

FOR CONTRACT NO.: 04-1G2401

INFORMATION HANDOUT

WATER QUALITY

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD CERTIFICATION
BOARD ORDER NO. WDID No. 1B12061WNSO

PERMITS

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME INCIDENTAL TAKE PERMIT
NO. 2081-2011-088-03
ARMY CORPS OF ENGINEERS NATIONWIDE
PERMIT # 2012-00135N

AGREEMENTS

UNITED STATES FISH AND WILDLIFE SERVICE (Biological Opinion)
(BO) # 08ESMF00-2012-F-0127-3

ROUTE: 116-SON-34.1-34.5

North Coast Regional Water Quality Control Board

June 26, 2012

In the Matter of
Water Quality Certification

for the

**California Department of Transportation
Highway 116 – Madrone Left Turn Lane Project
WDID No. 1B12061WNSO**

APPLICANT: California Department of Transportation
RECEIVING WATER: Drainage ditches and wetlands
HYDROLOGIC AREA: Russian River Hydrologic Unit No.114.00
COUNTY: Sonoma
FILE NAME: CDOT - HWY 116, Madrone LTL Project
WDID No. 1B12061WNSO

BY THE EXECUTIVE OFFICER:

1. On April 25, 2012, the North Coast Regional Water Quality Control Board (Regional Water Board) received an application from the California Department of Transportation (Caltrans), requesting Federal Clean Water Act (CWA), section 401, Water Quality Certification for activities related to proposed Highway 116 Madrone Left Turn Lane Project (Project). Additional information regarding project specifics was received on June 22, 2012. The proposed project will cause disturbances to waters of the United States (U.S.) and waters of the State associated with intermittent and ephemeral watercourses and wetland that are located within the Russian River Hydrologic Unit No.114.00 (Laguna de Santa Rosa Hydrologic Sub-Area 114.21). The Regional Water Board provided public notice of the application pursuant to title 23, California Code of Regulations, section 3858 on May 31, 2012, and posted information describing the project on the Regional Water Board's website. No comments were received.

2. The proposed project is located on Highway 116 from post mile (PM) 34.09 to 34.47, in Sonoma County. The purpose of the project is to reduce congestion and improve safety. The existing roadway will be widened from a maximum of 36 feet to a maximum of 46 feet in order to accommodate one left turn pocket in each direction at the intersection of Highway 116 and Madrone Avenue. The widened roadway will consist of one additional 12-foot lane, and a maximum of 5-foot additional shoulder. Each new turn pocket will be 350 feet long.
3. Caltrans has determined that the proposed project will result in 0.006 acres (250 feet²) of permanent impacts and 0.001 acres (40 feet²) to wetlands identified as waters of the U.S. and waters of the State. In addition, permanent impacts to unnamed tributaries (roadside ditches) to the Laguna de Santa Rosa identified as waters of the U.S. would total 0.019 acres (858 feet²). Temporary impacts to roadside ditches identified as waters of the U.S. associated with construction would total 0.001 acres (80 feet²). In addition, permanent impact to California Tiger Salamander (CTS) habitat will be 0.62 acres (27,007 feet²), with an additional 0.077 acres (3,354 feet²) of permanent impact.
4. Caltrans proposes to mitigate for direct impacts to waters of the State through on-site creation and revegetation and the purchase of off-site wetland mitigation bank credits. The on-site mitigation includes the restoration/creation of roadside ditches within the project limits. The project would result in impacts to CTS habitat, which Caltrans will mitigate through the purchase of mitigation bank credits. The project will result in an increase of approximately 0.36 acres of impervious surface. Therefore, Caltrans will provide storm water treatment BMPs on-site for 0.21 acres of impervious surface. The deficit of 0.15 acres will be off-set by using credits from the Caltrans funded Sonoma County Fairground off-site low impact development (LID) retrofit project. The Caltrans funded LID projects within the City of Santa Rosa (Russian River Watershed) resulted in the treatment of 17 acres of impervious surface, thus far Caltrans has used 14.77 acres of treatment credits.
5. The proposed project will be conducted between April 15th and October 31st; however, work in surface waters will only be conducted in summer months during low flow conditions between May 15th and October 15th. The project will result in less than one acre disturbed soil area. Caltrans will utilize Best Management Practices (BMPs) to provide erosion control and pollution prevention throughout the project area during construction. All graded areas within the project affected by the construction activities will be appropriately stabilized and/or replanted with appropriate native vegetation.
6. The applicant has applied for authorization from the U.S. Army Corps of Engineers to perform the project under their Nationwide Permits No. 14 (linear transportation project) pursuant to Clean Water Act, section 404. In addition, Caltrans is seeking an Incidental Take Permit from the California Department of Fish and Game for impacts to CTS habitat. On June 20, 2012, Caltrans, acting as lead agency,

certified an Initial Study with a Proposed Negative Declaration for the proposed project in order to comply with the California Environmental Quality Act (CEQA) (State Clearing House No. 2012042005). The Regional Water Board has considered the environmental documentation, including any proposed changes, and incorporates any avoidance, minimization, and mitigation measures into the project as a condition of approval to avoid significant affects to the environment.

7. The Laguna de Santa Rosa, a major tributary of the Russian River, is listed on the Clean Water Act section 303(d) list as impaired mercury, indicator bacteria, dissolved oxygen, nitrogen, phosphorus, sediment/siltation, and temperature. The Russian River watershed is listed on the Clean Water Act section 303(d) list as impaired for sediment and temperature. Roads are a significant source of sediment in the watershed (directly, from surface erosion, and, indirectly, by triggering landslides. In addition, activities that impact stream bed, banks, and floodplains and reduce riparian vegetation are identified as sources contributing to increased stream temperatures. Such projects may involve removal of vegetation and/or channel alteration, and also have potential to increase sediment loads. A focus on measures to reduce sediment discharges to surface waters from roads in the watershed, and measures to avoid, minimize, and mitigate impacts on riparian zones is essential for achieving Basin Plan and CEQA compliance.
8. Pursuant to Regional Water Board Resolution R1-2004-0087, *Total Maximum Daily Load Implementation Policy Statement for Sediment-Impaired Receiving Waters within the North Coast Region* (Sediment TMDL Implementation Policy), the Executive Officer is directed to "rely on the use of all available authorities, including existing regulatory standards, and permitting and enforcement tools to more effectively and efficaciously pursue compliance with sediment-related standards by all dischargers of sediment waste."
9. Pursuant to Regional Water Board Resolution R1-2012-0013, *Implementation of the Water Quality Objective for Temperature in the North Coast Region* (Temperature Implementation Policy), Regional Water Board staff is directed to address factors that contribute to elevated water temperatures when issuing 401 certifications or WDRs (permits) for individual projects. Any permit should be consistent with the assumptions and requirements of temperature shade load allocations in areas subject to existing temperature TMDLs, including EPA- established temperature TMDLs, as appropriate. If applicable, any permit or order should implement similar shade controls in areas listed as impaired for temperature but lacking a TMDL and region-wide as appropriate and necessary to prevent future impairments and to comply with the intrastate temperature objective.
10. The federal antidegradation policy requires that state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal

antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. This Order is consistent with applicable federal and State antidegradation policies, as it does not authorize the discharge of increased concentrations of pollutants or increased volumes of treated wastewater, and does not otherwise authorize degradation of the waters affected by this project.

11. To ensure compliance with Water Quality Objectives within the Basin Plan, adequate wetland and riparian protection and stringent requirements to avoid, minimize, and mitigate the sediment and temperature impacts associated with the proposed project will be incorporated as enforceable conditions in this Water Quality Certification. In addition, Caltrans will be required to conduct surface water monitoring, sampling, and analysis in accordance with the conditions of the Water Quality Certification. Additionally, storm water runoff monitoring, sampling, and analysis will be conducted as required by the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) Permit for Storm Water Discharges from the State of California, Department of Transportation (Caltrans) Properties, Facilities and Activities Order No. 99 – 06 - DWQ. The surface water data collected will be utilized to assess the adequacy of BMPs during construction as well as site specific mitigation measures proposed to minimize impacts to the environment, including sediment and temperature impacts.
12. This discharge is also regulated under State Water Resources Control Board Order No. 2003-0017-DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification," which requires compliance with all conditions of this certification.

Receiving Waters: Roadside ditches and wetlands
 Russian River Hydrologic Unit No.114.00
 Laguna de Santa Rosa Hydrologic Sub-Area 114.21

Filled and/or
Excavated Areas: Permanent – ditches (Waters of U.S.): 0.019 acres
 (858 feet²)
 Permanent – wetlands (Waters of U.S.): 0.006 acres
 (250 feet²)

 Temporary – ditches (Waters of U.S.): 0.001 acres (80 feet²)
 Temporary – wetlands (Waters of State): 0.001 acres
 (40 feet²)

Total Linear Impacts: Permanent – ditches (Waters of U.S.): 445 linear feet
 Permanent – wetlands (Waters of U.S.): 100 linear feet

Dredge Volume : None

Fill Volume : 145 cubic yards

Mitigation proposed: On-site: Restoration / establishment of 0.019 acres of
ditches (waters of U.S.)

Off-site: purchase of 0.010 acres of wetland credits (waters
of U.S.)

Latitude/Longitude: 38.3330 N / 122.7264 W

Accordingly, based on its independent review of the record, the Regional Water Board certifies that the Caltrans – Highway 116 Madone Left Turn Lane Project (WDID No. 1B12061WNSO), as described in the application will comply with sections 301, 302, 303, 306 and 307 of the Clean Water Act, and with applicable provisions of state law, provided that the Caltrans complies with the following terms and conditions:

All conditions of this order apply to Caltrans (and all its employees) and all contractors (and their employees), sub-contractors (and their employees), and any other entity or agency that performs activities or work on the project (including the off-site mitigation lands) as related to this Water Quality Certification.

1. This certification action is subject to modification or revocation upon administrative or judicial review; including review and amendment pursuant to Water Code section 13330 and title 23, California Code of Regulations, section 3867.
2. This certification action is not intended and shall not be construed to apply to any discharge from 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 title 23, California Code of Regulations, section 3855, subdivision (b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
3. The validity this certification is conditioned upon total payment of any fee required under title 23, California Code of Regulations, section 3833, and owed by the applicant.
4. All conditions required by this Order shall be included in the Plans and Specifications prepared by Caltrans for the Contractor. In addition, Caltrans shall require compliance with all conditions included in this Order in the bid contract for this project.

5. Caltrans shall provide a copy of this order and State Water Resources Control Board (SWRCB) Order No. 2003-0017-DWQ (web link referenced below) to the contractor and all subcontractors conducting the work, and require that copies remain in their possession at the work site. Caltrans shall be responsible for work conducted by its contractor or subcontractors.
6. The Regional Water Board shall be notified in writing each year at least five working days (working days are Monday – Friday) prior to the commencement of ground disturbing activities, water diversion activities or construction activities with details regarding the construction schedule, in order to allow Regional Water Board staff to be present on-site during installation and removal activities, and to answer any public inquiries that may arise regarding the project. Caltrans shall provide Regional Water Board staff access to the project site to document compliance with this order.
7. The Resident Engineer (or appropriately authorized agent) shall hold on-site water quality permit compliance meetings (similar to tailgate safety meetings) to discuss permit compliance, including instructions on how to avoid violations and procedures for reporting violations. The meetings shall be held at least every other week, before forecasted storm events, and when a new contractor or subcontractor arrives to begin work at the site. The contractors, subcontractors and their employees, as well as any inspectors or monitors assigned to the project, shall be present at the meetings. Caltrans shall maintain dated sign-in sheets for attendees at these meetings, and shall make them available to the Regional Water Board on request.
8. All activities and best management practices (BMPs) shall be implemented according to the submitted application and the conditions in this certification. BMPs for erosion, sediment, turbidity and pollutant control shall be implemented and in place at commencement of, during, and after any ground clearing activities, construction activities, or any other project activities that could result in erosion, sediment, or other pollutant discharges to waters of the State. The BMPs shall be implemented in accordance with the Caltrans Construction Site Best Management Practice Manual (CCSBMPM) and all contractors and subcontractors shall comply with the CCSBMPM. In addition, BMPs for erosion and sediment control shall be utilized year round, regardless of season or time of year. Caltrans shall stage erosion and sediment control materials at the work site. All BMPs shall be installed properly and in accordance with the manufacturer's specifications. If the project Resident Engineer elects to install alternative BMPs for use on the project, Caltrans shall submit a proposal to Regional Water Board staff for review and concurrence.
9. Caltrans shall prioritize the use of wildlife-friendly biodegradable (not photo-degradable) erosion control products wherever feasible. Caltrans 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). If Caltrans finds that erosion control netting or

products have entrapped or harmed wildlife, personnel shall remove the netting or product and replace it with wildlife-friendly biodegradable products. Caltrans shall not use or allow the use of erosion control products that contain synthetic materials within waters of the United States or waters of the State at any time. Caltrans shall request approval from the Regional Water Board if an exception from this requirement is needed for a specific location.

10. Herbicides and pesticides shall not be used within the project. If Caltrans has a compelling case as to why herbicides and pesticides should be used, they may submit a request along with a BMP plan to the Executive Officer of the Regional Water Board for review, consideration, and concurrence.
11. Work in flowing or standing surface waters, unless otherwise proposed in the project description and approved by the Regional Water Board, is prohibited. If construction dewatering of groundwater is found to be necessary, Caltrans shall use a method of water disposal other than disposal to surface waters (such as land disposal) or Caltrans shall apply for coverage under the Low Threat Discharge Permit or an individual National Pollutant Discharge Elimination System (NPDES) Permit and receive notification of coverage to discharge to surface waters, prior to the discharge.
12. Caltrans is prohibited from discharging waste to waters of the State, unless explicitly authorized by this Order. For example, no debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete or concrete washings, welding slag, oil or petroleum products, or other organic or earthen material from any construction or associated activity of whatever nature, other than that authorized by this Order, shall be allowed to enter into waters of the State. In addition, none of the materials listed above shall be placed within 150 linear feet of waters of the State or where the materials may be washed by rainfall into waters of the State.
13. Caltrans shall submit, subject to review and concurrence by the Regional Water Board staff, a dewatering and/or diversion plan that appropriately describe the dewatered or diverted areas and how those areas will be handled during construction. The diversion/dewatering plans shall be submitted no later than 30 days prior to conducting the proposed activity. Information submitted shall include the area or work to be diverted or dewatered and method of the proposed activity. All diversion or dewatering activities shall be designed to minimize the impact to waters of the State and maintain natural flows upstream and downstream. All dewatering or diversion structures shall be installed in a manner that does not cause sedimentation, siltation or erosion upstream or downstream. All dewatering or diversion structures shall be removed immediately upon completion of project activities. The in-channel work will only be conducted between May 15 and October 15. This Order does not authorize Caltrans to draft surface waters.

14. Fueling, lubrication, maintenance, storage and staging of vehicles and equipment shall be outside of waters of the U.S. and the State. 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 or the U.S. At no time shall Caltrans use any vehicle or equipment which leaks any substance that may impact water quality.
15. Caltrans shall implement appropriate BMPs to prevent the discharge of equipment fluids to the stream channel. The minimum requirements will include: storing hazardous materials at least 150 linear feet outside of the stream banks; checking equipment for leaks and preventing the use of equipment with leaks; pressure washing or steam cleaning equipment to remove fluid residue on any of its surfaces prior to its entering any stream channel in a manner that does not result in a discharge to waters of the State.
16. If, at any time, an unauthorized discharge to surface water (including wetlands, rivers or streams) occurs, or any water quality problem arises, the associated project activities shall cease immediately until adequate BMPs are implemented. The Regional Water Board shall be notified promptly and in no case more than 24 hours after the unauthorized discharge or water quality problem arises.
17. Caltrans and their contractor are not authorized to discharge wastewater (e.g., water that has contacted uncured concrete or cement, or asphalt) to surface waters, ground waters, or land. Wastewater 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 disposal or reuse facility. If Caltrans or their contractor proposes an alternate disposal method, Caltrans or their contractor shall request authorization from the Regional Water Board. Plans to reuse or recycle wastewater require written approval from Regional Water Board staff.
18. Caltrans shall provide analysis and verification that placing non-hazardous waste or inert materials (which may include discarded product or recycled materials) will not result in degradation of water quality, human health, or the environment. All project-generated waste shall be handled, transported, and disposed in strict compliance with all applicable State and Federal laws and regulations. When operations are complete, any excess material or debris shall be removed from the work area and disposed of properly and in accordance with the Special Provisions for the project and/or Standard Specification 7-1.13, Disposal of Material Outside the Highway Right of Way. Within 30 days of disposing of materials off-site, Caltrans shall submit to the Regional Water Board the satisfactory evidence provided to the Caltrans Engineer by the Contractor referenced in Standard Specification 7-1.13. In accordance with State and Federal laws and regulations, Caltrans is liable and responsible for the proper disposal of waste generated by their project.

19. 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. The reuse of low-level contaminated solids as fill on-site shall be performed in accordance with all State and Federal policies and established guidelines and must be submitted to the Regional Water Board for review and concurrence.
20. Only clean washed spawning gravel (0.25" – 6") with a cleanliness value of at least 85, using the Cleanness Value Test Method for California Test No. 227 will be placed in the streams. Gravel bag fabric shall be nonwoven polypropylene geotextile (or comparable polymer) and shall conform to the following requirements:
- Mass per unit area, grams per square meter, min ASTM Designation: D 5261 – 270
 - Grab tensile strength (25-mm grip), kilonewtons, min. ASTM Designation: D4632* 0.89
 - Ultraviolet stability, percent tensile strength retained after 500 hours, ASTM Designation: D4355, xenon arc lamp method 70 or appropriate test method for specific polymer
 - Gravel bags shall be between 600 mm and 800 mm in length, and between 400 mm and 500 mm in width.
 - Yarn used in construction of the gravel bags shall be as recommended by the manufacturer or bag supplier and shall be of a contrasting color. Gravel shall be between 0.5" – 4" in diameter, and shall be clean and free from clay balls, organic matter, and other deleterious materials. The opening of gravel-filled bags shall be secured to prevent gravel from escaping. Gravel-filled bags shall be between 13 kg and 22 kg in mass.
 - Caltrans shall request approval from the Regional Water Board if an exception from this requirement is needed for a specific location.
21. In order to demonstrate compliance with receiving water limitations and water quality objectives, surface water monitoring shall be conducted. When conducting surface water monitoring, Caltrans shall establish discharge, upstream (background) and downstream monitoring locations to demonstrate compliance with applicable water quality objectives. The downstream location shall be no more than 100 feet from the discharge location.
- A. Surface water monitoring shall be conducted whenever a project activity is conducted within waters of the State (e.g. including but not limited to the installation, use or removal of stream diversions, pile installations, and cofferdams). Measurements and observations shall be collected from each sampling location four times daily.
 - B. Surface water monitoring shall be conducted immediately when any project activity has mobilized sediment or other pollutants resulting in a discharge and/or has the potential to alter background conditions within waters of the State (including but not limited to storm water runoff, concrete discharges,

leaks, and spills.). The continuing frequency is contingent upon results of field measurements and applicable water quality objectives.

