in the Final IS/MND are implemented and functions as intended, and that potential significant environmental impacts identified in the IS are indeed reduced to less than significant levels.

The MMRP also identifies other agencies that have enforcement and compliance responsibilities; however, until the mitigation measures have been completed, the State Water Board will retain main responsibility for ensuring that all measures are implemented by the Permittee in accordance with the MMRP.

H. Determination

The State Water Board has analyzed the environmental effects of the Project described in the IS/MND (Cal. Code Regs., tit. 14, §§ 15064, 15074), and has consulted with responsible agencies regarding this IS/MND, as appropriate.

Considering the whole of the record, the State Water Board has determined that the proposed Project will not result in a significant effect on the environment (Cal. Code Regs., tit. 14, § 15074, subd. (b)) and makes the following findings:

(1) Revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur; and

(2) There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment. (Cal. Code Regs., tit. 14, § 15070.)

The State Water Board hereby finds that the Project, that: (1) the final IS/MND has been completed in compliance with CEQA; (2) the final IS/MND reflects the State Water Board's independent judgment and analysis; and (3) the information in the final IS/MND) have been reviewed and considered.

I. Notice of Determination and Submittal of Filing Fee

The State Water Board will file a Notice of Determination with the SCH within five (5) working days from the issuance of this Order (Cal. Code Regs., tit. 14, § 15075, subd. (a)), and submit the appropriate filing fee to CDFW (Fish and Game Code Section 711.4).

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Copies of this Form

In order to identify your project, it is necessary to include a copy of the Project specific Cover Sheet below with your report: please retain for your records. If you need to obtain a copy of the Cover Sheet you may download a copy of this Order as follows:

1. Go to: http://www.waterboards.ca.gov/water_issues/programs/cwa401/certifications.shtml

2. Find your Order in the table based on Applicant, Date, and Subject headers.

Report Submittal Instructions

1. Check the box on the Report and Notification Cover Sheet next to the report or notification you are submitting.

   - **Part A (Monthly Report):** This report will be submitted on the 15th of each month until a *Notice of Project Complete Letter* is issued.
   - **Part B (Annual Report):** This report will be submitted annually on June 1st until a *Notice of Project Complete Letter* is issued.
   - **Part C (Project Status Notifications):** Used to notify the State Water Board of the status of the Project schedule that may affect Project billing.
   - **Part D (Conditional Notifications and Reports):** Required on a case by case basis for accidental discharges of hazardous materials, violation of compliance with water quality standards, notification of in-water work, or other reports.

2. Sign the Report and Notification Cover Sheet and attach all information requested for the Report Type.

3. **Electronic Report Submittal Instructions:**
   - Submit signed Report and Notification Cover Sheet and required information via email to: stateboard401@waterboards.ca.gov and cc: Joanna.Jensen@waterboards.ca.gov
   - Include in the subject line of the email:

     Subject: ATTN: Joanna Jensen; Reg. Measure ID: 393490_Report

Definition of Reporting Terms

1. **Active Discharge Period:** The active discharge period begins with the effective date of this Order and ends on the date that the Permittee receives a *Notice of Completion of Discharges Letter* or, if no post-construction monitoring is required, a *Notice of Project Complete Letter.* The Active Discharge Period includes all elements of the Project including site construction and restoration, and any Permittee responsible compensatory mitigation construction.

2. **Request for Notice of Completion of Discharges Letter:** This request by the Permittee to the State Water Board staff pertains to projects that have post construction monitoring requirements, e.g., if site restoration was required to be monitored for five (5) years following construction. State Water Board staff will review the request and send a *Completion of Discharges Letter* to the Permittee upon approval. This letter will initiate the post-discharge

monitoring period and a change in fees from the annual active discharge fee to the annual post-discharge monitoring fee.

3. **Request for Notice of Project Complete Letter:** This request by the Permittee to the State Water Board staff pertains to projects that either have completed post-construction monitoring and achieved performance standards or have no post-construction monitoring requirements, and no further Project activities are planned. State Water Board staff will review the request and send a *Project Complete Letter* to the Permittee upon approval. Termination of annual invoicing of fees will correspond with the date of this letter.

4. **Post-Discharge Monitoring Period:** The post-discharge monitoring period begins on the date of the *Notice of Completion of Discharges Letter* and ends on the date of the *Notice of Project Complete Letter* issued by the State Water Board staff. The Post-Discharge Monitoring Period includes continued water quality monitoring or compensatory mitigation monitoring.

5. **Effective Date:** Date of Order issuance.

Map/Photo Documentation Information

When submitting maps or photos, please use the following formats:

1. **Map Format Information:**
   Preferred map formats of at least 1:24000 (1" = 2000') detail (listed in order of preference):
   - **GIS shapefiles**: The shapefiles must depict the boundaries of all project areas and extent of aquatic resources impacted. Each shape should be attributed with the extent/type of aquatic resources impacted. Features and boundaries should be accurate to within 33 feet (10 meters). Identify datum/projection used and if possible, provide map with a North American Datum of 1983 (NAD38) in the California Teale Albers projection in feet.
   - **Google KML files** saved from Google Maps: My Maps or Google Earth Pro. Maps must show the boundaries of all project areas and extent/type of aquatic resources impacted. Include URL(s) of maps. If this format is used include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.
   - **Other electronic format** (CAD or illustration format) that provides a context for location (inclusion of landmarks, known structures, geographic coordinates, or USGS DRG or DOQQ). Maps must show the boundaries of all project areas and extent/type of aquatic resources impacted. If this format is used include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.
   - Aquatic resource maps marked on paper **USGS 7.5 minute topographic maps** or **Digital Orthophoto Quarter Quads (DOQQ)** printouts. Maps must show the boundaries of all project areas and extent/type of aquatic resources impacted. If this format is used include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.
2. **Photo-Documentation:** Include a unique identifier, date stamp, written description of photo details, and latitude/longitude (in decimal degrees) or map indicating location of photo. Successive photos should be taken from the same vantage point to compare pre/post construction conditions.

***This Reporting and Notification Cover Sheet must be signed by the Permittee or a duly authorized representative and included with all written submittals.**

REPORT AND NOTIFICATION COVER SHEET

Project:	Vaca Dixon-Lakeville 230 Kilovolt Reconductoring Project
Permittee:	Pacific Gas and Electric Company
Reg. Meas. ID:	393490 **Place ID:** 799612
Order Effective Date:	8T

Report Type Submitted		
Part A – Monthly Report		
Report Type 1	☐	**Monthly Report**
Part B – Annual Report		
Report Type 2	☐	**Annual Report**
Part C - Project Status Notifications		
Report Type 3	☐	**Commencement of Construction Letter**
Report Type 4	☐	**Request for Notice of Completion of Discharges Letter**
Report Type 5	☐	**Request for Notice of Project Complete Letter**
Part D - Conditional Notifications and Reports		
Report Type 6	☐	**Accidental Discharge of Hazardous Material Report**
Report Type 7	☐	**Violation of Compliance with Water Quality Standards Report**
Report Type 8	☐	**In-Water Work/Diversions Water Quality Monitoring Report**
Report Type 9	☐	**Modifications to Project Report**
Report Type 10	☐	**Transfer of Property Ownership Report**
Report Type 11	☐	**Transfer of Long-Term BMP Maintenance Report**

***This Reporting and Notification Cover Sheet must be signed by the Permittee or a duly authorized representative and included with all written submittals.**

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Print Name [1]	**Affiliation and Job Title**
Signature	**Date**

[1]STATEMENT OF AUTHORIZATION (include if authorization has changed since application was submitted)

I hereby authorize _____ to act in my behalf as my representative in the submittal of this report, and to furnish upon request, supplemental information in support of this submittal.

Permittee's Signature

Date

***This Reporting and Notification Cover Sheet must be signed by the Permittee or a duly authorized representative and included with all written submittals.**

Part A – Monthly Report

Report Type 1	**Monthly Report**
Report Purpose	Notifies State Water Board staff of the Project status and environmental compliance activities on a monthly basis.
When to Submit	On the 15th of each month following the reporting period, until a *Notice of Project Complete Letter* is issued to the Permittee.
Report Contents	**1. Construction Summary** Describe Project progress and schedule including initial ground disturbance, site clearing and grubbing, road construction, site construction, and the implementation status of construction storm water Best Management Practices (BMPs[1]). If construction has not started, provide estimated start date. **2. Event Summary** Describe distinct Project activities and occurrences, including environmental monitoring, surveys, and inspections. 3. **Photo Summary** Provide photos of Project activities. For each photo, include a unique site identifier, date stamp, written description of photo details, and latitude/longitude (in decimal degrees) or map indicating location of photo. Successive photos should be taken from the same vantage point to compare pre/post construction conditions. **1. Compliance Summary** a) List name and organization of environmental surveyors, monitors, and inspectors involved with monitoring environmental compliance for the reporting period. b) List associated monitoring reports for the reporting period. c) Summarize observed incidences of non-compliance, compliance issues, minor problems, or occurrences. d) Describe each observed incidence in detail. List monitor name and organization, date, location, type of incident, corrective action taken (if any), status, and resolution.