Surface water monitoring field measurements shall be taken for pH and turbidity. In addition, visual observations of each location shall be documented daily for each established monitoring location and monitoring event and include the estimate of flow, appearance of the discharge including color, floating or suspended matter or debris, appearance of the receiving water at the point of discharge (occurrence of erosion and scouring, turbidity, solids deposition, unusual aquatic growth, etc), and observations about the receiving water, such as the presence of aquatic life. If a project activity has reached a steady state and is stable, then Caltrans may request a temporary reprieve from this condition from the Regional Water Board until an activity or discharge triggers the monitoring again.

22. Whenever, as a result of project activities (in-stream work or a discharge to receiving waters), downstream measurements exceed any water quality objective 100 feet downstream of the source(s) all necessary steps shall be taken to install, repair, and/or modify BMPs to control the source(s). The frequency of surface water monitoring shall increase to hourly and shall continue until measurements demonstrate compliance with water quality objectives for each parameter listed below and measured levels are no longer increasing as a result of project activities. In addition, the overall distance from the source(s) to the downstream extent of the exceedence of water quality objectives shall be measured.

Monitoring results shall be reported to appropriate Regional Water Board staff person by telephone within 24 hours of taking any measurements that exceed the limits detailed below (only report turbidity if it is higher than 20 NTU).

pH	<6.5 or >8.5 (any changes >0.5 units)
turbidity	20% above natural background

Monitoring results and upstream and downstream pictures within the working and/or disturbed area and discharge location shall be taken and submitted to the appropriate Regional Water Board staff within 24 hours of the incident. All other monitoring data documenting compliance with water quality objectives shall be reported on a monthly basis and is due to the Regional Water Board by the 15th of the following month.

23. Post Storm Event Reports:

- Once the project has begun ground-disturbing activities, and subsequent to a qualifying rain event that exceeds 0.5-inches of precipitation, Caltrans shall inspect the project within 24 hours and take photos of all discharge locations, and disturbed areas, including all excess materials disposal areas, in order to demonstrate that erosion control and revegetation measures are present and have been installed appropriately and are functioning effectively. A brief report

containing these photos, corrective actions (if necessary), and any surface water monitoring results collected pursuant to this Order or the Construction General Permit (SWRCB Order 2009-009 DWQ) shall be submitted to the Regional Water Board within 10 days after the end of the qualifying rain event. Inspections are required daily during extended rain events. Once the project site is stable, in a steady state (channel- ground- or vegetation-disturbing activities have ceased), and has demonstrated sufficient and effective erosion and sediment control, Caltrans may request a reprieve from this condition from the Regional Water Board. At least one post-construction inspection is required to demonstrate sufficient and effective erosion and sediment control and compliance with the Basin Plan.

- Rain events are periods of precipitation that that are separated by more than 48-hours of dry weather. Rainfall amounts may be taken from on-site rain gauges, from the nearest California Data Exchange Center station (<http://cdec.water.ca.gov>), or by a custom method or station approved by Regional Water Board staff.

24. Caltrans shall provide the Regional Water Board with proof of purchase of 0.010 acres of wetland mitigation credits from an agency approved mitigation bank of at least 30 days prior to conducting any channel- ground- or vegetation-disturbing activities.
25. 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 applicable state or federal law. For the purposes of section 401(d) of the Clean Water Act, the applicability of any state law authorizing remedies, penalties, process 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. In response to a suspected violation of any condition of this certification, the State Water Board may require the holder of any federal permit or license subject to this Order to furnish, under penalty of perjury, any technical or monitoring reports the State Water Board deems appropriate, provided 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. In response to any violation of the conditions of this Order, the Regional Water Board may add to or modify the conditions of this Order as appropriate to ensure compliance.
26. The Regional Water Board may add to or modify the conditions of this Order, as appropriate, to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act.

27. This Order is not transferable. In the event of any change in control of ownership of land presently owned or controlled by the Applicant, the Applicant shall notify the successor-in-interest of the existence of this Order by letter and shall forward a copy of the letter to the Regional Water Board. The successor-in-interest must send to the Regional Water Board Executive Officer a written request for transfer of this Order to discharge dredged or fill material under this Order. The request must contain the following:

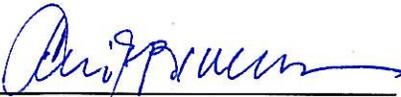
- a. requesting entity's full legal name
- b. the state of incorporation, if a corporation
- c. address and phone number of contact person
- d. description of any changes to the project or confirmation that the successor-in-interest intends to implement the project as described in this Order.

28. Except as may be modified by any preceding conditions, all certification actions are contingent on: a) the discharge being limited, and all proposed revegetation, avoidance, minimization, and mitigation measures being completed, in strict compliance with Caltrans' project description and CEQA documentation, as approved herein, b) Caltrans shall construct the project in accordance with the project described in the application and the findings above, and c) compliance with all applicable water quality requirements and water quality control plans including the requirements of the Water Quality Control Plan for the North Coast Region (Basin Plan), and amendments thereto. Any change in the design or implementation of the project that would have a significant or material effect on the findings, conclusions, or conditions of this Order must be submitted to the Executive Officer of the Regional Water Board for prior review, consideration, and written concurrence. If the Regional Water Board is not notified of a significant alteration to the project, it will be considered a violation of this Order, and Caltrans may be subject to Regional Water Board enforcement actions.

29. The authorization of this certification for any dredge and fill activities expires on June 26, 2017. Conditions and monitoring requirements outlined in this Order are not subject to the expiration date outlined above, and remain in full effect and are enforceable.

June 26, 2012

30. Please contact our staff Environmental Specialist / Caltrans Liaison Jeremiah Puget at (707) 576-2835 or jpuget@waterboards.ca.gov if you have any questions.


for Matthias St. John
Executive Officer

120626_JJP_ef_CDOT_Hwy116_Madrone_LTL_401Cert

Web link: State Water Resources Control Board Order No. 2003-0017 -DWQ, General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification can be found at: http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0017.pdf

Original to: Mr. Cyrus Vafai, Caltrans – District 4, 111 Grand Avenue, Oakland, CA 94612

Copies to: Ms. Lilian Acorda, Caltrans – District 4, 111 Grand Avenue, Oakland, CA 94612

Electronic
Copies to: U.S. Army Corps of Engineers, Regulatory Functions - San Francisco District



California Department of Fish and Game
Bay Delta Region
7329 SILVERADO TRAIL
NAPA, CA 94558

California Endangered Species Act
Incidental Take Permit No. 2081-2011-088-03

MADRONE AVENUE LEFT-TURN CHANNELIZATION PROJECT

Authority: This California Endangered Species Act (CESA) Incidental Take Permit (ITP) is issued by the Department of Fish and Game (DFG) pursuant to Fish and Game Code section 2081, subdivisions (b) and (c), and California Code of Regulations, Title 14, section 783.0 et seq. CESA prohibits the take¹ of any species of wildlife designated by the California Fish and Game Commission as an endangered, threatened, or candidate species.² DFG, however, may authorize the take of any such species by permit if the conditions set forth in Fish and Game Code section 2081, subdivisions (b) and (c) are met (See also Cal. Code Regs., tit. 14, § 783.4).

Permittee:	California Department of Transportation
Principal Officer:	Lilian Acorda, Senior Transportation Engineer
Contact Person:	John Yeakel, (510) 286-5681
Mailing Address:	111 Grand Avenue Oakland, CA 94612

Effective Date and Expiration Date of this ITP:

This ITP shall be executed in duplicate original form and shall become effective once a duplicate original is acknowledged by signature of the Permittee on the last page of this ITP and returned to DFG's Habitat Conservation Planning Branch at the address listed in the Notices section of this ITP. Unless renewed by DFG, this ITP's authorization to take the Covered Species shall expire on **December 31, 2014**.

Notwithstanding the expiration date on the take authorization provided by this ITP, Permittee's obligations pursuant to this ITP do not end until DFG accepts as complete the Permittee's Final Mitigation Report required by Condition 5.8 of this ITP.

Project Location:

The Madrone Avenue Left-Turn Channelization Project (Project) is located between Post Mile (PM) 34.28 on State Route 116 extending between east of Stony Point Road (PM 34.09) and west of Alder Avenue (PM 34.47) within the City of Cotati, Sonoma County (See Figure 1). The Project site is bounded by State Route 116 to the east and west.

¹ Pursuant to Fish and Game Code section 86, "'Take' means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill."

² "Candidate species" are species of wildlife that have not yet been placed on the list of endangered species or the list of threatened species, but which are under formal consideration for listing pursuant to Fish and Game Code section 2074.2.

Project Description:

The proposed Project footprint is 3.49 acres and includes the permanent development of 0.62 acres of undeveloped land into a left-turn lane in each direction. Of the remaining 2.87 acres, 0.047 acres of undeveloped land will be temporarily impacted and 2.823 acres are hardscaped. Project activities include grading of the entire Project site, road widening on the northern side, culvert lengthening, remove and reinstall headwalls, excavation, and other activities.

Covered Species Subject to Take Authorization Provided by this ITP:

This ITP covers the following species:

Name	CESA Status ³
1. California tiger salamander (<i>Ambystoma californiense</i>)	Threatened ⁴

This species and only this species is hereinafter referred to as "Covered Species."

Impacts of the Taking on Covered Species:

Project activities and their resulting impacts are expected to result in the incidental take of individuals of the Covered Species. Small mammal burrows currently in the Project Area may be inhabited by the aestivating Covered Species during the dry season, when construction is scheduled. The activities described above that are expected to result in incidental take of individuals of the Covered Species are grading, excavation, and installation of culverts (Covered Activities). Incidental take of individuals of the Covered Species may occur from the Covered Activities in the form of mortality ("kill") crushing and/or entombing. Incidental take of individuals of the Covered Species may also occur from the Covered Activities in the form of pursue, catch, capture, or attempt to do so of the Covered Species from the biologists attempts to capture the Covered Species for relocation as required by this ITP. Take could occur from PM 34.09 to PM 34.47 on State Route 116 (Project Area). The Project will also cause the permanent loss of 0.62 acres of habitat for the Covered Species and temporary loss of 0.047 acres of habitat for the Covered Species. Impacts of the proposed taking also include adverse impacts to the Covered Species related to temporal losses, increased habitat fragmentation and edge effects, and the Project's incremental contribution to cumulative impacts (indirect impacts). These impacts include: stress from capture and relocation, increased vulnerability to predation, and the long-term effects due to permanent loss of upland habitat.

Incidental Take Authorization of Covered Species:

This ITP authorizes incidental take of the Covered Species and only the Covered Species. With respect to incidental take of the Covered Species, DFG authorizes the Permittee, its employees, contractors, and agents to take Covered Species incidentally in carrying out the Covered

³ Under CESA, a species may be on the list of endangered species, the list of threatened species, or the list of candidate species. All other species are "unlisted."

⁴ See Cal. Code Regs. tit. 14 § 670.5, subd. (b)(3)(G).

Activities, subject to the limitations described in this section and the Conditions of Approval identified below. This ITP does not authorize take of Covered Species from activities outside the scope of the Covered Activities, take of Covered Species outside of the Project Area, take of Covered Species resulting from violation of this ITP, or intentional take of Covered Species except for capture and relocation of Covered Species as authorized by this ITP.

Conditions of Approval:

Unless specified otherwise, the following measures shall pertain to all Covered Activities within the Project Area, including areas used for ingress and egress, staging and parking. DFG's issuance of this ITP and Permittee's authorization to take the Covered Species are subject to Permittee's compliance with and implementation of the following Conditions of Approval:

1. **Legal Compliance:** Permittee shall comply with all applicable State, federal, and local laws in existence on the effective date of this ITP or adopted thereafter.
2. **CEQA Compliance:** Permittee shall implement and adhere to the mitigation measures related to the Covered Species in the Biological Resources section of the Mitigated Negative Declaration (SCH Number: 2012042005) adopted by the lead agency, California Department of Transportation, for the Project pursuant to the California Environmental Quality Act (CEQA) on June 20, 2012.
3. **ESA Compliance:** Permittee shall implement and adhere to the terms and conditions related to the Covered Species in the Biological Opinion for the Proposed State Route 116 Madrone Avenue Left-Turn Channelization Project, Sonoma County, California (Caltrans EA1G2401) (Biological Opinion #08ESMF00-2012-F0127-3) for the Project pursuant to the Federal Endangered Species Act (ESA), unless those terms and conditions are less protective of the Covered Species or conflict with the conditions of this ITP.
4. **ITP Time Frame Compliance:** Permittee shall fully implement and adhere to the conditions of this ITP within the time frames set forth below and as set forth in the Mitigation Monitoring and Reporting Program (MMRP), which is included as Attachment 1 to this ITP.
5. **General Provisions:**
 - 5.1. Designated Representative. Before starting Covered Activities, Permittee shall designate a representative (Designated Representative) responsible for communications with DFG and overseeing compliance with this ITP. Permittee shall notify DFG in writing before starting Covered Activities of the Designated Representative's name, business address, and contact information, and shall notify DFG in writing if a substitute Designated Representative is selected or identified at any time during the term of this ITP.
 - 5.2. Designated Biologist. Permittee shall submit to DFG in writing the name, qualifications, business address, and contact information of a biological monitor (Designated Biologist) at least 30 days before starting Covered Activities. Permittee shall ensure that the Designated Biologist is knowledgeable and experienced in the biology, natural history,

collecting and handling of the Covered Species. The Designated Biologist shall be responsible for monitoring Covered Activities to help minimize and fully mitigate or avoid the incidental take of individual Covered Species and to minimize disturbance of Covered Species' habitat. Permittee shall obtain DFG approval of the Designated Biologist in writing before starting Covered Activities, and shall also obtain approval in advance in writing if the Designated Biologist must be changed.

- 5.3. Designated Biologist Authority. To ensure compliance with the Conditions of Approval of this ITP, when the Designated Biologist(s) communicates to the Resident Engineer that an activity is not in compliance with this ITP, and/or provides a measure to avoid the unauthorized take of an individual of the Covered Species, or a state-listed species not covered by this ITP, the Resident Engineer shall immediately stop the activity that is not in compliance with this ITP, and/or order the immediate implementation of the measure to avoid the unauthorized take of an individual of the Covered Species, or the state-listed species not covered by this ITP.
- 5.4. Education Program. Permittee shall conduct an education program for all persons employed or otherwise working in the Project Area before performing any work. The program shall consist of a presentation from the Designated Biologist that includes a discussion of the biology and general behavior of the Covered Species, information about the distribution and habitat needs of the Covered Species, sensitivity of the Covered Species to human activities, its status pursuant to CESA including legal protection, recovery efforts, penalties for violations and Project-specific protective measures described in this ITP. Permittee shall provide interpretation for non-English speaking workers, and the same instruction shall be provided for any new workers before their performing work in the Project Area. Permittee shall prepare and distribute wallet-sized cards or a fact sheet handout containing this information for workers to carry in the Project Area. Upon completion of the program, employees shall sign a form stating they attended the program and understand all protection measures.
- 5.5. Construction Monitoring Notebook. The Designated Biologist shall maintain a construction-monitoring notebook on-site throughout the construction period which shall include a copy of this ITP with attachments and a list of signatures of all personnel who have successfully completed the education program. Permittee shall ensure a copy of the construction-monitoring notebook is available for review at the Project site upon request by DFG.
- 5.6. Trash Abatement. Permittee shall initiate a trash abatement program before starting Covered Activities and shall continue the program for the duration of the Project. Permittee shall ensure that trash and food items are contained in closed (animal-proof) containers and removed regularly (at least once every three days) to avoid attracting opportunistic predators such as ravens, coyotes, and feral dogs.
- 5.7. Dust Control. Permittee shall implement dust control measures during Covered Activities to facilitate visibility for monitoring of the Covered Species by the Designated

Biologist. Permittee shall keep the amount of water used to the minimum amount needed, and shall not allow water to form puddles.

- 5.8. Erosion Control Materials. Permittee shall prohibit use of erosion control materials potentially harmful to Covered Species and other species, such as mono-filament netting (erosion control matting) or similar material, in potential Covered Species' habitat.
- 5.9. Delineation of Property Boundaries. Before starting Covered Activities Permittee shall clearly delineate the boundaries of the Project Area with fencing, stakes or flags. Permittee shall restrict all Covered Activities to within the fenced, staked or flagged areas. Permittee shall maintain all fencing, stakes and flags until the completion of Covered Activities.
- 5.10. Delineation of Habitat. Permittee shall clearly delineate habitat of the Covered Species within the Project Area (identified as Environmental Sensitive Area (ESA) fencing on project plans) with posted signs, posting stakes, flags, and/or rope or cord, and place fencing as necessary to minimize the disturbance of Covered Species' habitat.
- 5.11. Project Access. Project-related personnel shall access the Project Area using existing routes, and shall not cross Covered Species' habitat outside of or en route to the Project Area. Permittee shall restrict Project-related vehicle traffic to established roads, staging, and parking areas. Permittee shall ensure that vehicle speeds do not exceed 15 miles per hour on any unpaved roads to avoid Covered Species on or traversing the roads. If Permittee determines construction of routes for travel are necessary outside of the Project Area, the Designated Representative shall contact DFG for written approval before carrying out such an activity. DFG may require an amendment to this ITP if additional take of Covered Species may result from Project modification.
- 5.12. Staging Areas. Permittee shall confine all Project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to the Project Area using, to the extent possible, previously disturbed areas. Additionally, Permittee shall not use or cross Covered Species' habitat outside of the marked Project Area unless provided for as described in Condition 5.11 of this ITP.
- 5.13. Hazardous Waste. Permittee shall immediately stop and following pertinent State and federal statutes and regulations arrange for repair and clean up by qualified individuals of any fuel or hazardous waste leaks or spills at the time of occurrence, or as soon as it is safe to do so. Permittee shall exclude the storage and handling of hazardous materials from the Project Area and shall properly contain and dispose of any unused or leftover hazardous products off-site.
- 5.14. DFG Access. Permittee shall provide DFG staff with reasonable access to the Project and shall otherwise fully cooperate with DFG efforts to verify compliance with or effectiveness of mitigation measures set forth in this ITP.

5.15. Refuse Removal. Upon completion of Covered Activities, Permittee shall remove from the Project Area and properly dispose of all temporary fill and construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes.

6. Monitoring, Notification and Reporting Provisions:

- 6.1. Notification Before Commencement. The Designated Representative shall notify DFG 14 calendar days before starting Covered Activities and shall document compliance with all pre-Project Conditions of Approval before starting Covered Activities.
- 6.2. Notification of Non-compliance. The Designated Representative shall immediately notify DFG in writing if it determines that the Permittee is not in compliance with any Condition of Approval of this ITP, including but not limited to any actual or anticipated failure to implement measures within the time periods indicated in this ITP and/or the MMRP. The Designated Representative shall report any non-compliance with this ITP to DFG within 24 hours.
- 6.3. Compliance Monitoring. The Designated Biologist shall be on-site daily when Covered Activities occur. The Designated Biologist shall conduct compliance inspections to (1) minimize incidental take of the Covered Species; (2) prevent unlawful take of species; (3) check for compliance with all measures of this ITP; (4) check all exclusion zones; and (5) ensure that signs, stakes, and fencing are intact, and that Covered Activities are only occurring in the Project Area. The Designated Representative or Designated Biologist shall prepare daily written observation and inspection records summarizing: oversight activities and compliance inspections, observations of Covered Species and their sign, survey results, and monitoring activities required by this ITP. The Designated Biologist shall conduct compliance inspections a minimum of one per week during periods of inactivity and after clearing, grubbing, and grading are completed.
- 6.4. Quarterly Compliance Report. The Designated Representative or Designated Biologist shall compile the observation and inspection records identified in Condition 6.3 into a Quarterly Compliance Report and submit it to DFG along with a copy of the MMRP table with notes showing the current implementation status of each mitigation measure. Quarterly Compliance Reports shall be submitted to DFG's Regional Office at the office listed in the Notices section of this ITP and via e-mail to DFG's Regional Representative. At the time of this ITP's approval, the DFG Regional Representative is Melissa Escaron (mescaron@dfg.ca.gov). DFG may at any time increase the timing and number of compliance inspections and reports required under this provision depending upon the results of previous compliance inspections. If DFG determines the reporting schedule must be changed, DFG will notify Permittee in writing of the new reporting schedule.
- 6.5. Annual Status Report. Permittee shall provide DFG with an Annual Status Report (ASR) no later than January 31 of every year beginning with issuance of this ITP and continuing until DFG accepts the Final Mitigation Report identified below. Each ASR

shall include, at a minimum: (1) a summary of all Quarterly Compliance Reports for that year identified in Condition 6.4; (2) a general description of the status of the Project Area and Covered Activities, including actual or projected completion dates, if known; (3) a copy of the table in the MMRP with notes showing the current implementation status of each mitigation measure; (4) an assessment of the effectiveness of each completed or partially completed mitigation measure in avoiding, minimizing and mitigating Project impacts; (5) all available information about Project-related incidental take of the Covered Species; (6) an accounting of the number of acres subject to both temporary and permanent disturbance, both for the prior calendar year, and a total since ITP issuance; and (7) information about other Project impacts on the Covered Species.

6.6. Photographic Documentation of Covered Activities Area and Covered Activities.

Permittee shall conduct photo monitoring of the Covered Activities Area. Prior to commencement of work, Permittee shall establish a minimum of one photo point every 1/8 of a mile along the Project Area alignment or an alternative number of photo points that achieve the objectives below and are approved by DFG in writing. The photo points shall provide comprehensive views of the Project Area including areas where Covered Activities will occur. Prior to construction, Permittee shall photograph the Project Area from each of the established points, noting the direction and magnification of each photo. On a monthly basis, Permittee shall photograph the Project Area from established photo points using the same direction and magnification as pre-construction photos. Labeled copies of photographs taken at each photo point shall be provided to DFG as a component of Quarterly Compliance Reports (see Condition 6.4).

6.7. CNDDDB Observations. The Designated Biologist shall submit all observations of Covered Species to DFG's California Natural Diversity Database (CNDDDB) within 60 calendar days of the observation and the Designated Biologist shall include copies of the submitted forms with the next Quarterly Compliance Report or ASR, whichever is submitted first relative to the observation.

6.8. Final Mitigation Report. No later than 45 days after completion of all mitigation measures, Permittee shall provide DFG with a Final Mitigation Report. The Designated Biologist shall prepare the Final Mitigation Report which shall include, at a minimum: (1) a summary of all Quarterly Compliance Reports and all ASRs; (2) a copy of the table in the MMRP with notes showing when each of the mitigation measures was implemented; (3) all available information about Project-related incidental take of the Covered Species; (4) information about other Project impacts on the Covered Species; (5) beginning and ending dates of Covered Activities; (6) an assessment of the effectiveness of this ITP's Conditions of Approval in minimizing and fully mitigating Project impacts of the taking on Covered Species; (7) recommendations on how mitigation measures might be changed to more effectively minimize take and mitigate the impacts of future projects on the Covered Species; and (8) any other pertinent information.

6.9. Notification of Take or Injury. Permittee shall immediately notify the Designated Biologist if a Covered Species is taken or injured by a Project-related activity, or if a Covered Species is otherwise found dead or injured within the vicinity of the Project. The Designated Biologist or Designated Representative shall provide initial notification to DFG by calling the Regional Office at (707) 944-5500. The initial notification to DFG shall include information regarding the location, species, number of animals taken or injured, and the ITP Number. Following initial notification, Permittee shall send DFG a written report within two calendar days. The report shall include the date and time of the finding or incident, location of the animal or carcass, and if possible provide a photograph, explanation as to cause of take or injury, and any other pertinent information.

7. Take Minimization Measures:

The following requirements are intended to ensure the minimization of incidental take of Covered Species in the Project Area during Covered Activities. Permittee shall implement and adhere to the following conditions to minimize take of Covered Species:

- 7.1. Pre-construction Survey. Prior to the start of Covered Activities, the Designated Biologist shall perform a pre-construction survey within the boundaries of the Project Area.
- 7.2. Wildlife Checks. Before the start of work each morning, the Designated Biologist shall check for wildlife under any equipment such as vehicles and stored pipes. The Designated Biologist shall check all excavated steep-walled holes or trenches greater than one-foot deep for any wildlife. Wildlife shall be removed by the Designated Biologist and translocated to a safe location (see Condition 7.8).
- 7.3. Grading and Clearing. Grading and clearing shall be conducted between April 15 and October 15, of any given year.
- 7.4. Vegetation Trimming. In areas of tall grass or vegetation excluding any areas protected by ESA fencing, Permittee shall trim vegetation using a weed whacker to a height of six inches (6").
- 7.5. Trench Escape. To prevent inadvertent entrapment of wildlife during construction and periods of inactivity, the Designated Biologist shall ensure all excavated trenches and holes both of which are greater than six inches (6") deep with sides steeper than thirty degrees (30°) are provided with one or more escape ramps prior to sunrise each morning. Before such trenches or holes are filled, they will be thoroughly inspected for trapped animals by the Designated Biologist. If at any time a trapped animal is discovered, the Designated Biologist shall move the animal to a safe nearby location as described in Condition 7.8.
- 7.6. Temporary Barrier. Before beginning Covered Activities, Permittee shall construct a temporary barrier along the limits of grading and disturbance. The barrier will consist of silt fencing at least six inches (6") above grade. The Designated Biologist shall inspect

the area prior to installation of the barrier. The barrier shall be designed to prevent the Covered Species from entering the construction site. The barrier may be removed during daily construction activities and must be replaced every night. The barrier must remain in place every evening until all Covered Activities have been completed. The Designated Biologist shall inspect the barrier daily and the Permittee shall maintain and repair it as necessary to ensure that it is functional.

- 7.7. Covered Species Construction Monitoring. The Designated Biologist shall complete walking surveys following earth moving equipment to look for the Covered Species. If the Covered Species is discovered then the Designated Biologist shall relocate the Covered Species (see Condition 7.8).
- 7.8. Covered Species Relocation. The Designated Biologist shall relocate the Covered Species found within the Project Area to appropriate habitat approved by the U.S. Fish and Wildlife Service (USFWS) and DFG and monitor the Covered Species until it is determined that the Covered Species is not imperiled by predators or other dangers. The captured Covered Species shall not be relocated to another's property without the owner's written permission.
- 7.9. Covered Species Handling. The Designated Biologist shall limit the duration of handling and captivity. While in captivity, the Covered Species shall be kept in a cool, dark, moist, aerated environment, such as a clean and disinfected bucket or plastic container with a damp sponge. Containers used for holding or transporting shall not contain any standing water.
- 7.10. Covered Species Injury. If a Covered Species is injured as a result of Project-related activities, the Designated Biologist shall immediately take it to a USFWS and DFG-approved wildlife rehabilitation, veterinary facility, or other qualified individual. Permittee shall identify the facility before starting Covered Activities. Permittee shall bear any costs associated with the care or treatment of such injured Covered Species. The Permittee shall notify DFG of the injury to the Covered Species immediately by telephone and e-mail followed by a written incident report. Notification shall include the ITP number, date, time, location, circumstances of the incident, and the name of the facility or individual where the Covered Species was taken.
- 7.11. Equipment Maintenance. All equipment shall be maintained such that there will be no leaks of automotive fluids such as gasoline, oils, or solvents.
- 7.12. Re-vegetation. Permittee shall re-vegetate Project Areas temporarily disturbed by Covered Activities with plants approved by DFG when Covered Activities have been completed.

8. Habitat Management Land Acquisition and Restoration:

DFG has determined that permanent protection and perpetual management of compensatory habitat is necessary and required pursuant to CESA to fully mitigate Project-related impacts of the taking on the Covered Species that will result with implementation of the Covered Activities. This determination is based on factors including an assessment of the importance of the habitat in the Project Area, the extent to which the Covered Activities will impact the habitat, and DFG's estimate of the acreage required to provide for adequate compensation.

To meet this requirement, the Permittee shall purchase 1.33 acres of Covered Species credits from a DFG-approved mitigation or conservation bank (Condition 8.2). Purchase of Covered Species credits must be complete before starting Covered Activities, or within 18 months of the effective date of this ITP if Security is provided pursuant to Condition 8 below. The Permittee shall also restore on-site 0.047 acres of temporarily impacted Covered Species habitat pursuant to Condition 8.4 below.

- 8.1. Covered Species Credits. Prior to initiating Covered Activities, or no later than 18 months from the issuance of this ITP if Security is provided pursuant to Condition 8 below, the Permittee shall purchase 1.33 acres of Covered Species credits from a DFG-approved mitigation or conservation bank.
- 8.2. Covered Species Credits Cost Estimates. DFG has estimated the cost of the purchase of Covered Species credits as follows as \$118,000/acre for 1.33 acres **\$156,940**.
- 8.3. Habitat Restoration. Permittee shall restore on-site the 0.047 acres of Covered Species habitat that will be temporarily disturbed during construction to pre-project or better conditions. Within 6 months of issuance of this ITP, the Permittee shall prepare a Vegetation Restoration Plan to facilitate re-vegetation of the 0.047 acres of temporary construction disturbance on-site, and shall ensure that the Plan is successfully implemented by the contractor. The Plan shall include detailed specifications for restoring all temporarily disturbed areas, such as seed mixes and application methods.
- 8.4. On-site Restoration Cost Estimates. Restoration of on-site temporary and long-term effects to Covered Species habitat as described in Condition 8.3, estimated at **\$100.00**.

9. Performance Security

The Permittee may proceed with Covered Activities only after the Permittee has ensured funding (Security) to complete any activity required by Conditions 8.1 and 8.3 that has not been completed before Covered Activities begin. Permittee shall provide Security as follows:

- 9.1. Security Amount. The Security shall be in the amount of **\$157,940**. This amount is based on the cost estimates identified in Conditions 8.2 and 8.4 above.

- 9.2. Security Form. The Security shall be in the form of a funding assurance letter signed by the Deputy District Directors of Environmental Planning and Engineering and Project Management or another form of Security, approved in advance in writing by DFG's Office of the General Counsel or another mechanism approved in advance in writing by DFG's Office of the General Counsel.
- 9.3. Security Timeline. The Security shall be provided to DFG before Covered Activities begin or within 30 days after the effective date of this ITP, whichever occurs first.

Even if Security is provided, the Permittee must complete Covered Species credit purchase no later than 18 months from the effective date of this ITP. DFG may require the Permittee to provide additional HM lands and/or additional funding to ensure the impacts of the taking are minimized and fully mitigated, as required by law, if the Permittee does not complete these requirements within the specified timeframe.

Amendment:

This ITP may be amended as provided by California Code of Regulations, Title 14, section 783.6, subdivision (c), and other applicable regulations and law. This ITP may also be amended without the concurrence of the Permittee as required by law, including if DFG determines that continued implementation of the Project under existing ITP conditions would jeopardize the continued existence of the Covered Species or that Project changes or changed biological conditions necessitate an ITP amendment to ensure that impacts to the Covered Species are minimized and fully mitigated.

Stop-Work Order:

DFG may issue Permittee a written stop-work order to suspend any activity covered by this ITP for an initial period of up to 25 days to prevent or remedy a violation of any ITP condition(s) (including but not limited to failure to comply with reporting, monitoring, or habitat acquisition obligations) or to prevent the illegal take of an endangered, threatened, or candidate species. Permittee shall comply with the stop-work order immediately upon receipt thereof. DFG may extend a stop-work order under this provision for a period not to exceed 25 additional days, upon written notice to the Permittee. DFG may commence the formal suspension process pursuant to California Code of Regulations, Title 14, section 783.7 within five working days of issuing a stop-work order. Neither the Designated Biologist nor DFG shall be liable for any costs incurred in complying with stop-work orders.

Compliance with Other Laws:

This ITP contains DFG's requirements for the Project pursuant to CESA. This ITP does not necessarily create an entitlement to proceed with the Project. Permittee is responsible for complying with all other applicable State, federal, and local laws.

Notices:

The Permittee shall deliver a fully executed duplicate original ITP by registered first class mail or overnight delivery to the following address:

Incidental Take Permit
No. 2081-2011-088-03
CALIFORNIA DEPARTMENT OF TRANSPORTATION
MADRONE AVENUE LEFT-TURN CHANNELIZATION PROJECT

California Department of Fish and Game
Attention: Regional Manager
7329 Silverado Trail
Napa, CA 94558

Written notices, reports and other communications relating to this ITP shall be delivered to DFG by registered first class mail at the following addresses, or at addresses DFG may subsequently provide the Permittee. Notices, reports, and other communications shall reference the Project name, Permittee, and ITP Number (2081-2011-088-03) in a cover letter and on any other associated documents.

Original cover with attachment(s) to:

Scott Wilson, Acting Regional Manager
California Department of Fish and Game
7329 Silverado Trail
Napa, CA 94558
Telephone (707) 944-5500

Copy of cover without attachment(s) to:

Office of the General Counsel
California Department of Fish and Game
1416 Ninth Street, 12th Floor
Sacramento, CA 95814

And:

Habitat Conservation Planning Branch
California Department of Fish and Game
1416 Ninth Street, Suite 1260
Sacramento, CA 95814

Unless Permittee is notified otherwise, DFG's Regional Representative for purposes of addressing issues that arise during implementation of this ITP is:

Melissa Escaron, Staff Environmental Scientist
California Department of Fish and Game
7329 Silverado Trail
Napa, CA 94558
Telephone (707) 339-0334
Email: mescaron@dfg.ca.gov

Compliance with CEQA:

DFG's issuance of this ITP is subject to CEQA. DFG is a responsible agency pursuant to CEQA with respect to this ITP because of prior environmental review of the Project by the lead agency, California Department of Transportation (See generally Pub. Resources Code, §§ 21067, 21069). The lead agency's prior environmental review of the Project is set forth in the Madrone Channelization Project Recirculated Initial Study with Mitigated Negative Declaration, (State

Incidental Take Permit
No. 2081-2011-088-03

CALIFORNIA DEPARTMENT OF TRANSPORTATION
MADRONE AVENUE LEFT-TURN CHANNELIZATION PROJECT

Clearinghouse #2012042005) dated May 2012 that the California Department of Transportation adopted for the Madrone Avenue Left-Turn Channelization Project on June 20, 2012. At the time the lead agency adopted the Mitigated Negative Declaration and approved the Project it also adopted all mitigation measures described in the Mitigated Negative Declaration as conditions of Project approval.

In fulfilling its obligations as a responsible agency, DFG's obligations pursuant to CEQA are more limited than those of the lead agency. DFG, in particular, is responsible for considering only the effects of those Project activities that it is required by law to carry out or approve, and mitigating or avoiding only the direct or indirect environmental effects of those parts of the Project that it decides to carry out, finance, or approve [Pub. Resources Code, § 21002.1, subd. (d); CEQA Guidelines, §§ 15041, subd. (b), 15096, subds. (f)-(g)]⁵. Accordingly, because DFG's exercise of discretion is limited to issuance of this ITP, DFG is responsible for considering only the environmental effects that fall within its permitting authority pursuant to CESA.

This ITP, along with DFG's CEQA findings for this ITP and Project, which are available as a separate document, provide evidence of DFG's consideration of the lead agency's Mitigated Negative Declaration for the Project and the environmental effects related to issuance of this ITP [CEQA Guidelines, § 15096, subd. (f)]. DFG finds that issuance of this ITP will not result in any previously undisclosed potentially significant effects on the environment or a substantial increase in the severity of any potentially significant environmental effects previously disclosed by the lead agency. Furthermore, to the extent the potential for such effects exists, DFG finds adherence to and implementation of the Conditions of Project Approval adopted by the lead agency, as well as adherence to and implementation of the Conditions of Approval imposed by DFG through the issuance of this ITP, will avoid or reduce to below a level of significance any such potential effects. DFG consequently finds that issuance of this ITP will not result in any significant, adverse impacts on the environment.

Findings Pursuant to CESA:

These findings are intended to document DFG's compliance with the specific findings requirements set forth in CESA and related regulations [Fish and Game Code § 2081, subs. (b)-(c); Cal. Code Regs., tit. 14, §§ 783.4, subds. (a)-(b), 783.5, subd. (c)(2)].

DFG finds based on substantial evidence in the ITP application, the Madrone Channelization Project Recirculated Initial Study with Mitigated Negative Declaration, the results of two site visits and consultations, and the administrative record of proceedings, that issuance of this ITP complies and is consistent with the criteria governing the issuance of ITPs pursuant to CESA:

- (1) Take of Covered Species as defined in this ITP will be incidental to the otherwise lawful activities covered under this ITP;
- (2) Impacts of the taking on Covered Species will be minimized and fully mitigated through the implementation of measures required by this ITP and as described in the MMRP.

⁵ The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

Measures include: (1) permanent habitat protection by the purchase of Covered Species credits; (2) establishment of avoidance zones; (3) worker education; and (4) Quarterly Compliance Reports. DFG evaluated factors including an assessment of the importance of the habitat in the Project Area, the extent to which the Covered Activities will impact the habitat, and DFG's estimate of the acreage required to provide for adequate compensation. Based on this evaluation, DFG determined that the protection and management in perpetuity of 1.33 acres of compensatory habitat that is contiguous with other protected Covered Species habitat and/or is of higher quality than the habitat being destroyed by the Project, along with the minimization, monitoring, reporting, and funding requirements of this ITP minimizes and fully mitigates the impacts of the taking caused by the Project;

- (3) The take avoidance and mitigation measures required pursuant to the conditions of this ITP and its attachments are roughly proportional in extent to the impacts of the taking authorized by this ITP;
- (4) The measures required by this ITP maintain Permittee's objectives to the greatest extent possible;
- (5) All required measures are capable of successful implementation;
- (6) This ITP is consistent with any regulations adopted pursuant to Fish and Game Code sections 2112 and 2114;
- (7) Permittee has ensured adequate funding to implement the measures required by this ITP as well as for monitoring compliance with, and the effectiveness of, those measures for the Project; and
- (8) Issuance of this ITP will not jeopardize the continued existence of the Covered Species based on the best scientific and other information reasonably available, and this finding includes consideration of the species' capability to survive and reproduce, and any adverse impacts of the taking on those abilities in light of (1) known population trends; (2) known threats to the species; and (3) reasonably foreseeable impacts on the species from other related projects and activities. Moreover, DFG's finding is based, in part, on DFG's express authority to amend the terms and conditions of this ITP without concurrence of the Permittee as necessary to avoid jeopardy and as required by law.