[1] Best Management Practices (BMPs) is a term used to describe a type of water pollution or environmental control.

Part B – Annual Report and Report Topics

Report Type 2	**Annual Report**
Report Purpose	Notifies State Water Board staff of Project status during both the active discharge and post-discharge monitoring periods.
When to Submit	Annually on June 1st, until a *Notice of Project Complete Letter* is issued to the Permittee.
Report Contents	The contents of the *Annual Report* shall include the topics indicated below for each project period. Report contents are outlined in *Annual Report Topics* below. **<u>During the Active Discharge Period:</u>** • **Topic 1: Construction Summary** • **Topic 2: Status of Mitigation for Temporary Impacts** • **Topic 3: Status of Compensatory Mitigation for Permanent Impacts** **<u>During the Post-Discharge Monitoring Period:</u>** • **Topic 2: Status of Mitigation for Temporary Impacts** • **Topic 3: Status of Compensatory Mitigation for Permanent Impacts**

Annual Report Topics (1-3)	
Annual Report Topic 1	**Construction Summary**
Report Contents	**1.** Project progress and schedule including initial ground disturbance, site clearing and grubbing, road construction, site construction, and the implementation status of construction storm water BMPs. If construction has not started, provide estimated start date and reasons for delay. **2.** Map showing general Project progress. **3.** If applicable: **a.** Summary of Conditional Notification and *Report Types 5 and 6* (Part C below). **b.** Summary of Certification Deviations. (See Attachment H for further information.)

Annual Report Topic 2	**Mitigation for Temporary Impacts Status**
Report Contents	**1.** Planned date of initiation and map showing locations of mitigation for temporary impacts to waters of the state and all upland areas of temporary disturbance which could result in a discharge to waters of the state**.** **2.** If mitigation for temporary impacts has already commenced, provide a map and information concerning attainment of performance standards contained in the restoration plan.
Annual Report Topic 3	**Compensatory Mitigation for Permanent Impacts Status**
When to Submit	With the *Annual Report* during both the active discharge period and post-discharge monitoring period.
Report Contents	**Part A. Permittee-Responsible Mitigation** **1.** Planned date of initiation of compensatory mitigation site installation**.** **2.** If installation is in progress, provide description and photos showing what has been completed to date. **3.** If the compensatory mitigation site has been installed, provide a final map and information concerning attainment of performance standards contained in the compensatory mitigation plan. **Part B. Mitigation Bank** **1.** Status or proof of purchase of credit types and quantities. **2.** Include the name of bank/ILF Program and contact information.

Part C – Project Status Notifications

Report Type 3	Commencement of Construction
Report Purpose	Notifies State Water Board staff of the start of Project construction.
When to Submit	At least seven (7) business days prior to start of initial ground disturbance activities.
Report Contents	**1.** Date of commencement of construction. **2.** Anticipated date when discharges to waters of the state will occur. **3.** Project schedule milestones including a schedule for onsite compensatory mitigation, if applicable.

Report Type 4	Request for Notice of Completion of Discharges Letter
Report Purpose	Notifies State Water Board staff that post-construction monitoring is required and that active Project construction, including any mitigation and Permittee-responsible compensatory mitigation, is complete.
When to Submit	Within thirty (30) business days following completion of all Project construction activities.
Report Contents	**1.** Date of storm water *Notice* of Termination(s), if applicable. **2.** Status of post-construction storm water BMP installation. **3.** Pre- and post-photo documentation of all Project activity sites where the discharge of dredge and/or fill/excavation was authorized. **4.** Summary of *Certification Deviation* discharge quantities compared to initial authorized impacts to waters of the state, if applicable. **5.** An updated monitoring schedule for mitigation for temporary impacts to waters of the state and Permittee-responsible compensatory mitigation during the post-discharge monitoring period, if applicable.