Attachments:

FIGURE 1
ATTACHMENT 1

Map of Project Area
Mitigation Monitoring and Reporting Program

Incidental Take Permit
No. 2081-2011-088-03
CALIFORNIA DEPARTMENT OF TRANSPORTATION
MADRONE AVENUE LEFT-TURN CHANNELIZATION PROJECT

ISSUED BY THE CALIFORNIA DEPARTMENT OF FISH AND GAME

on 6/25/12.



Scott Wilson, Acting Regional Manager
BAY DELTA REGION

ACKNOWLEDGMENT

The undersigned: (1) warrants that he or she is acting as a duly authorized representative of the Permittee, (2) acknowledges receipt of this ITP, and (3) agrees on behalf of the Permittee to comply with all terms and conditions

By: 

Date: JUNE 27, 2012

Printed Name: LILIAN A. ACORDA

Title: PROJECT MANAGER

Incidental Take Permit
No. 2081-2011-088-03
CALIFORNIA DEPARTMENT OF TRANSPORTATION
MADRONE AVENUE LEFT-TURN CHANNELIZATION PROJECT

Attachment 1

**CALIFORNIA DEPARTMENT OF FISH AND GAME
MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)
CALIFORNIA ENDANGERED SPECIES ACT**

INCIDENTAL TAKE PERMIT NO. 2081-2011-088-03

PERMITTEE: California Department of Transportation

PROJECT: Madrone Avenue Left-Turn Channelization Project

PURPOSE OF THE MMRP

The purpose of the MMRP is to ensure that the impact minimization and mitigation measures required by the Department of Fish and Game (DFG) for the above-referenced Project are properly implemented, and thereby to ensure compliance with section 2081(b) of the Fish and Game Code and section 21081.6 of the Public Resources Code. A table summarizing the mitigation measures required by DFG is attached. This table is a tool for use in monitoring and reporting on implementation of mitigation measures, but the descriptions in the table do not supersede the mitigation measures set forth in the California Incidental Take Permit (ITP) and in attachments to the ITP, and the omission of a permit requirement from the attached table does not relieve the Permittee of the obligation to ensure the requirement is performed.

OBLIGATIONS OF PERMITTEE

Mitigation measures must be implemented within the time periods indicated in the table that appears below. Permittee has the primary responsibility for monitoring compliance of all mitigation measures and for reporting to DFG on the progress in implementing those measures. These monitoring and reporting requirements are set forth in the ITP itself and are summarized at the front of the attached table.

VERIFICATION OF COMPLIANCE, EFFECTIVENESS

DFG may, at its sole discretion, verify compliance with any mitigation measure or independently assess the effectiveness of any mitigation measure.

TABLE OF MITIGATION MEASURES

The following items are identified for each mitigation measure: Mitigation Measure, Source, Implementation Schedule, Responsible Party, and Status/Date/Initials. The Mitigation Measure column summarizes the mitigation requirements of the ITP. The Source column identifies the ITP condition that sets forth the mitigation measure. The Implementation Schedule column shows the date or phase when each mitigation measure will be implemented. The Responsible Party column identifies the person or agency that is primarily responsible for implementing the mitigation measure. The Status/Date/Initials column shall be completed by the Permittee during preparation of each Status Report and the Final Mitigation Report, and must identify the implementation status of each mitigation measure, the date that status was determined, and the initials of the person determining the status.

Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
BEFORE DISTURBING SOIL OR VEGETATION				
1	ITP Condition # 5.1	Before commencing ground- or vegetation-disturbing activities/ Entire Project	Permittee	
2	ITP Condition # 5.2	Before commencing ground- or vegetation-disturbing activities/ Entire Project	Permittee	
3	ITP Condition # 5.4	Before commencing ground- or vegetation-disturbing activities/ Entire Project	Permittee	
4	ITP Condition # 5.6	Before commencing ground- or vegetation-disturbing activities/ Entire Project	Permittee	
5	ITP Condition # 5.9	Before commencing ground- or vegetation-disturbing activities/ Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
6	<p>Permittee shall clearly delineate habitat of the Covered Species within the Project Area (identified as Environmental Sensitive Area (ESA) fencing on project plans) with posted signs, posting stakes, flags, and/or rope or cord, and place fencing as necessary to minimize the disturbance of Covered Species' habitat.</p>	<p>ITP Condition # 5.10</p>	<p>Before commencing ground- or vegetation-disturbing activities/ Entire Project</p>	<p>Permittee</p>	
7	<p>Project-related personnel shall access the Project Area using existing routes, and shall not cross Covered Species' habitat outside of or en route to the Project Area. Permittee shall restrict Project-related vehicle traffic to established roads, staging, and parking areas. Permittee shall ensure that vehicle speeds do not exceed 15 miles per hour on any unpaved roads to avoid Covered Species on or traversing the roads. If Permittee determines construction of routes for travel are necessary outside of the Project Area, the Designated Representative shall contact DFG for written approval before carrying out such an activity. DFG may require an amendment to this ITP if additional take of Covered Species may result from Project modification.</p>	<p>ITP Condition # 5.11</p>	<p>Before commencing ground- or vegetation-disturbing activities/ Entire Project</p>	<p>Permittee</p>	
8	<p>Permittee shall confine all Project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to the Project Area using, to the extent possible, previously disturbed areas. Additionally, Permittee shall not use or cross Covered Species' habitat outside of the marked Project Area unless provided for as described in Condition 5.11 of this ITP.</p>	<p>ITP Condition # 5.12</p>	<p>Before commencing ground- or vegetation-disturbing activities/ Entire Project</p>	<p>Permittee</p>	
9	<p>The Designated Representative shall notify DFG 14 calendar days before starting Covered Activities and shall document compliance with all pre-Project Conditions of Approval before starting Covered Activities.</p>	<p>ITP Condition # 6.1</p>	<p>Before commencing ground- or vegetation-disturbing activities</p>	<p>Permittee</p>	
10	<p>The Designated Representative shall immediately notify DFG in writing if it determines that the Permittee is not in compliance with any Condition of Approval of this ITP, including but not limited to any actual or anticipated failure to implement measures within the time periods indicated in this ITP and/or the MMRP. The Designated Representative shall report any non-compliance with this ITP to DFG within 24 hours.</p>	<p>ITP Condition # 6.2</p>	<p>Before commencing ground- or vegetation-disturbing activities/ Entire Project</p>	<p>Permittee</p>	
11	<p>The Designated Biologist shall submit all observations of Covered Species to DFG's California Natural Diversity Database (CNDDB) within 60 calendar days of the observation and the Designated Biologist shall include copies of the submitted forms with the next Quarterly Compliance Report or ASR, whichever is submitted first relative to the observation.</p>	<p>ITP Condition #6.7</p>	<p>Before commencing ground- or vegetation-disturbing activities/ Entire Project</p>	<p>Permittee</p>	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
12	<p>Permittee shall immediately notify the Designated Biologist if a Covered Species is taken or injured by a Project-related activity, or if a Covered Species is otherwise found dead or injured within the vicinity of the Project. The Designated Biologist or Designated Representative shall provide initial notification to DFG by calling the Regional Office at (707) 944-5500. The initial notification to DFG shall include information regarding the location, species, number of animals taken or injured, and the ITP Number. Following initial notification, Permittee shall send DFG a written report within two calendar days. The report shall include the date and time of the finding or incident, location of the animal or carcass, and if possible provide a photograph, explanation as to cause of take or injury, and any other pertinent information.</p> <p>Prior to the start of Covered Activities, the Designated Biologist shall perform a pre-construction survey within the boundaries of the Project Area.</p>	<p>ITP Conditions # 6.9</p>	<p>Before commencing ground- or vegetation-disturbing activities/ Entire Project</p>	<p>Permittee</p>	
13	<p>Prior to the start of Covered Activities, the Designated Biologist shall perform a pre-construction survey within the boundaries of the Project Area.</p>	<p>ITP Conditions # 7.1</p>	<p>Before commencing ground- or vegetation-disturbing activities</p>	<p>Permittee</p>	
14	<p>In areas of tall grass or vegetation excluding any areas protected by ESA fencing, Permittee shall trim vegetation using a weed whacker to a height of six inches (6").</p>	<p>ITP Conditions # 7.4</p>	<p>Before commencing ground- or vegetation-disturbing activities</p>	<p>Permittee</p>	
15	<p>Before beginning Covered Activities, Permittee shall construct a temporary barrier along the limits of grading and disturbance. The barrier will consist of silt fencing at least six inches (6") above grade. The Designated Biologist shall inspect the area prior to installation of the barrier. The barrier shall be designed to prevent the Covered Species from entering the construction site. The barrier may be removed during daily construction activities and must be replaced every night. The barrier must remain in place every evening until all Covered Activities have been completed. The Designated Biologist shall inspect the barrier daily and the Permittee shall maintain and repair it as necessary to ensure that it is functional.</p>	<p>ITP Condition # 7.6</p>	<p>Before commencing ground- or vegetation-disturbing activities/ Entire Project</p>	<p>Permittee</p>	
16	<p>The Designated Biologist shall relocate the Covered Species found within the Project Area to appropriate habitat approved by the U.S. Fish and Wildlife Service (USFWS) and DFG and monitor the Covered Species until it is determined that the Covered Species is not imperiled by predators or other dangers. The captured Covered Species shall not be relocated to another's property without the owner's written permission.</p>	<p>ITP Condition # 7.8</p>	<p>Before commencing ground- or vegetation-disturbing activities/ Entire Project</p>	<p>Permittee</p>	
17	<p>The Designated Biologist shall limit the duration of handling and captivity. While in captivity, the Covered Species shall be kept in a cool, dark, moist, aerated environment, such as a clean and disinfected bucket or plastic container with a damp sponge. Containers used for holding or transporting shall not contain any standing water.</p>	<p>ITP Condition # 7.9</p>	<p>Before commencing ground- or vegetation-disturbing activities/ Entire Project</p>	<p>Permittee</p>	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
18	If a Covered Species is injured as a result of Project-related activities, the Designated Biologist shall immediately take it to a USFWS and DFG-approved wildlife rehabilitation, veterinary facility, or other qualified individual. Permittee shall identify the facility before starting Covered Activities. Permittee shall bear any costs associated with the care or treatment of such injured Covered Species. The Permittee shall notify DFG of the injury to the Covered Species immediately by telephone and e-mail followed by a written incident report. Notification shall include the ITP number, date, time, location, circumstances of the incident, and the name of the facility or individual where the Covered Species was taken.	ITP Condition # 7.10	Before commencing ground- or vegetation-disturbing activities/ Entire Project	Permittee	
19	Prior to initiating Covered Activities, or no later than 18 months from the issuance of this ITP if Security is provided pursuant to Condition 8, the Permittee shall purchase 1.33 acres of Covered Species credits from a DFG-approved mitigation or conservation bank. DFG has estimated the cost of the purchase of Covered Species credits as \$118,000/acre for 1.33 acres \$156,940.	ITP Conditions # 8.1 and 8.2	Before commencing ground- or vegetation-disturbing activities/ Within 18 months of issuance of the ITP	Permittee	
20	Permittee shall restore on-site the 0.047 acres of Covered Species habitat that will be temporarily disturbed during construction to pre-project or better conditions. Within 6 months of issuance of this ITP, the Permittee shall prepare a Vegetation Restoration Plan to facilitate revegetation of the 0.047 acres of temporary construction disturbance on-site, and shall ensure that the Plan is successfully implemented by the contractor. The Plan shall include detailed specifications for restoring all temporarily disturbed areas, such as seed mixes and application methods. Restoration of on-site temporary and long term effects to Covered Species habitat estimated at \$ 100.00.	ITP Conditions # 8.3 and 8.4	Within 6 months of issuance of ITP/ Post Construction	Permittee	
21	The Security shall be in the amount of \$157,040. This amount is based on the cost estimates identified in Conditions 8.2 and 8.4. The Security shall be in the form of a funding assurance letter signed by the Deputy District Directors of Environmental Planning and Engineering and Project Management or another form of Security, approved in advance in writing by DFG's Office of the General Counsel or another mechanism approved in advance in writing by DFG's Office of the General Counsel. The Security shall be provided to DFG before Covered Activities begin or within 30 days after the effective date of this ITP, whichever occurs first.	ITP Conditions # 9.1, 9.2, and 9.3	Before commencing ground or vegetation disturbing activities/ with 30 days of issuance of the ITP	Permittee	
DURING CONSTRUCTION					
22	To ensure compliance with the Conditions of Approval of this ITP, when the Designated Biologist(s) communicates to the Resident Engineer that an activity is not in compliance with this ITP, and/or provides a measure to avoid the unauthorized take of an individual of the Covered Species, or a state-listed species not covered by this ITP, the Resident Engineer shall immediately stop the activity that is not in compliance with this ITP, and/or order the immediate implementation of the measure to avoid the unauthorized take of an individual of the Covered Species, or the state-listed species not covered by this ITP.	ITP Condition # 5.3	Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
23	The Designated Biologist shall maintain a construction-monitoring notebook on-site throughout the construction period which shall include a copy of this ITP with attachments and a list of signatures of all personnel who have successfully completed the education program. Permittee shall ensure a copy of the construction-monitoring notebook is available for review at the Project site upon request by DFG.	ITP Condition # 5.5	Entire Project	Permittee	
24	Permittee shall implement dust control measures during Covered Activities to facilitate visibility for monitoring of the Covered Species by the Designated Biologist. Permittee shall keep the amount of water used to the minimum amount needed, and shall not allow water to form puddles.	ITP Condition # 5.7	Entire Project	Permittee	
25	Permittee shall prohibit use of erosion control materials potentially harmful to Covered Species and other species, such as mono-filament netting (erosion control matting) or similar material, in potential Covered Species' habitat.	ITP Condition # 5.8	Entire Project	Permittee	
26	Permittee shall immediately stop and following pertinent State and federal statutes and regulations arrange for repair and clean up by qualified individuals of any fuel or hazardous waste leaks or spills at the time of occurrence, or as soon as it is safe to do so. Permittee shall exclude the storage and handling of hazardous materials from the Project Area and shall properly contain and dispose of any unused or leftover hazardous products off-site.	ITP Condition # 5.13	Entire Project	Permittee	
27	Permittee shall provide DFG staff with reasonable access to the Project and shall otherwise fully cooperate with DFG efforts to verify compliance with or effectiveness of mitigation measures set forth in this ITP.	ITP Condition # 5.14	Entire Project	Permittee	
28	The Designated Representative or Designated Biologist shall compile the observation and inspection records identified in Condition 6.3 into a Quarterly Compliance Report and submit it to DFG along with a copy of the MMRP table with notes showing the current implementation status of each mitigation measure. Quarterly Compliance Reports shall be submitted to DFG's Regional Office at the office listed in the Notices section of this ITP and via e-mail to DFG's Regional Representative. At the time of this ITP's approval, the DFG Regional Representative is Melissa Escaron (mescaron@dfg.ca.gov). DFG may at any time increase the timing and number of compliance inspections and reports required under this provision depending upon the results of previous compliance inspections. If DFG determines the reporting schedule must be changed, DFG will notify Permittee in writing of the new reporting schedule.	ITP Condition # 6.4	Entire Project	Permittee	
29	The Designated Biologist shall be on-site daily when Covered Activities occur. The Designated Biologist shall conduct compliance inspections to (1) minimize incidental take of the Covered Species; (2) prevent unlawful take of species; (3) check for compliance with all measures of this ITP; (4) check all exclusion zones; and (5) ensure that signs, stakes, and fencing are intact, and that Covered Activities are only occurring in the Project Area. The Designated Representative or Designated Biologist shall prepare daily written observation and inspection records summarizing oversight activities and compliance inspections, observations of Covered Species and their sign, survey results, and monitoring activities required by this ITP. The Designated Biologist shall conduct compliance inspections a minimum of one per week during periods of inactivity and after clearing, grubbing, and grading are completed.	ITP Condition # 6.3	Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
30	Permittee shall provide DFG with an Annual Status Report (ASR) no later than January 31 of every year beginning with issuance of this ITP and continuing until DFG accepts the Final Mitigation Report identified below. Each ASR shall include, at a minimum: (1) a summary of all Quarterly Compliance Reports for that year identified in Condition 6.4; (2) a general description of the status of the Project Area and Covered Activities, including actual or projected completion dates, if known; (3) a copy of the table in the MMRP with notes showing the current implementation status of each mitigation measure; (4) an assessment of the effectiveness of each completed or partially completed mitigation measure in avoiding, minimizing and mitigating Project impacts; (5) all available information about Project-related incidental take of the Covered Species; (6) an accounting of the number of acres subject to both temporary and permanent disturbance, both for the prior calendar year, and a total since ITP issuance; and (7) information about other Project impacts on the Covered Species.	ITP Condition # 6.5	Entire Project	Permittee	
31	Permittee shall conduct photo monitoring of the Covered Activities Area. Prior to commencement of work, Permittee shall establish a minimum of one photo point every 1/8 of a mile along the Project Area alignment or an alternative number of photo points that achieve the objectives below and are approved by DFG in writing. The photo points shall provide comprehensive views of the Project Area including areas where Covered Activities will occur. Prior to construction, Permittee shall photograph the Project Area from each of the established points, noting the direction and magnification of each photo. On a monthly basis, Permittee shall photograph the Project Area from established photo points using the same direction and magnification as pre-construction photos. Labeled copies of photographs taken at each photo point shall be provided to DFG as a component of Quarterly Compliance Reports (see Condition 6.4).	ITP Condition # 6.6	Entire Project	Permittee	
32	Before the start of work each morning, the Designated Biologist shall check for wildlife under any equipment such as vehicles and stored pipes. The Designated Biologist shall check all excavated steep-walled holes or trenches greater than one-foot deep for any wildlife. Wildlife shall be removed by the Designated Biologist and translocated to a safe location (see Condition 7.8).	ITP Condition # 7.2	Entire Project	Permittee	
33	Grading and clearing shall be conducted between April 15 and October 15, of any given year.	ITP Condition # 7.3	Entire Project	Permittee	
34	To prevent inadvertent entrapment of wildlife during construction and periods of inactivity, the Designated Biologist shall ensure all excavated trenches and holes are provided with one or more escape ramps prior to sunrise each morning. Before such trenches or holes are filled, they will be thoroughly inspected for trapped animals by the Designated Biologist. If at any time a trapped animal is discovered, the Designated Biologist shall move the animal to a safe nearby location as described in Condition 7.8.	ITP Condition # 7.5	Entire Project	Permittee	
35	The Designated Biologist shall complete walking surveys following earth moving equipment to look for the Covered Species. If the Covered Species is discovered then the Designated Biologist shall relocate the Covered Species (see Condition 7.8).	ITP Condition # 7.7	Entire Project	Permittee	
36	All equipment shall be maintained such that there will be no leaks of automotive fluids such as gasoline, oils, or solvents.	ITP Condition # 7.11	Entire Project	Permittee	

	Mitigation Measure	Source	Implementation Schedule	Responsible Party	Status / Date / Initials
POST-CONSTRUCTION					
37	Upon completion of Covered Activities, Permittee shall remove from the Project Area and properly dispose of all temporary fill and construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes.	ITP Condition # 5.15	Post-construction	Permittee	
38	No later than 45 days after completion of all mitigation measures, Permittee shall provide DFG with a Final Mitigation Report. The Designated Biologist shall prepare the Final Mitigation Report which shall include, at a minimum: (1) a summary of all Quarterly Compliance Reports and all ASRs; (2) a copy of the table in the MMRP with notes showing when each of the mitigation measures was implemented; (3) all available information about Project-related incidental take of the Covered Species; (4) information about other Project impacts on the Covered Species; (5) beginning and ending dates of Covered Activities; (6) an assessment of the effectiveness of this ITP's Conditions of Approval in minimizing and fully mitigating Project impacts of the taking on Covered Species; (7) recommendations on how mitigation measures might be changed to more effectively minimize take and mitigate the impacts of future projects on the Covered Species; and (8) any other pertinent information.	ITP Condition # 6.8	Post-construction and after completion of mitigation	Permittee	
39	Permittee shall re-vegetate Project Areas temporarily disturbed by Covered Activities with plants approved by DFG when Covered Activities have been completed.	ITP Condition # 7.12	Post-construction	Permittee	



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET, 16TH FLOOR
SAN FRANCISCO, CALIFORNIA 94103-1398

MAY 24 2012

Regulatory Division

SUBJECT: File Number 2012-00135N

Mr. Jeffrey Jensen
California Department of Transportation, District 4
111 Grand Avenue
Oakland, California 94623

Dear Mr. Jensen:

This correspondence is in reference to your submittal of April 23, 2012, concerning Department of the Army (DA) authorization to add a left-turn pocket in each direction at Madrone Avenue to reduce the number and severity of traffic accidents. The project is located on State Route (SR) 116, between east of Stony Point Road at Post Mile (PM) 34.09 and Alder Avenue (PM 34.47) in the City of Cotati, Sonoma County, California.

Work within U.S. Army Corps of Engineers' (Corps) jurisdiction would include widening the roadway to 46 feet, extending the existing cross-culverts, and modifying part of an existing unlined drainage ditch on the north side of the roadway. Work will require placement of 254.5 cubic yards of fill within 0.027 acre of jurisdictional waters of the U.S. All work shall be completed in accordance with the plans and drawings titled "*USACE File #2012-00145N, Madrone Avenue Left-Turn Channelization Project, May 4, 2012, Figures 1 to 2*" (enclosure 1).

Section 404 of the Clean Water Act (CWA) generally regulates the discharge of dredged or fill material below the plane of ordinary high water in non-tidal waters of the United States, below the high tide line in tidal waters of the United States, and within the lateral extent of wetlands adjacent to these waters. Section 10 of the Rivers and Harbors Act generally regulates construction of structures and work, including excavation, dredging, and discharges of dredged or fill material, occurring below the plane of mean high water in tidal waters of the United States; in former diked baylands currently below mean high water; outside the limits of mean high water but affecting the navigable capacity of tidal waters; or below the plane of ordinary high water in non-tidal waters designated as navigable waters of the United States. Navigable waters of the United States generally include all waters subject to the ebb and flow of the tide; and/or all waters presently used, or have been used in the past, or may be susceptible for future use to transport interstate or foreign commerce.

A Preliminary JD has been completed for your site. Preliminary JDs are written indications that there may be waters of the U.S. on a parcel or indications of the approximate location(s) of waters of the U.S. on a parcel. Preliminary JDs are advisory in nature and may not be appealed.

Please see the enclosed PJD map titled, "*Preliminary Jurisdictional Determination, Pursuant to Section 404 of Clean Water Act, Madrone Avenue Left-turn Channelization Project, Cotati, Sonoma County, California*" and dated "May 7, 2012" (enclosure 2). The basis for this preliminary jurisdictional determination is fully explained in the enclosed *Preliminary Jurisdictional Determination Form*. You are requested to sign and date this form and return it to this office within two (2) weeks of receipt.

Based on a review of the information in your submittal, the project qualifies for authorization under Department of the Army Nationwide Permit (NWP) 14 for Linear Transportation Projects, 77 Fed. Reg. 10184, February 21, 2012, pursuant to Section 404 of the CWA of 1972, as amended (33 U.S.C. § 1344 *et seq.*). The project must be in compliance with the terms of the NWP, the general conditions of the Nationwide Permit Program, and the San Francisco District regional conditions cited in enclosure 3. You must also be in compliance with any special conditions specified in this letter for the NWP authorization to remain valid. Non-compliance with any term or condition could result in the revocation of the NWP authorization for your project, thereby requiring you to obtain an Individual Permit from the Corps. This NWP authorization does not obviate the need to obtain other State or local approvals required by law.

This verification will remain valid for two years from the date of this letter. Activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon a NWP will remain authorized provided the activity is completed within 12 months of the date of a NWP's expiration, modification, or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 330.4(e) and 33 CFR 330.5 (c) or (d). The Chief of Engineers will periodically review NWPs and their conditions and will decide to either modify, reissue, or revoke the permits. If a NWP is not modified or reissued within five years of its effective date, it automatically expires and becomes null and void. It is incumbent upon you to remain informed of any changes to the NWPs. Changes to the NWPs would be announced by Public Notice posted on our website (<http://www.spn.usace.army.mil/regulatory/index.html>). Upon completion of the project and all associated mitigation requirements, you shall sign and return the Certification of Compliance, enclosure 4, verifying that you have complied with the terms and conditions of the permit.

This authorization will not be effective until you have obtained a Section 401 water quality certification from the San Francisco Bay Regional Water Quality Control Board. If the RWQCB fails to act on a valid request for certification within two months after receipt of a complete application, the Corps will presume a waiver of water quality certification has been obtained. You shall submit a copy of the certification to the Corps prior to the commencement of work.

General Condition 18 stipulates that project authorization under a NWP does not allow for the incidental take of any federally-listed species in the absences of a biological opinion (BO)

with incidental take provisions. As the principal federal lead agency for this project, Caltrans initiated consultation with the United States Fish and Wildlife Service (USFWS) to address project related impacts to list species, pursuant to Section 7(a) of the Endangered Species Act of 1973, as amended (16 U.S.C. Section 1531 *et seq.*). By letter of May 4, 2012, USFWS issued a BO (08ESMF00-2012-F-0127-3) cited in enclosure 5, with an incidental take statement for California tiger salamander.

In order to ensure compliance with this NWP authorization, the following special conditions shall be implemented:

1. To remain exempt from the prohibitions of Section 9 of the Endangered Species Act, the non-discretionary Terms and Conditions for incidental take of federally-listed California tiger salamander (*Ambystoma californiense*) shall be fully implemented as stipulated in the Biological Opinion entitled, "*Biological Opinion for the Proposed State Route 116 Madrone Avenue Left-Turn Channelization Project, Sonoma County, California (Caltrans EA 1G2401)*" (pages 1-37) dated May 4, 2012. Project authorization under the NWP is conditional upon compliance with the mandatory terms and conditions associated with incidental take. Failure to comply with the terms and conditions for incidental take, where a 'take' of a federally-listed species occurs, would constitute an unauthorized take and non-compliance with the NWP authorization for your project. The USFWS is, however, the authoritative federal agency for determining compliance with the incidental take statement and for initiating appropriate enforcement actions or penalties under the Endangered Species Act.
2. You shall purchase and submit a confirmation of the purchase of credits equivalent to at least 0.027 acre of seasonal wetland mitigation from a Corps approved mitigation bank with appropriate service area. Currently the following mitigation banks have been approved by the Corps and have appropriate service areas: Hale Mitigation Bank, Horn Avenue Mitigation Bank, Hazel Mitigation Bank, Laguna Valley Bank, Desmond Mitigation Bank, and Carinalli-Todd Mitigation Bank. A copy of the bank receipt must be submitted to our office *prior* to the start of construction.
3. Project construction **may not proceed** until the Corps has received copies of receipts for the mitigation bank purchases and has approved these purchases in writing.
4. Caltrans shall notify the Corps in writing of the anticipated start and stop dates of construction, at least 5 days prior to the initiation of construction.

You may refer any questions on this matter to Paula Gill of my Regulatory staff by telephone at 415-503-6776 or by e-mail at Paula.C.Gill@usace.army.mil. All correspondence

should be addressed to the Regulatory Division, North Branch, referencing the file number at the head of this letter.

The San Francisco District is committed to improving service to our customers. My Regulatory staff seeks to achieve the goals of the Regulatory Program in an efficient and cooperative manner, while preserving and protecting our nation's aquatic resources. If you would like to provide comments on our Regulatory Program, please complete the Customer Service Survey Form available on our website: <http://www.spn.usace.army.mil/regulatory/>.

Sincerely,



 Jane M. Hicks
Chief, Regulatory Division

Enclosures

Copies furnished (w/o enclosures):

US EPA, San Francisco, CA
US FWS, Sacramento, CA
CA DFG, Monterey, CA
CA RWQCB, Oakland, CA

Enclosure 1:

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

USACE File #2012-00145N
 Madrone Avenue Left-turn Channelization Project.
 May 4, 2012
 Figure 1 of 2



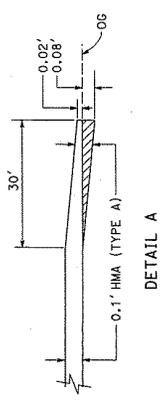
U.S. Army Corps of Engineers
 San Francisco District
 Regulatory Division

LEGEND:

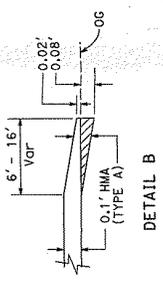
- PAVING CONFORM / COLD PLANE
- STRUCTURAL SECTION NUMBER
- REPLACE AC SURFACING

NOTES:

1. EXACT LOCATIONS OF DRIVEWAY CONFORM AS DIRECTED BY ENGINEER (DETAIL B).
2. FOR PAVING CONFORM DETAIL, SEE DETAIL A.
3. IDENTIFIED MANHOLES TO BE RAISED TO MATCH THE NEW GRADE.
4. ACTUAL LOCATION OF DIGOUTS TO BE DETERMINED BY THE ENGINEER.



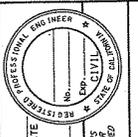
DETAIL A
PAVING CONFORM
 SHO ALN1 30+98 TO 31+28
 SHO ALN1 49+12 TO 49+42
 NO SCALE



DETAIL B
DRIVEWAY CONFORM
 NO SCALE

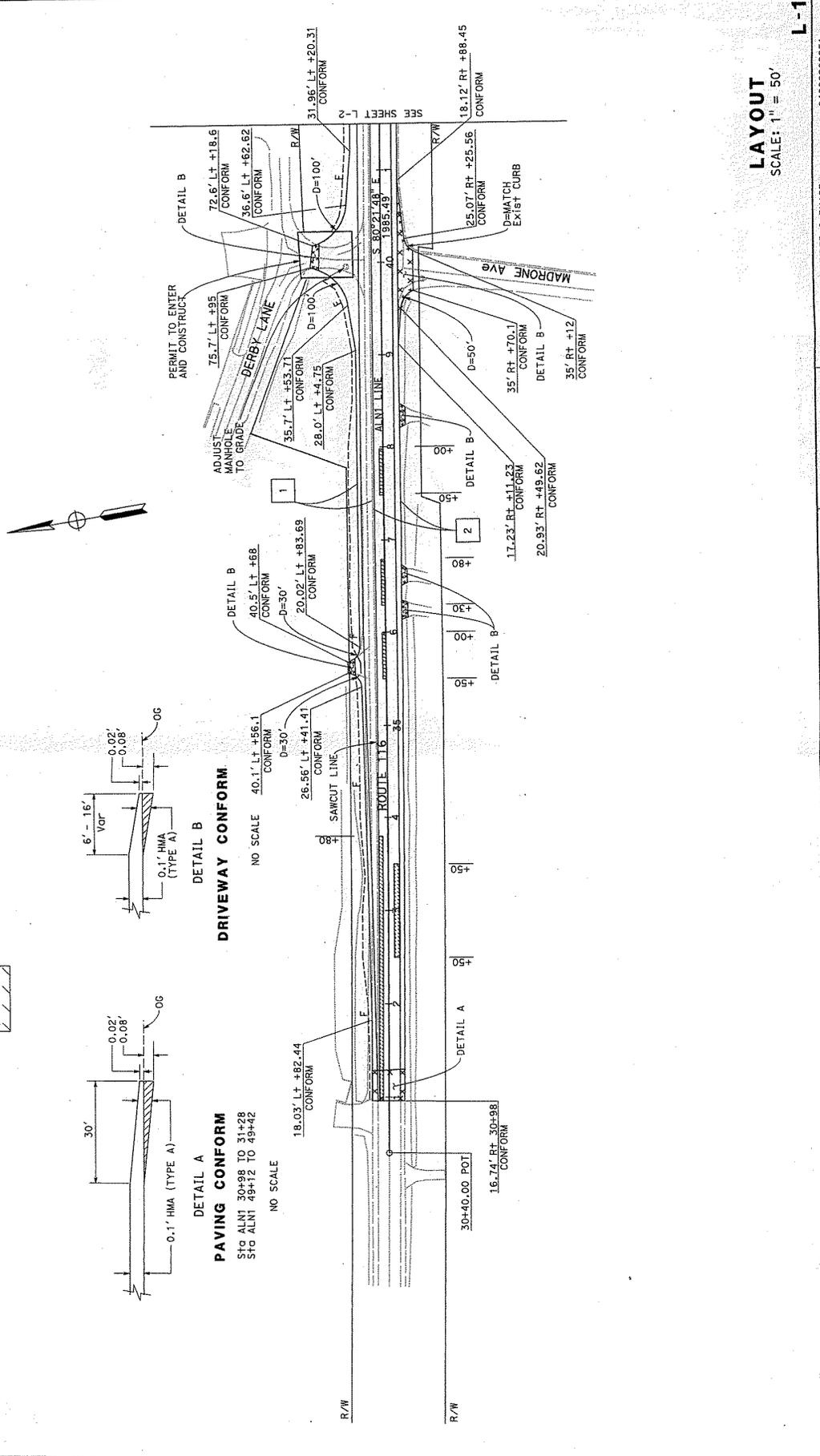


Dist	County	Route	Post Miles	SHEET TOTAL
04	SOT	116	34.1 / 34.5	NO. SHEETS



REGISTERED CIVIL ENGINEER DATE
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OFFICE OF THE REGISTERED PROFESSIONAL ENGINEERS
 THE AUTHORITY OF THE REGISTERED PROFESSIONAL ENGINEERS FOR THE PURPOSES OF THE PROFESSIONAL ENGINEERS ACT OF 1967 IS HEREBY CERTIFIED FOR THESE PLANS.

REVISD BY	DATE REVISD	CHECKED BY	FUNCTIONAL SUPERVISOR



LAYOUT
 SCALE: 1" = 50'

Dist	County	Route	Post Miles Total Project	Sheet Total No. Sheets
04	San	116	34.1/34.5	

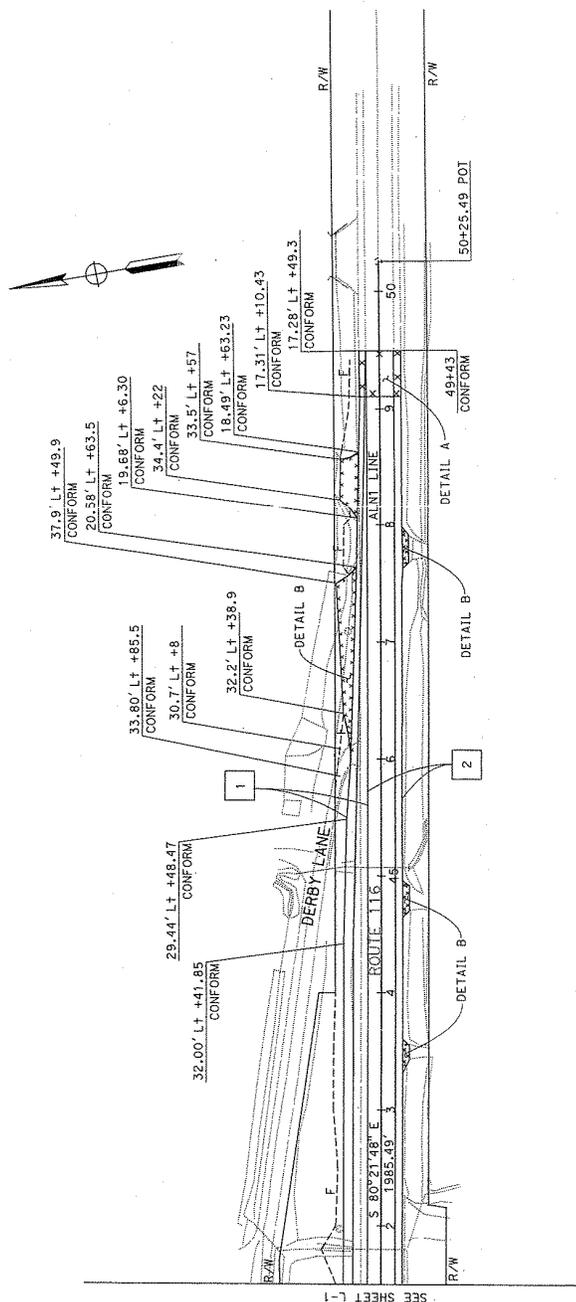
REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

PROFESSIONAL ENGINEER	REGISTERED
CIVIL	

USACE File # 2012-00143N
 Madrone Avenue Left-turn Channelization Project.
 May 4, 2012
 Figure 2 of 2



NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



LAYOUT
 SCALE: 1" = 50'

FOR NOTES AND LEGEND,
 SEE SHEET L-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CHECKED BY	DATE REVISED
DESIGNED BY	REVISOR	DATE REVISED	

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

San Francisco District

This Preliminary Jurisdictional Determination finds that there "may be" waters of the United States in the subject review area and identifies all such aquatic features, based on the following information:

Regulatory Division: North Branch

File Number: 2012-00135N

PJD Completion Date: 5/7/12

Review Area Location

City/County: Cotati State: California
Nearest Named Waterbody: Laguna de Santa Rosa
Approximate Center Coordinates of Review Area
Latitude (degree decimal format): 38.33335°N
Longitude (degree decimal format): -122.72923°W
Approximate Total Acreage of Review Area: 0.6 acre

File Name: Madrone Avenue Left-Turn Channelization

Applicant or Requestor Information

Name: Mr. Jeffery Jensen
Company Name: Caltrans
Street/P.O. Box: 111 Grand Ave
City/State/Zip Code: Oakland, Ca 94623

Estimated Total Amount of Waters in Review Area

Non-Wetland Waters: lineal feet feet wide and/or
0.020 acre(s) Flow Regime: Seasonal

Wetlands: lineal feet feet wide and/or
0.1 acre(s) Cowardin Class: Select

Name of Section 10 Waters Occurring in Review Area

Tidal:
Non-Tidal:

- Office (Desk) Determination
 Field Determination:
Date(s) of Site Visit(s):

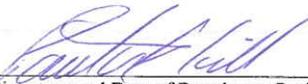
SUPPORTING DATA: Data reviewed for Preliminary JD (check all that apply – checked items should be included in case file and, where checked and requested, appropriately reference sources below)

Maps, Plans, plots or plat submitted by or on behalf of applicant/requestor (specify): Wetland Delineation Report, March 2012

Data sheets submitted by or on behalf of applicant/requestor (specify):

- Corps concurs with data sheets/delineation report.
 Corps does not concur with data sheets/delineation report.
 Data sheets prepared by the Corps.
 Corps navigable waters' study (specify):
 U.S. Geological Survey Hydrologic Atlas:
 USGS NHD data.
 USGS HUC maps.
 U.S. Geological Survey map(s) (cite quad name/scale): 7.5 quad
 USDA Natural Resources Conservation Service Soil Survey.
 National wetlands inventory map(s) (specify):
 State/Local wetland inventory map(s) (specify):
 FEMA/FIRM maps.
 100-year Floodplain Elevation (specify, if known):
 Photographs: Aerial (specify name and date):
 Other (specify name and date):
 Previous JD determination(s) (specify File No. and date of response letter):
 Other information (specify):

IMPORTANT NOTE: If the information recorded on this form has not been verified by the Corps, the form should not be relied upon for later jurisdictional determinations.