Report Type 5	Request for Notice of Project Complete Letter
Report Purpose	Notifies State Water Board staff that construction and/or any post-construction monitoring is complete, or is not required, and no further Project activity is planned.
When to Submit	Within thirty (30) business days following completion of all Project activities.
Report Contents	**Part A: Mitigation for Temporary Impacts** **1.** A report establishing that the performance standards outlined in the restoration plan have been met for Project site upland areas of temporary disturbance which could result in a discharge to waters of the state. **2.** A report establishing that the performance standards outlined in the restoration plan have been met for restored areas of temporary impacts to waters of the state. Pre- and post-photo documentation of all restoration sites. **Part B: Permittee Responsible Compensatory Mitigation** **1.** A report establishing that the performance standards outlined in the compensatory mitigation plan have been met. **2.** Status on the implementation of the long-term maintenance and management plan and funding of endowment. **3.** Pre- and post-photo documentation of all compensatory mitigation sites. **4.** Final maps of all compensatory mitigation areas (including buffers). **Part C: Post-Construction Storm Water BMPs** **1.** Report status and functionality of all post-construction BMPs.

Part D – Conditional Notifications and Reports

Report Type 6	Accidental Discharge of Hazardous Material Report
Report Purpose	N**otifies** State Water Board staff that an accidental discharge of hazardous material has occurred.
When to Submit	Within three (3) business days following the date of an accidental discharge of hazardous material. Continue reporting as required by State Water Board staff.
Report Contents	**1.** The report shall include the California Office of Emergency Services (OES) Incident/Assessment Form, a full description and map of the accidental discharge incident (i.e. location, time and date, source, discharge constituent and quantity, aerial extent, and photo documentation). If applicable, the OES Written Follow-Up Report may be substituted. **2.** If applicable, any required sampling data, a full description of the sampling methods including frequency/dates and times of sampling, equipment, locations of sampling sites. **3.** Locations and construction specifications of any barriers, including silt curtains or diverting structures, and any associated trenching or anchoring.

Report Type 7	Violation of Compliance with Water Quality Standards Report
Report Purpose	N**otifies** State Water Board staff that a violation of compliance with water quality standards has occurred.
When to Submit	Within three (3) business days of the noncompliance event.
Report Contents	The report shall include: the cause; the location shown on a map; and the period of the noncompliance including exact dates and times. If the noncompliance has not been corrected, include: the anticipated time it is expected to continue; the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and any monitoring results if required by State Water Board staff.

Report Type 8	In-Water Work and Diversions Water Quality Monitoring Report
Report Purpose	N**otifies** State Water Board staff of the completion of in-water work.
When to Submit	Within three (3) business days following the completion of in-water work. Continue reporting in accordance with the approved water quality monitoring plan.
Report Contents	As required by an approved water quality monitoring plan.

Report Type 9	Modifications to Project Report
Report Purpose	N**otifies** State Water Board staff if the Project, as described in the application materials, is altered in any way or by the imposition of subsequent permit conditions by any local, state or federal regulatory authority.
When to Submit	In advance of implementing any changes to the Project.
Report Contents	A description and location of any alterations to Project implementation. Identification of any Project modifications that will interfere with the Permittee's compliance with the Order.

Report Type 10	Transfer of Property Ownership Report
Report Purpose	N**otifies** State Water Board staff of change in ownership of the Project or Permittee-responsible mitigation area.
When to Submit	At least ten (10) business days prior to the transfer of ownership.
Report Contents	1. A statement that the Permittee has provided the purchaser with a copy of this Order and that the purchaser understands and accepts: a. The Order's requirements and the obligation to implement them or be subject to administrative and/or civil liability for failure to do so; and b. Responsibility for compliance with any long-term BMP maintenance plan requirements in this Order. 2. A statement that the Permittee has informed the purchaser to submit a written request to the State Water Board to be named as the new Permittee in a revised Order.

Report Type 11	**Transfer of Long-Term BMP Maintenance Report**
Report Purpose	N**otifies** State Water Board staff of transfer of long-term BMP maintenance responsibility.
When to Submit	At least ten (10) business days prior to the transfer of BMP maintenance responsibility.
Report Contents	A copy of the legal document transferring maintenance responsibility of post-construction BMPs.

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SIGNATORY REQUIREMENTS

All Documents Submitted in Compliance with this Order
Shall Meet the Following Signatory Requirements:

1. All applications, reports, or information submitted to the State Water Board must be signed and certified by a responsible corporate officer of at least the level of vice-president.