Signature and Date of Regulatory Project Manager
(REQUIRED)

5/10/12
Signature and Date of Person Requesting Preliminary JD
(REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

Aquatic Resource I.D.	Latitude (degree decimal format)	Longitude (degree decimal format)	Cowardin Class and Flow Regime	Estimated Area or Lineal Feet of Aquatic Resource		Type of Aquatic Resource
OWUS 1	°Select	- °Select	Riverine Flow: Seasonal	229 lineal ft 0.011 acre(s)	ft wide	Non-wetland Ditch
OWUS 2	°Select	- °Select	Riverine Flow: Seasonal	216 lineal ft 0.01 acre(s)	ft wide	Non-wetland Ditch
w1	°Select	- °Select	Palustrine-emergent Flow: Seasonal	222 lineal ft 0.01 acre(s)	ft wide	Wetland Ditch
	°Select	- °Select	Select Flow: Select	lineal ft acre(s)	ft wide	Select
w3	°Select	- °Select	Palustrine-emergent Flow: Seasonal	46 lineal ft 0.003 acre(s)	ft wide	Wetland Ditch
w4	°Select	- °Select	Palustrine-emergent Flow: Seasonal	161 lineal ft 0.011 acre(s)	ft wide	Wetland Ditch
w5	°Select	- °Select	Palustrine-emergent Flow: Seasonal	56 lineal ft 0.005 acre(s)	ft wide	Wetland Ditch
w6	°Select	- °Select	Palustrine-emergent Flow: Seasonal	225 lineal ft 0.008 acre(s)	ft wide	Wetland Ditch
w7	°Select	- °Select	Palustrine-emergent Flow: Seasonal	20 lineal ft 0.001 acre(s)	ft wide	Wetland Ditch
w8	°Select	- °Select	Palustrine-emergent Flow: Seasonal	551 lineal ft 0.025 acre(s)	ft wide	Wetland Ditch
w9	°Select	- °Select	Palustrine-emergent Flow: Seasonal	18 lineal ft 0.001 acre(s)	ft wide	Wetland Ditch
w10	°Select	- °Select	Palustrine-emergent Flow: Seasonal	158 lineal ft 0.007 acre(s)	ft wide	Wetland Ditch
w11	°Select	- °Select	Palustrine-emergent Flow: Seasonal	142 lineal ft 0.003 acre(s)	ft wide	Wetland Ditch
w12	°Select	- °Select	Palustrine-emergent Flow: Seasonal	86 lineal ft 0.005 acre(s)	ft wide	Wetland Ditch
w13	°Select	- °Select	Palustrine-emergent Flow: Seasonal	104 lineal ft 0.006 acre(s)	ft wide	Wetland Ditch
w14	°Select	- °Select	Palustrine-emergent Flow: Seasonal	241 lineal ft 0.014 acre(s)	ft wide	Wetland Ditch
	°Select	- °Select	Select Flow: Select	lineal ft acre(s)	ft wide	Select
	°Select	- °Select	Select Flow: Select	lineal ft acre(s)	ft wide	Select

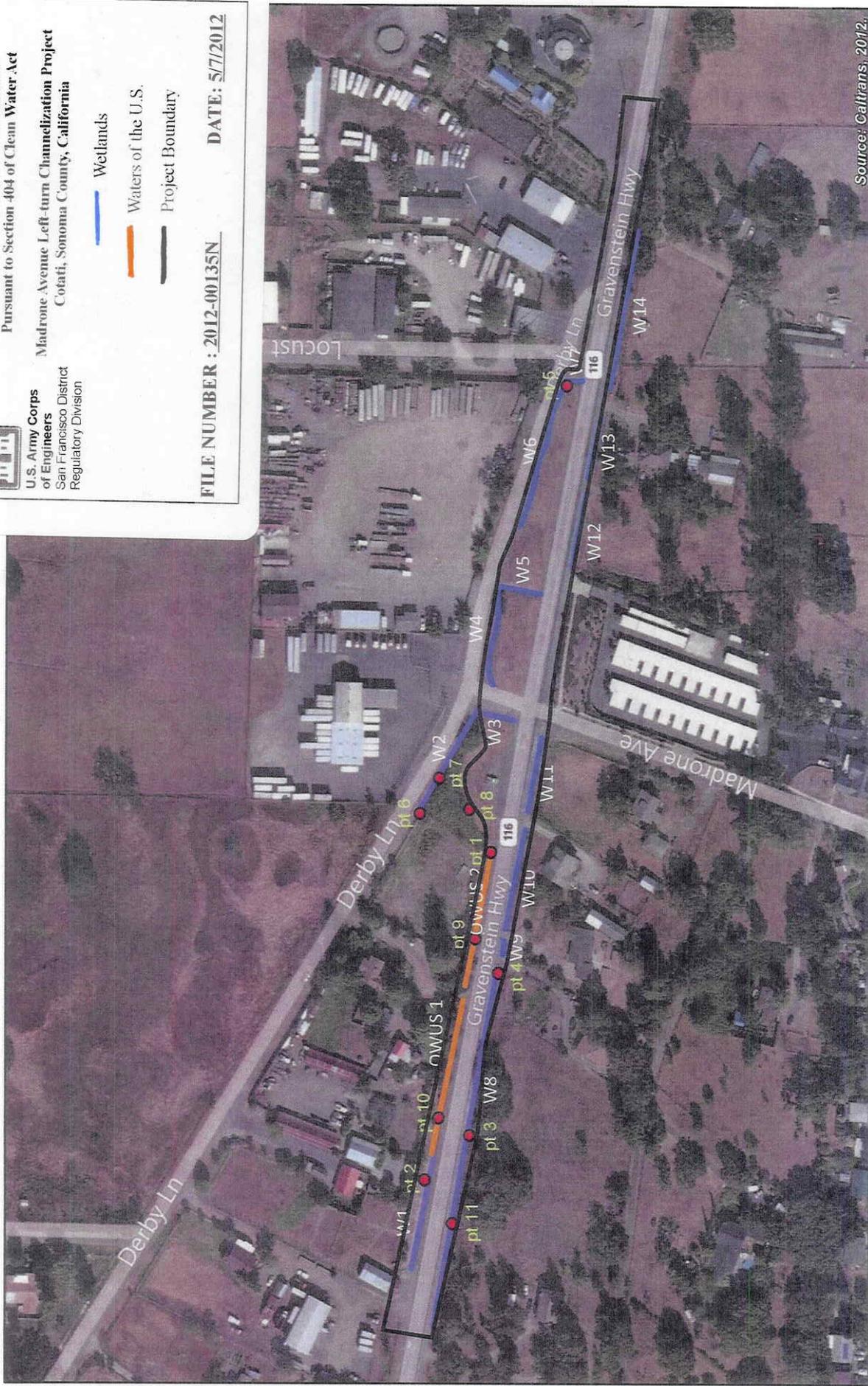


Preliminary Jurisdictional Determination
 Pursuant to Section 404 of Clean Water Act
 Madrone Avenue Left-turn Channelization Project
 Cotati, Sonoma County, California

U.S. Army Corps of Engineers
 San Francisco District
 Regulatory Division

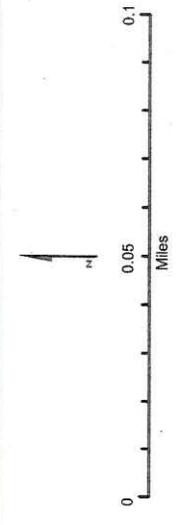
FILE NUMBER : 2012-00135N **DATE: 5/7/2012**

-  Wetlands
-  Waters of the U.S.
-  Project Boundary



Source: Caltrans, 2012.

FIGURE 2-1
WETLAND DELINEATION MAP
 Section 404 Clean Water Act
 Nationwide Permit Application and
 Pre-Construction Notification Package
 State Route 116
 PM 34-09-34.47, EA 1G2401
 Sonoma County, California



- Legend**
-  Sample Point
 -  Jurisdictional Water - Roadside Ditch
 -  Jurisdictional Wetlands - Roadside Ditch
 -  Project Boundary

Enclosure 3:

Nationwide Permit 14 - Linear Transportation Projects

Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project. This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate. This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10-acre; or (2) there is a discharge in a special aquatic site, including wetlands. (See general condition 31.) (Sections 10 and 404)

Note: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under Section 404(f) of the Clean Water Act (see 33 CFR 323.4).

Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR §§ 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR § 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation. (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States. (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage

high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed. (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary. (c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within

45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps. (d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWP. (e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. (f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.noaa.gov/fisheries.html> respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any "take" permits required under the U.S. Fish and Wildlife Service's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such "take" permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied. (b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary. (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed. (d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps. (e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly

adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. **Discovery of Previously Unknown Remains and Artifacts.** If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. **Designated Critical Resource Waters.** Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment. (a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters. (b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. **Mitigation.** The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332. (1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment. (2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered. (3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14)

must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). (4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided. (5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. **Safety of Impoundment Structures.** To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:
"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification.

(a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either: (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or (2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information: (1) Name, address and telephone numbers of the prospective permittee; (2) Location of the proposed project; (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans); (4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate; (5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan. (6) If any listed species or designated critical habitat might be affected or is in

the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and (7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWP and the need for mitigation to reduce the project's adverse environmental effects to a minimal level. (2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5. (3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act. (4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

San Francisco District's Regional Conditions

A. General Regional Conditions that apply to all NWP's in the Sacramento, San Francisco, and Los Angeles Districts:

1. When pre-construction notification (PCN) is required, the permittee shall notify the U.S. Army Corps of Engineers, San Francisco District (Corps) in accordance with General Condition 31 using either the South Pacific Division Preconstruction Notification (PCN) Checklist or a signed application form (ENG Form 4345) with an attachment providing information on compliance with all of the General and Regional Conditions. In addition, the PCN shall include:
 - a. A written statement describing how the activity has been designed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States;
 - b. Drawings, including plan and cross-section views, clearly depicting the location, size and dimensions of the proposed activity, as well as the location of delineated waters of the U.S. on the site. The drawings shall contain a title block, legend and scale, amount (in cubic yards) and area (in acres) of fill in Corps jurisdiction, including both permanent and temporary fills/structures. The ordinary high water mark or, if tidal waters, the mean high water mark and high tide line, should be shown (in feet), based on National Geodetic Vertical Datum (NGVD) or other appropriate referenced elevation. All drawings for activities located within the boundaries of the Los Angeles District shall comply with the September 15, 2010 Special Public Notice: *Map and Drawing Standards for the Los Angeles District Regulatory Division*, (available on the Los Angeles District Regulatory Division website at: www.spl.usace.army.mil/regulatory/); and
 - c. Numbered and dated pre-project color photographs showing a representative sample of waters proposed to be impacted on the site, and all waters of the U.S. proposed to be avoided on and immediately adjacent to the activities site. The compass angle and position of each photograph shall be identified on the plan-view drawing(s) required in subpart b of this Regional Condition.
2. The permittee shall submit a PCN, in accordance with General Condition 31, For all activities located in areas designated as Essential Fish Habitat (EFH) by the Pacific Fishery Management Council (i.e., all tidally influenced areas - Federal Register dated March 12, 2007, 72 C.F.R. 11,092, in which case the PCN shall include an EFH assessment and extent of proposed impacts to EFH. Examples of EFH habitat assessments can be found at: <http://www.swr.noaa.gov/efh.htm>.
3. For activities in which the Corps designates another Federal agency as the lead for compliance with Section 7 of the Endangered Species Act (ESA) of 1973 as amended, 16 U.S.C. §§ 1531-1544, Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act (EFH), 16 U.S.C. § 1855(b)(4)(B) and/or Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, 16 U.S.C. §§ 470-470h, the lead Federal agency shall provide all relevant documentation to the appropriate Corps demonstrating any previous consultation efforts, as it pertains to the Corps Regulatory permit area (for Section 7 and EFH compliance) and the Corps Regulatory area of potential effect (APE) (for Section 106 compliance). For activities requiring a PCN, this information shall be submitted with the PCN. If the Corps does not designate another Federal agency as the lead for ESA, EFH and/or NHPA, the Corps will initiate consultation for compliance, as appropriate.

4. For all activities in waters of the U.S. that are suitable habitat for Federally-listed fish species, the permittee shall design all road crossings to ensure that the passage and/or spawning of fish is not hindered. In these areas, the permittee shall employ bridge designs that span the stream or river, including pier- or pile-supported spans, or designs that use a bottomless arch culvert with a natural stream bed unless determined to be impracticable by the Corps.
5. The permittee shall complete the construction of any compensatory mitigation required by special condition(s) of the NWP verification before or concurrent with commencement of construction of the authorized activity, except when specifically determined to be impracticable by the Corps. When mitigation involves use of a mitigation bank or in-lieu fee program, the permittee shall submit proof of payment to the Corps prior to commencement of construction of the authorized activity.
6. Any requests to waive the 300 linear foot limitation for intermittent and ephemeral streams for NWPs 21, 29, 39, 40, 42, 43, 44, 50, 51 and 52, or to waive the 500 linear foot limitation along the bank for NWP 13, must include the following:
 - a. A narrative description of the stream. This should include known information on: volume and duration of flow; the approximate length, width, and depth of the waterbody and characteristics observed associated with an Ordinary High Water Mark (e.g. bed and bank, wrack line or scour marks); a description of the adjacent vegetation community and a statement regarding the wetland status of the adjacent areas (i.e. wetland, non-wetland); surrounding land use; water quality; issues related to cumulative impacts in the watershed, and; any other relevant information;
 - b. An analysis of the proposed impacts to the waterbody, in accordance with General Condition 31;
 - c. Measures taken to avoid and minimize losses to waters of the U.S., including other methods of constructing the proposed activity(s); and
 - d. A compensatory mitigation plan describing how the unavoidable losses are proposed to be offset, in accordance with 33 CFR 332.

B. General Regional Conditions that apply to all NWPs in the San Francisco District:

1. Notification to the Corps (in accordance with General Condition No. 31) is required for any activity permitted by NWP if it will take place in waters or wetlands of the U.S. that are within the **San Francisco Bay diked baylands** (see figure 1) (undeveloped areas currently behind levees that are within the historic margin of the Bay. Diked historic baylands are those areas on the Nichols and Wright map below the 5-foot contour line, National Geodetic Vertical Datum (NGVD) (see Nichols, D.R., and N. A. Wright. 1971. Preliminary map of historic margins of marshland, San Francisco Bay, California. U.S. Geological Survey Open File Map)). The notification shall explain how avoidance and minimization of losses of waters or wetlands are taken into consideration to the maximum extent practicable (see General Condition 23).
2. Notification to the Corps (in accordance with General Condition No. 31) is required for any activity permitted by NWP if it will take place in waters or wetlands of the U.S. that are within the **Santa Rosa Plain** (see figure 2). The notification will explain how avoidance and minimization of losses of waters or wetlands are taken into consideration to the maximum extent practicable in accordance with General Condition No. 23.

3. Notification to the Corps (in accordance with General Condition No. 31), including a compensatory mitigation plan, habitat assessment, and extent of proposed-project impacts to Eelgrass Beds are required for any activity permitted by NWP if it will take place within or adjacent to **Eelgrass Beds**.

14. LINEAR TRANSPORTATION PROJECTS:

1. Notification to the Corps (in accordance with General Condition No. 30) is required for all projects filling greater than 300 linear feet of channel. For projects involving greater than 300 linear feet of bank stabilization, the project proponent shall address the effect of the bank stabilization on the stability of the opposite side of the streambank (if it is not part of the stabilization activity), and on adjacent property upstream and downstream of the activity.
2. This permit does not authorize construction of new airport runways and taxiways.
3. If this NWP has been used to authorize previous project segments within the same linear transportation project, justification must be provided demonstrating that the cumulative impacts of the proposed and previously authorized project segments do not result in more than minimal impacts to the aquatic system.
4. To the maximum extent practicable, any new or additional bank stabilization required for the crossing must incorporate structures or modifications beneficial to fish and wildlife (e.g., soil bioengineering or biotechnical design, root wads, large woody debris, etc.). Where these structures or modifications are not used, the applicant shall demonstrate why they were not considered practicable. Bottomless and embedded culverts are encouraged over traditional culvert stream crossings.

Enclosure 4:

Permittee: Caltrans, Mr. Jeffery Jensen

File Number: 2009-00049S

**Certification of Compliance
for
Nationwide Permit**

"I hereby certify that the work authorized by the above referenced File Number and all required mitigation have been completed in accordance with the terms and conditions of this Nationwide Permit authorization."

(Permittee)

(Date)

Return to:

Paula Gill
U.S. Army, Corps of Engineers
San Francisco District
Regulatory Division, CESP-N-R-S
1455 Market Street
San Francisco, CA 94103-1398

Enclosure 5:



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
08ESMF00-2012-F-0127-3

MAY 04 2012

Ms. Moujan Mostaghimi
Attn: John Yeakel
California Department Transportation
Environmental Division, MS 8E
111 Grand Avenue
Oakland, California 94612

Subject: Biological Opinion for the Proposed State Route 116 Madrone Avenue Left-Turn Channelization Project, Sonoma County, California (Caltrans EA 1G2401)

Dear Ms. Mostaghimi:

This is in response to your December 23, 2011, request for formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed State Route (SR) 116 Madrone Avenue Left-Turn Channelization Project, in Sonoma County, California. Your request for formal consultation on the endangered Sonoma Distinct Population Segment (DPS) of the California tiger salamander (*Ambystoma californiense*) (Sonoma California tiger salamander) was received in our office on December 29, 2011. This document represents the Service's biological opinion on the effects of the proposed action on the Sonoma California tiger salamander and its critical habitat. This document has been prepared in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*)(Act).

Based on the botanical survey information provided in the December 2011, Biological Assessment (BA), and our knowledge of their biology, it is the Service's opinion that the endangered Burke's goldfields (*Lasthenia burkei*), Sonoma sunshine (*Blemnosperma bakeri*), and Sebastopol meadowfoam (*Limnanthes vinculans*) are unlikely to occur in the roadside ditches in the construction footprint or elsewhere within the action area and are therefore not likely to be adversely affected by the proposed project.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users legislation (23 U.S.C. 327) allows the Secretary of the U.S. Department of Transportation acting through the Federal Highway Administration (FHWA) to establish a Surface Transportation Project Delivery Pilot Program, whereby a State may assume the FHWA responsibilities under the National Environmental Policy Act for environmental review, agency consultation and other actions pertaining to the review or approval of a specific project. The California Department of

Transportation (Caltrans) assumed these responsibilities for the FHWA on July 1, 2007, through a Memorandum of Understanding within the State of California (http://www.dot.ca.gov/ser/downloads/MOUs/nepa_delegation/sec6005mou.pdf) and are exercising this authority as the federal nexus for section 7 consultation on this project.

This biological opinion is based on: (1) the December 2011, BA; (2) a January 26, 2012 site visit; (3) additional information provided by Caltrans on February 24, 2012 and April 24, 2012; and (4) other information available to the Service.

Consultation History

- November 10, 2011 The California Department of Fish and Game (CDFG) copied the Service on an electronic mail (e-mail) correspondence between CDFG and Caltrans. As stated in the e-mail messages, Caltrans intended to contact the Service regarding a proposed not likely to adversely affect determination for the Sonoma California tiger salamander based on the conservation strategy map in the Santa Rosa Plain Conservation Strategy (SRPCS). CDFG informed Caltrans that they would not be able to issue a consistency determination for the project if the Service determined that informal consultation was adequate.
- December 29, 2011 The Service received a December 2011 BA from Caltrans for the project along with a request for formal consultation on the Sonoma California tiger salamander. In the BA, Caltrans stated that they would be providing habitat compensation for adverse effects to Sonoma California tiger salamander habitat as prescribed in the SRPCS relative to the California Environmental Quality Act but not the section 7 consultation process.
- January 25, 2012 The Service issued Caltrans a 30-day letter requesting additional information needed to complete the consultation (Service File #08ESMF00-2012-F-0127-1). The letter included a copy of Caltrans' proposed Sonoma California tiger salamander conservation measures for the SR 101 Rock Slope Protection Project (Service File #81420-2010-F-0477) with a recommendation that Caltrans propose this more comprehensive list of measures for the SR 116 Madrone Avenue Left-Turn Channelization Project.
- January 26, 2012 The Service visited the proposed project site with Caltrans and CDFG. The roadside ditches along the adjacent Derby Lane were ponded and appeared to provide potential breeding habitat for the Sonoma California tiger salamander. CDFG told Caltrans that they considered all areas in the construction footprint that were not occupied by existing hardscape to be Sonoma California tiger salamander habitat. Given the connectivity with the inundated ditches along Derby Lane, CDFG suggested that the ditches within the construction footprint be characterized as breeding habitat.

- CDFG requested that Caltrans recalculate the area of upland and breeding habitat within the project footprint.
- February 16, 2012 The Service was copied on an e-mail message sent to Caltrans by CDFG. CDFG requested that Caltrans provide revised calculations for Sonoma California tiger salamander habitat within the construction footprint, characterizing drainage ditches as tiger salamander breeding habitat.
- February 24, 2012 The Service received Caltrans' response to the January 25, 2012, 30-day letter request for additional project information. Caltrans stated that all the necessary information to complete the section 7 consultation was included in the December 2011, BA and the Service's 30-day letter was unwarranted. Caltrans included the requested specifications for their proposed California tiger salamander exclusion fence. Caltrans declined to adopt the majority of the recommended standard California tiger salamander conservation measures but stated that they would consider proposing them when in consultation with CDFG.
- February 27, 2012 The Service received a copy of Caltrans February 22, 2012, response to CDFG's February 16, 2012 email message. Caltrans provided an assessment for why the drainages within the construction footprint would not be used by the Sonoma California tiger salamander for breeding. Caltrans did not address indirect effects downstream to likely breeding habitat in the road side drainage along Derby Lane. Caltrans declined to revise their habitat calculations
- April 17, 2012 The Service issued a draft biological opinion (Service File #08ESMF00-2012-F-0127-2).
- April 24, 2012 The Service received Caltrans' requested edits to the April 17, 2012 draft Biological Opinion.

BIOLOGICAL OPINION

Description of the Proposed Action

The following project description was provided by Caltrans with minor modifications for reasons of clarity and accuracy provided by the Service.

General Scope of Work

Caltrans proposes to construct one left-turn pocket in each direction at Madrone Avenue (post mile 34.28) on SR 116 (also known as the Gravenstein Highway) to reduce the number and severity of collisions at this intersection. The proposed project is located along an approximately

0.5-mile portion of SR 116, approximately 1 mile west of the intersection of SR 101 and SR 116 in unincorporated Sonoma County.

To create the left-turn lane channels at the SR 116/Madrone Avenue intersection, the proposed project will include widening of SR 116, extending existing cross-culverts beneath SR 116, and modifying part of an existing unlined drainage ditch on the north side of SR 116. The three primary components of the project description are further described below.

1. SR 116 Road Widening

A 350-foot long portion of the existing SR 116 roadway will be widened from an existing maximum of 36 feet to a maximum of 53 feet to accommodate one left-turn pocket in each direction at the intersection of SR 116 and Madrone Avenue. The widened roadway will consist of one additional 12-foot wide lane and a maximum of 5 feet of additional shoulder, plus an unpaved 3-foot shoulder (choker) on the northern side of the road, for a total maximum width of 20 feet.

Road widening will be restricted to the northern side of the existing SR 116. For the cross slope of the widened roadway to match the existing one, the existing alignment will be maintained. Each new turn pocket will be 350 feet long. Conforms (point where the project joins with the existing roadway) to the existing edge of shoulder and travel way will be made at the eastern and western ends of the project area, and at the Madrone Avenue intersection in both directions (6 feet from the edge of pavement on the northern side of the mainline, and 16 feet on the southern side).

2. Drainage System Modifications

According to Caltrans, the project is designed to maintain the existing drainage pattern, and to avoid disruption of the overall basin. To avoid altering the overall drainage pattern, all proposed inlets would tie into existing drainage facilities, cross culverts, or other existing offsite drainage features. Four culverts are to be lengthened to accommodate the widened pavement and embankment. Existing culverts will be lengthened by securely connecting a pipe of similar size and material to the exposed and prepared end of the existing pipe, which will extend to the daylight edge of the proposed embankment or to additional drainage system(s).

The project will install one longitudinal pipe connecting two drainage inlets (DIs). Excavation for each will be 4 feet in length, by 4 feet in width and 4 feet deep (32 square feet). The second longitudinal pipe will link to the second DI, and end with a dissipater to reduce the force of flow of the altered drainage features and rock slope protection (RSP) pad, located further east along SR 116, but before the Madrone Avenue intersection. Excavation for the associated RSP pad will be approximately 9 feet in length and 3 feet wide (27 square feet).

Four existing corrugated metal pipe (CMP) cross-culverts will be extended to accommodate the road widening. The culverts will require a trench for placement, and two existing headwalls will be removed, with the new outfalls falling within the existing unlined ditch on the northern side. The excavation area dimensions for the new DI replacing the existing headwall, and new pipe extension to the west of the intersection of Madrone Avenue and SR 116, will be approximately 6 feet by 4 feet (24 square feet) and 1.5 feet by 30 feet (45 square feet) respectively.

Two additional DIs are proposed for extending the culverts, of which one will be used to connect the culvert extension to the existing CMP. The excavation for the new pipe extension at the intersection of SR 116 and Madrone Avenue will be approximately 2.5 feet by 18 feet (45 square feet). The new pipe extension and the new headwall, located east of the intersection of Madrone Avenue with SR 116 and west of where Derby Lane enters SR 116, will require an excavation area of approximately 1.5 feet by 13 feet for the pipe and 7 feet by 2 feet for the headwall (47 square feet total).

The project will require up to 15 feet by approximately 270 feet of fill to be placed in the existing 30-foot wide (4,060 square feet) unlined drainage ditch on the northern side of SR 116 to accommodate widening. The ditch, on the north side of SR 116 and west of Madrone Avenue, will be recreated at the edge of the choker, up to 8 feet away from its original location. It will be a triangular unlined channel with side slopes at 4:1 on the roadside and at 2:1 before the catch point (point where the slope meets the existing ground), and approximately 12 feet wide and 2 feet deep.

3. Pavement Construction

To construct the widened pavement section, the existing roadway will be saw-cut at the fog line (the white line demarcating the right edge of the travel lane) on the entire northern side of this roadway section. Excavation depth for the new pavement section will be up to 3 feet from the proposed finished roadway surface. The structural section is then built up by placing pavement structural base layer (combinations of graded rock and sand), followed by asphalt concrete (AC). Each layer will be compacted after having been applied, up to 0.1 foot below finished grade. The final AC applications will be cold-planed for an even join with the existing pavement surface. Cold planing involves using a grinding machine, sweepers, pavers, and rollers to pave the ground area for smooth transition. The choker is constructed by compacting the soil with a compactor to 90 percent. Small areas of fill in the choker may be required. The project will raise manhole covers to the finish grade where required in the new widening, and in the new AC overlay area.

Construction Schedule

Construction is expected to require 70 workdays. Construction would begin April 15, 2013. All initial ground disturbance and vegetation removal will occur between April 15 and

October 31, 2013. Work within any of the roadside ditches, or within seasonal wetlands, will be conducted outside of the Central and Northern California rainy season of October 31st to April 15th. The majority of the construction work will take place during daylight hours behind the K-rail. However, placement of K-rail and the temporary crash cushion, laying of asphalt concrete, removal of pavement delineation, and installation of new pavement delineation will likely occur at night to avoid peak traffic, particularly because one-way traffic control will be required.

Access and Staging

All project access will be gained directly off of SR 116, Madrone Avenue, and Derby Lane. A construction staging area will be established within the project boundary, to the northwest from the intersection of Madrone Avenue and SR 116. Exclusionary fencing will be installed approximately 5 feet from the vegetation/wetland features adjacent to the staging area.

Construction Methods and Equipment

K-rail (temporary concrete barriers) and temporary crash cushions will be placed along the existing edge of the saw-cut roadway to provide a barrier between the construction area and SR 116 traffic. Clearing and grubbing will likely be completed with excavators, dozers, and mulchers. Excavators will be used to dig the trenches needed to construct culverts. Dozers and excavators will likely be used for general grading and contouring. Rollers will be used to compact the soil, and water trucks will be used to aid soil compaction and dust control. Dump trucks, graders, and compactors will be used to lay the road aggregate subbase and aggregate base. Hauling trucks, pavers and rollers will be used to place and compact the AC. Pavement delineation, such as stripping and "bot dots," will be installed using specialized equipment that will remain on the roadbed.

Permanent erosion control will be installed as determined necessary by the Caltrans contract plans and permit requirements. Two biofiltration strips are proposed. Both will be 15 feet wide and have 4:1 (H:V) sideslopes. The bio-strips will be located in disturbed fill areas and will be hydroseeded and amended with compost 2-4 inches deep. Locations will be on either side of the Madrone intersection from Station 38+00 to 39+80 and Station 40+30 to 44+00 and will treat 0.5 acre.

Site Preparation

Prior to construction, site preparation activities will include establishing staging areas and installing environmentally sensitive area fencing.

Prior to construction, environmentally sensitive areas will be delineated. High-visibility orange exclusionary fencing will be installed along the perimeter of the work areas to clearly delineate the extent of the construction area. The exclusionary fencing is intended to prevent construction encroachment into potential Sonoma California tiger salamander habitat outside the described construction footprint, as well as deterring wildlife from entering the construction area.

The location of the exclusion fencing will be established in the field by the biological monitor. The project's special provisions package will provide clear language regarding fencing installation procedures, acceptable fencing material, prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities.

Habitat Mitigation

Under guidance of the SRPCS, Caltrans will mitigate for permanent effects to potential Sonoma California tiger salamander upland habitat, at 2:1, through purchasing 1.24 acres at an agency approved mitigation bank, or through purchase and conservation of suitable habitat as approved by CDFG. The ratio was determined based on the criteria that an adult Sonoma California tiger salamander occurrence has been recorded within 500 feet of the project footprint.

Proposed Conservation Measures

Caltrans proposes to avoid and minimize effects to the Sonoma California tiger salamander by implementing the following measures:

1. **Work Window.** Initial grading and clearing will be conducted between April 15 and October 31, depending on the level of rainfall and/or site conditions. This time period is when drainages would be either dry or at their lowest water level to minimize potential for take of breeding/migrating Sonoma California tiger salamanders.
2. **Biological Monitoring.** A Service and CDFG-approved (agency-approved) biological monitor will be onsite each day during construction, and during initial site grading of development sites where Sonoma California tiger salamander presence is inferred. The agency-approved biologist(s) will be active on the project until such time as all construction activities that may result in take of the Sonoma California tiger salamander are complete. After this time, the contractor or permittee will designate a person to monitor on-site compliance with all conservation measures. The agency-approved biologist(s) will ensure that this individual receives training in the identification of the Sonoma California tiger salamander as outlined in the project-specific training materials. The agency-approved biologist(s) will have the authority to suspend any action, through the Resident Engineer (RE), that might result in impacts that exceed the levels anticipated by Caltrans and Service/CDFG during review of the proposed action.
3. **Preconstruction Surveys.** Prior to the start of construction activities, the agency-approved biologist(s) will survey the project area for the Sonoma California tiger salamander. If a Sonoma California tiger salamander is found, the agency-approved biologist will contact the Service and CDFG to determine if relocating the salamander is appropriate. If the Service and CDFG approve relocation, the RE will allow the biologist sufficient time to move the salamander from the work site before construction activities begin. Only agency-approved biologist(s) will participate in activities associated with the capture, handling, and monitoring of the Sonoma California tiger salamander.

4. Before the start of work each morning, the agency-approved biological monitor will check for animals under any equipment such as vehicles and stored pipes. The biological monitor will check all excavated steep-walled holes or trenches greater than 1 foot deep for the Sonoma California tiger salamander. California tiger salamanders will be removed by the agency-approved biologist and relocated to a receptor site (which will be identified before work begins on the project) that is within the same conservation area as the donor site or, where this is not possible, to the nearest conservation area. Translocation will use the guidelines outlined in Section 4.7.2 of the SRPCS.
5. Worker Training. The agency-approved biological monitor will conduct a training session for all construction workers before work is started on the project. The agency-approved biologist(s) will inform field management and construction personnel of the need to avoid and protect resources by preparing and implementing a worker environmental awareness program. The program will provide workers with information on their responsibilities with regard to the Sonoma California tiger salamander and other sensitive species. Construction personnel will be educated on the types of sensitive resources located in the project area, and the measures required to avoid effects on these resources. All construction personnel will attend an environmental training program prior to ground work on the project. Materials covered in the training program will include environmental rules and regulations for the project, requirements for limiting activities to the construction right-of-way (ROW), and avoidance and minimizations measures designed to protect demarcated sensitive resource areas. Training will educate construction supervisors and managers on the need for pre-construction surveys; construction drawing format and interpretation; staking methods to protect resources; the construction process; roles and responsibilities; project management structure and contacts; environmental commitments; implementation of Best Management Practices (BMPs); and emergency procedures.
6. Exclusionary Fencing. Caltrans will instruct the contractor to install exclusionary fencing surrounding the entire project area to prevent California tiger salamander and other wildlife from entering the area during construction activities. The fence will be installed with an agency-approved biological monitor present.
7. Erosion and Sediment Control Plan. Caltrans will prepare and implement an erosion control and restoration plan to control short- and long-term erosion and sedimentation effects, and to restore soils and vegetation in areas affected by construction activities. The plan will include all necessary requirements regarding erosion control, and will implement BMPs for erosion and sediment control as required. Only appropriate native plant material will be used for erosion control and restoration. Erosion control will be placed on all disturbed slopes and material disposal sites, as directed by the Caltrans Erosion Control Branch.
8. Water Pollution Control Program (WPCP). Caltrans will submit, to the Regional Water Quality Control Board, a notice of intent to discharge stormwater before construction

and/or operation activities begin. Also, Caltrans will develop and implement a WPCP, as required by the conditions of a National Pollutant Discharge Elimination System permit. Caltrans will prepare a WPCP that identifies BMPs for discharges and for groundwater disposal from dewatering operations associated with road construction and interchange improvements. The WPCP will identify how and where these discharges would be disposed of during construction and operations. The WPCP will include provisions for the following:

- a. The area of ground disturbance will be minimized. No ground disturbance will be allowed outside the limits defined in permits. Preservation of existing vegetation will be provided to the maximum extent possible. Required BMPs will be in place during construction of the project to minimize effects to Sonoma California tiger salamander habitat. Environmentally Sensitive Areas will be marked with high visibility Environmentally Sensitive Area and Exclusionary fencing to clearly identify the construction area relative to sensitive areas.
 - b. Temporary erosion control devices will be an integral part of construction. Sedimentation fences will be used to contain polluted or turbid run-off from the work site. Other methods of temporary erosion control, including but not limited to hay bale check dams, will be employed to protect riparian areas, streams and water courses, and all other areas susceptible to damage from run-off. Erosion control devices will be installed concurrently with construction earthwork.
 - c. Sediment control will be maintained at construction site entrances/exits.
 - d. Spill control BMPs will be implemented any time chemicals and/or hazardous substances are stored or used on the project. Workers will be educated in proper material handling, spill prevention, and clean-up. Clean-up materials will be on-site and located near material storage and use areas.
 - e. Erosion control devices will be monitored on a regular basis and augmented as necessary. In the event of pending storms, and in compliance with the WPCP, erosion control devices will be inspected to ensure that such devices are in place and are functional. Monitoring and maintenance of erosion control devices and adjacent disturbed areas will continue during and immediately after storm events.
9. Dust Control. If dust control measures are needed, standard dust control BMPs will be used. Any material stockpiles will be watered, sprayed with tackifier, or covered, to minimize dust production and wind erosion.
10. General Housekeeping. To prevent attraction of predators, all food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in closed containers and removed at least once every three days.

11. Pets. To prevent harassment, injury or mortality of a Sonoma California tiger salamander or destruction of their refuge areas, no pets will be permitted in the action area.
12. Escape Ramp. At the end of each work day, the contractor will create an escape ramp at each end of any open trench greater than 1 foot deep, to allow any animals that may have become entrapped in the trench to climb out overnight. The ramp may be constructed of dirt fill, wood planking, or other suitable material that is placed at an angle no greater than 30 degrees.
13. Invasive Plant Species. When practicable, invasive exotic plants in the project area will be removed. Caltrans will comply with Executive Order 13112, to reduce the spread of invasive non-native plant species and minimize the potential decrease of palatable vegetation for wildlife species. This order is provided to prevent the introduction of invasive species and provide for their control in order to minimize the economic, ecological, and human health impacts.

Analytical Framework for the Jeopardy Determination

The following analysis relies on four components to support the jeopardy determination for the Sonoma California tiger salamander: (1) the *Status of the Species*, which evaluates the species' range-wide condition, the factors responsible for that condition, and its survival and recovery needs; (2) the *Environmental Baseline*, which evaluates the condition of the species in the action area, the factors responsible for that condition, and the role of the action area in the species' survival and recovery; (3) the *Effects of the Proposed Action*, which determines the direct and indirect effects of the proposed Federal action and the effects of any interrelated or interdependent activities on the species; and (4) *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the species.