2. A duly authorized representative of a person designated in item 1, above, may sign documents if:

   a) The authorization is made in writing by a person described in item 1, above.
   b) The authorization specifies either an individual or position having responsibility for the overall operation of the regulated activity.
   c) The written authorization is submitted to the State Water Board Staff Contact prior to submitting any documents listed in item 1, above.

3. Any person signing a document under this section shall make the following certification:

   "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

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Certification Deviation Procedures

Introduction

These procedures are put into place to preclude the need for Order amendments for minor changes in the Project routing or location. Minor changes or modifications in project activities are often required by the Permittee following start of construction. These deviations may potentially increase or decrease impacts to waters of the state. In such cases, a Certification Deviation, as defined in Section J of the Order, may be requested by the Permittee as set forth below:

Process Steps

Who may apply: The Permittee or the Permittee's designated representative or agent (hereinafter, "Permittee") for this Order.

How to apply: By letter or email to the State Water Board staff designated as the contact for this Order.

Certification Deviation Request: The Permittee will request verification from the State Water Board staff that the project change qualifies as a Certification Deviation, as opposed to requiring an amendment to the Order. The request should:

1. Describe the Project change or modification:
    a. Proposed activity description and purpose;
    b. Why the proposed activity is considered minor in terms of impacts waters of the state and the environment;
    c. How the Project activity is currently addressed in the Order; and,
    d. Why a Certification Deviation is necessary for the Project.
2. Describe location (latitude/longitude coordinates), the date(s) it will occur, as well as associated impact information (i.e., temporary or permanent, federal or non-federal jurisdiction, water body name/type, estimated impact area, etc.) and minimization measures to be implemented.
3. Provide all updated environmental survey information for the new impact area.
4. Provide a map that includes the activity boundaries with photos of the site.
5. Provide verification of any mitigation needed according to the Order conditions.
6. Provide any other information required by State Water Board staff to determine whether the Project change or modification necessitates additional environmental review. (Cal. Code Regs., tit. 14, §§ 15061, 15162-15164.)

Action by State Water Board on Certification Deviation Request: State Water Board staff will make a determination on the Certification Deviation request within ten (10) business days from receipt of a complete request, and notify the Permittee via email of the staff determination. Determination of whether or not a Certification Deviation request is complete is at the discretion of State Water Board staff.

Post-Discharge Certification Deviation Reporting:

1. Within 30 calendar days of completing the approved Certification Deviation activity, the Permittee will provide a post-discharge activity report that includes the following information:
    a. Activity description and purpose;
    b. Activity location, start date, and completion date;
    c. Erosion control and pollution prevention measures applied;
    d. Impacts to water body types if applicable;
    e. Mitigation plan if applicable;
    f. Map of activity location and boundaries; and
    g. post-construction photos.

Action by State Water Board on Post-Discharge Activity Report: State Water Board staff will review the post-discharge Certification Deviation Report within fifteen (15) business days from receipt of a complete report. State Water Board staff will determine, in consultation with the Permittee and other regulatory agencies, if applicable, whether additional mitigation will be required. If additional mitigation is required, State Water Board staff will inform the Permittee within the fifteen (15) business day review period. Determination of whether or not a post-discharge activity report is complete, is at the discretion of State Water Board staff.

Annual Summary Deviation Report:

1. Until a *Notice of Completion of Discharges* letter or *Notice of Project Complete* letter is issued, include in the *Annual Project Report* (see *Construction Notification and Reporting* attachment) a compilation of all Certification Deviation activities through the reporting period with the following information:
    a. Site name(s).
    b. Date(s) of Certification Deviation approval.
    c. Location(s) of authorized activities.
    d. Impact area(s) by water body type prior to activity in acres, linear feet, and cubic yards, as originally authorized in the Order.
    e. Actual impact area(s) by water body type in acres, linear feet, and cubic yards, due to Certification Deviation activities.
    f. The net change in impact area by water body type(s) in acres, linear feet, and cubic yards; and
    g. Mitigation to be provided (approved mitigation ratio and amount).

Action by State Water Board on Annual Certification Deviation Report: Following issuance of a *Notice of Completion of Discharges* letter or *Notice of Project Complete* letter, the State Water Board will amend the Order to reflect all approved Certification Deviations and the amended Order will serve as a record of actual Project activities.