In accordance with the implementing regulations for section 7 and Service policy, the jeopardy determination is made in the following manner: the effects of the proposed Federal action are evaluated in the context of the aggregate effects of all factors that have contributed to the species' current status and, for non-Federal activities in the action area, those actions likely to affect the species in the future, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the species in the wild.

The following analysis places an emphasis on using the range-wide survival and recovery needs of the species and the role of the action area in providing for those needs as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the jeopardy determination.

Analytical Framework for the Adverse Modification Determination

This biological opinion does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statutory provisions of the Act to complete the following analysis with respect to critical habitat.

In accordance with policy and regulation, the adverse modification analysis in this biological opinion relies on four components: (1) the *Status of Critical Habitat*, which evaluates the designated critical habitat for the Sonoma California tiger salamander in terms of Primary Constituent Elements (PCEs), the factors responsible for that condition, and the intended recovery function of the critical habitat at the provincial and range-wide scale; (2) the *Environmental Baseline*, which evaluates the condition of the critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the PCEs and how that will influence the recovery role of affected critical habitat units; and (4) *Cumulative Effects* which evaluates the effects of future, non-Federal activities in the action area on the PCEs and how that will influence the recovery role of affected critical habitat units.

For purposes of the adverse modification determination, the effects of the proposed Federal action on the Sonoma California tiger salamander critical habitat are evaluated in the context of the range-wide condition of the critical habitat at the provincial and range-wide scales, taking into account any cumulative effects, to determine if the critical habitat range-wide would remain functional (or would retain the current ability for the PCEs to be functionally established in areas of currently unsuitable but capable habitat) to serve its intended recovery role for the Sonoma California tiger salamander.

The analysis in this biological opinion places an emphasis on using the intended range-wide recovery function of Sonoma California tiger salamander critical habitat and the role of the action area relative to that intended function as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the adverse modification determination.

Action Area

The action area is defined in 50 CFR § 402.02, as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.” For the proposed action, the action area includes the direct effects associated with the approximately 3.49-acre construction footprint (of which approximately 2.73 acres is composed of existing hardscape) and the indirect effects to the Sonoma California tiger salamander within at least 1,000 feet of the construction footprint.

Status of the Species

Historically, California tiger salamanders inhabited low elevation grassland and oak savanna plant communities of the Central Valley, and adjacent foothills, and the inner Coast Ranges in California (Jennings and Hayes 1994; Storer 1925; Shaffer *et al.* 1993). The species has been recorded from near sea level to approximately 3,700 feet in the Coast Ranges and up to approximately 1,600 feet in the Sierra Nevada foothills (Shaffer *et al.* 2004). Along the Coast Ranges, the species once occurred from the Santa Rosa area of Sonoma County south to the vicinity of Buellton in Santa Barbara County. In the Central Valley and surrounding foothills, the species once occurred from northern Yolo County southward to northwestern Kern County and northern Tulare County. Three distinct California tiger salamander populations are recognized and correspond to the Santa Maria area within Santa Barbara County, the Santa Rosa Plain in Sonoma County, and vernal pool/grassland habitats throughout the Central Valley.

The distribution of the California tiger salamander has been divided into three DPSs defined as the Sonoma County DPS, Santa Barbara DPS, and the Central DPS. The Sonoma County DPS of the California tiger salamander was emergency listed as endangered on July 22, 2002 (67 FR 47726); formally listed as endangered on March 19, 2003 (68 FR 13497); downgraded to threatened on August 4, 2004 (69 FR 47212); and then restored to endangered on August 19, 2005.

The Sonoma County DPS is widely separated geographically from the closest Central DPS populations, which are located in Contra Costa, Yolo, and Solano counties. This portion of the Central DPS is separated from the Sonoma County population by the Coast Range, Napa River, and the Carquinez Straits, at a minimum distance of approximately 45 miles. There are no known records of the California tiger salamander in the intervening areas (D. Warencya, CDFG, personal communication with the Service, 2002). We have no evidence of natural interchange of individuals between the Sonoma County population and other California tiger salamander populations.

The Sonoma County DPS inhabits low-elevation (below 500 feet) vernal pools and seasonal ponds, associated grassland, and oak savannah plant communities. A record of a specimen from the vicinity of Petaluma from the mid-1800s (Borland 1856, as cited in Storer 1925) suggests that the historic range of the DPS also may have included the Petaluma River watershed.

Although genetically and geographically distinct, the three DPSs share the following life history information.

The California tiger salamander is a large, stocky, terrestrial salamander with a broad, rounded snout. Adults may reach a total length of 8.2 inches (Petranka 1998). California tiger salamanders exhibit sexual dimorphism with males typically larger than females. Adults exhibit white or yellowish markings against an overall black body. As adults, California tiger salamanders tend to have creamy yellow to white spotting on the sides with much less on the dorsal surface of the animal, whereas other tiger salamander species have brighter yellow

spotting that is heaviest on the top of the animals. California tiger salamander larvae have yellowish gray bodies, broad fat heads, large feathery external gills, and broad dorsal fins extending well up their back and range in length from approximately 0.45 to 0.56 inches (Petranka 1998).

The California tiger salamander has an obligate biphasic life cycle (Shaffer *et al.* 2004). Although larval California tiger salamanders develop in vernal pools and ponds in which they were born, they are otherwise terrestrial salamanders that spend most of their post-metamorphic lives in widely dispersed underground retreats (Shaffer *et al.* 2004; Trenham *et al.* 2001). Subadult and adult California tiger salamanders spend the dry summer and fall months of the year in the burrows of small mammals, such as California ground squirrels and Botta's pocket gopher (Storer 1925; Loredó and Van Vuren 1996; Petranka 1998; Trenham 1998a). Dave Cook (Sonoma County Water Agency, personal communication with the Service, 2001) has found that pocket gopher burrows are most often used by California tiger salamanders in Sonoma County. The burrows provide protection from the sun and wind that can cause desiccation (drying out) of amphibian skin. Camel crickets and other invertebrates within these burrows are likely prey for California tiger salamander. California tiger salamanders are also known to take refuge in logs, debris piles, and cracks in the ground (Holland *et al.* 1990). Not much is known about California tiger salamander feeding behavior but it is likely that they forage opportunistically in upland habitat in addition to documented feeding while in burrows and in breeding ponds (personal communication with Peter Trenham, April 7, 2010).

Tiger salamanders are members of the Family Ambystomatidae (mole salamanders); although members of this family are known as "burrowing salamanders," California tiger salamanders are not known to create their own burrows in the wild, perhaps due to the hardness of soils in the California ecosystems in which they are found. Because they live underground in the burrows of mammals, they are rarely encountered in the uplands by humans even where they are abundant. Recent surveys performed within the East Bay Regional Parks District have demonstrated that California tiger salamanders may utilize less than 50 percent of suitable breeding habitat during any given year. This data indicates that even in ponds where the species appears to have been extirpated, regular breeding activities may still occur (Bobzien and DiDonato 2007). Burrows may be active (in use by small mammals) or inactive (small mammals are absent), but because burrows tend to be short lived without continued small mammal activity, they typically collapse within approximately 18 months if not maintained (Loredó *et al.* 1996). An active population of burrowing mammals is necessary to sustain sufficient underground refugia for the species. California tiger salamanders also may utilize leaf litter or desiccation cracks in the soil.

The upland burrows inhabited by California tiger salamanders have often been referred to as "aestivation" sites, which implies a state of inactivity, however, recent studies show that the animals move, feed, and remain active in their burrows (Trenham 2001; Van Hatten 2004). Researchers have long inferred that they are feeding while underground because the animals arrive at breeding ponds in good condition and are heavier when entering a pond than when leaving. Thus, upland habitat is a more accurate description of the terrestrial areas used by California tiger salamanders.

Once fall or winter rains begin, California tiger salamanders emerge from the upland sites on rainy nights to feed and to migrate to the breeding ponds (Stebbins 1985, 1989; Shaffer *et al.* 1993). Adult California tiger salamanders mate in the breeding ponds, after which the females lay their eggs in the water (Twitty 1941; Shaffer *et al.* 1993; Petranka 1998). Historically, California tiger salamanders utilized vernal pools, but the animals also currently breed in livestock ponds. Females attach their eggs singly, or in rare circumstances, in groups of two to four, to twigs, grass stems, vegetation, or debris (Storer 1925; Twitty 1941). In ponds with no or limited vegetation, they may be attached to objects, such as rocks and boards on the bottom (Jennings and Hayes 1994). California tiger salamander populations at eastern San Francisco Bay locations may have higher reproductive success in ponds with limited to no emergent vegetation, potentially due to a reduced number of aquatic predators that rely on more highly shaded areas (Bobzien and DiDonato 2007). After breeding, adults leave the pool and return to the small mammal burrows (Loredo *et al.* 1996; Trenham 1998a), although they may continue to emerge nightly for approximately the next two weeks to feed (Shaffer *et al.* 1993). Adults are unable to breed or the breeding effort fails in drought years when seasonal pools fail to provide adequate inundation (Barry and Shaffer 1994).

California tiger salamander eggs hatch in two to four weeks (Storer 1925; Shaffer and Trenham 2004). The larvae are aquatic with yellowish gray coloration and have broad flat heads, possess large, feathery external gills, and broad dorsal fins that extend well onto their back. The larvae feed on zooplankton, small crustaceans, and aquatic insects for approximately the first six weeks, after which they switch to larger prey (J. Anderson 1968). Larger larvae are known to consume tadpoles of Pacific tree frogs and California red-legged frogs (J. Anderson 1968; P. Anderson 1968). The larvae are among the top aquatic predators in their seasonal pool ecosystems. Larval California tiger salamanders often rest on the bottom in shallow water. They may also be found at varying depths in deep water pools. Young California tiger salamanders are typically wary and will often escape into vegetation on the bottom of the pool when approached by potential predators (Storer 1925).

The larval stage of the California tiger salamander usually last three to six months, as most seasonal ponds and pools dry up during the summer (Petranka 1998). The peak emergence of these metamorphs is typically between mid-June to mid-July (Loredo and Van Vuren 1996; Trenham *et al.* 2000) but in some areas as early as late February or early March. Amphibian larvae must grow to a critical minimum body size before they can metamorphose (change into a different physical form) to the terrestrial stage (Wilbur and Collins 1973). Individuals collected near Stockton in the Central Valley during April varied from 1.88 to 2.32 inches in length (Storer 1925). Feaver (1971) found that larvae metamorphosed and left the breeding pools 60 to 94 days after the eggs had been laid, with larvae developing faster in smaller, more rapidly drying pools. The longer the ponding duration, the larger the larvae and metamorphosed juveniles are able to grow, and the more likely they are to survive and reproduce (Pechmann *et al.* 1989; Semlitsch *et al.* 1988; Morey 1998; Trenham 1998b). The larvae will perish if a site dries before metamorphosis is complete (P. Anderson 1968; Feaver 1971). Pechmann *et al.* (1989) found a strong positive correlation with ponding duration and total number of metamorphosing juveniles in five salamander species. In Madera County, Feaver (1971) found that only 11 of 30 pools

sampled supported larval California tiger salamanders, and five of these died before metamorphosis could occur. Therefore, out of the original 30 pools, only six (20 percent) provided suitable conditions for successful reproduction that year. Size at metamorphosis is positively correlated with stored body fat and survival of juvenile amphibians, and negatively correlated with age at first reproduction (Semlitsch *et al.* 1988; Scott 1994; Morey 1998). In the late spring or early summer, before the ponds dry completely, metamorphosed juveniles leave ponds and enter upland habitat. This emigration occurs in both wet and dry conditions (Loredo and Van Vuren 1996; Loredo *et al.* 1996). Unlike during their winter migration, the wet conditions when adult California tiger salamanders typically move do not generally occur during the months when their breeding ponds begin to dry. As a result, juveniles may be forced to leave their ponds on rainless nights. Under these conditions, they may move only short distances to find temporary upland sites for the dry summer months, waiting until the next winter's rains to move further into suitable upland refugia. Once juvenile California tiger salamanders leave their birth ponds for upland refugia, they typically do not return to ponds to breed for an average of four to five years (Trenham *et al.* 2000). However, the minimum age at sexual maturity has been observed to be two years for males and two to three years for females (Loredo and Van Vuren 1996; Trenham *et al.* 2000). Individuals remain active in the uplands, coming to the surface during rainfall events to disperse or forage (Trenham *et al.* 2000).

Lifetime reproductive success for California tiger salamanders is low. Trenham *et al.* (2000) found the average female bred 1.4 times and produced 8.5 young that survived to metamorphosis per reproductive effort. This resulted in roughly 11 metamorphic offspring over the lifetime of a female. Data suggest that the two reasons for the low reproductive success are that most individuals require two years to become sexually mature, but some individuals may be slower to mature (Shaffer *et al.* 1993); and some animals do not breed until they are four to six years old. While individuals may survive for more than ten years, many breed only once, and in some populations, less than five percent of marked juveniles survive to become breeding adults (Trenham 1998b). With such low recruitment, isolated populations are susceptible to unusual, randomly occurring natural events as well as from anthropogenic factors that reduce breeding success and individual survival. Factors that repeatedly lower breeding success in isolated pools can quickly extirpate a population.

Movements made by California tiger salamanders can be grouped into two main categories: (1) breeding migration; and (2) inter-pond dispersal. Breeding migration is the movement of California tiger salamanders to and from a pond and the surrounding upland habitat. After metamorphosis, juveniles move away from breeding ponds into the surrounding uplands, where they live continuously for several years. During a study in Monterey County, it was found that upon reaching sexual maturity, most individuals returned to their natal/birth pond to breed, while 20 percent dispersed to other ponds (Trenham *et al.* 2001). Following breeding, adult California tiger salamanders return to upland habitats, where they may live for one or more years before breeding again (Trenham *et al.* 2000).

California tiger salamanders are known to travel long distances from breeding sites into upland habitats. Maximum distances moved are generally difficult to establish for any species, but

California tiger salamanders in Santa Barbara County have been recorded to disperse 1.3 miles from breeding ponds (Sweet 1998). California tiger salamanders are known to travel between breeding ponds; one study found that 20 to 25 percent of the individuals captured at one pond were recaptured later at ponds approximately 1,900 and 2,200 feet away (Trenham *et al.* 2001). In addition to traveling long distances during migration to or from ponds, California tiger salamanders may reside in burrows or other cover sites that are far from ponds. At one site in Contra Costa County, hundreds of California tiger salamanders have been captured three years in a row in upland habitat approximately 0.75 miles from the nearest breeding pond (Orloff 2011).

Although the observations above indicate that California tiger salamanders have the capacity for long distance movements, typically they stay closer to breeding ponds. Evidence suggests that subadult California tiger salamanders disperse further into upland habitats than adults. A trapping study conducted in Solano County during winter of 2002/2003 found that subadults used upland habitats further from breeding ponds than adults (Trenham and Shaffer 2005). More subadults were captured at distances of 328, 656, and 1,312 feet from a breeding pond than at 164 feet. Large numbers, approximately 20 percent of total captures, were found 1,312 feet from a breeding pond. Fitting a distribution curve to the data revealed that 95 percent of subadult at their study site could be found within 2,067 feet of the pond, with the remaining five percent being found at even greater distances. Results from the 2003 to 2004 trapping efforts detected subadult California tiger salamanders at even further distances, with a large proportion of the total California tiger salamanders caught at 2,297 feet from the breeding pond (Service 2004). Most subadults captured, even those at 2,100 feet, were still moving away from ponds (Service 2004). This data suggests that many California tiger salamanders travel long distances while still in the juvenile/subadult stage. Post-breeding movements away from breeding ponds by adults appear to be much shorter. During post-breeding emigration, radio-tracked adult California tiger salamanders were located in burrows 62 to 813 feet from their breeding ponds (Trenham 2001). These reduced movements may be due to adult California tiger salamanders having depleted physical reserves post-breeding, or also due to the drier weather conditions that can occur during the period when adults leave the ponds.

Although the distances that California tiger salamanders may move likely depend on life stage, the location of available refugia and breeding ponds, presence of natural and constructed barriers, habitat continuity, climate conditions, individual propensities, and other factors, movements and dispersal corridors likely are critical to California tiger salamander population dynamics, particularly because the animals likely currently persist as metapopulations¹ with disjunct population centers.

California tiger salamanders are also known to use several successive burrows at increasing distances from an associated breeding pond. Although previously cited studies provide information regarding linear movement from breeding ponds, upland habitat features appear to have some influence on movement. Trenham (2001) found that radio-tracked adults favored grasslands with scattered large oaks, over more densely wooded areas. The same study showed

¹ A metapopulation consists of a group of spatially separated populations of the same species which interact at some level.

no indication that certain habitats type are favored as terrestrial travel corridors over others (Trenham 2001). In addition, at two ponds completely encircled by drift fences and pitfall traps, captures of arriving adults and dispersing new metamorphs were distributed roughly evenly around the ponds. Thus, it appears that dispersal into the terrestrial habitat occurs randomly with respect to direction and habitat types.

With continued habitat loss, degradation, modification, and fragmentation, the California tiger salamander is still encountered in areas where their archetypical habitat is no longer found. It is not uncommon to find California tiger salamanders breeding in stock ponds or taking refuge under structural foundations. A large adult female California tiger salamander was recently found in the Caltrans ROW during construction of a SR 680 project (Caltrans EA 04-253751) in Alameda County (Derek Jansen, URS, personal communication on May 5, 2009). The California tiger salamander emerged from a burrow at the base of an overpass. The burrow was located in a disturbed area composed of fill material and separated from the nearest potential breeding pond, approximately 500 feet away, by a fenced storage area, four paved roads, road curbs, and a drainage ditch. These features were older than the salamander. This observation is also contrary to distribution provided in the Service's listing document which states that the listed salamander generally does not occur west of SR 680 in Alameda and Contra Costa Counties (Service 2004). California tiger salamanders have the potential to persist in disturbed areas as long as it provides at least one or more of their life history requirements. Our understanding of current distribution is incomplete.

Documented and/or potential predators on California tiger salamanders include coyotes, raccoons, striped skunks, opossums, egrets, great blue herons, crows, ravens, garter snakes, bullfrogs, California red-legged frogs, mosquito fish, and crayfish. In addition, predacious aquatic hexapods (arthropods) have also been shown to have a significant negative association with California tiger salamanders (Bobzien and DiDonato 2007). Domestic dogs have been observed eating California tiger salamanders at Lake Lagunitas at Stanford University (Sean Barry, ENTRIX, personal communication on July 2004).

Diseases may pose a significant threat though the specific effects of disease on the California tiger salamander are not known. Pathogens, fungi, water mold, bacteria, and viruses have been known to adversely affect other tiger salamander species and/or other amphibians. Pathogens are suspected of causing global amphibian declines (Davidson *et al.* 2003). Pathogen outbreaks have not been documented in the California tiger salamander, but chytrid fungus infections (chytridiomycosis) have been detected in California tiger salamander (Padgett-Flohr and Longcore 2005). Chytridiomycosis and ranaviruses are a potential threat to the California tiger salamander because these diseases have been found to adversely affect other amphibians, including tiger salamanders (Davidson *et al.* 2003; Lips *et al.* 2003). A deformity-causing infection, possibly caused by a parasite in the presence of other factors, has affected pond-breeding amphibians at known California tiger salamander breeding sites. This same infection has become widespread among amphibian populations in Minnesota and poses the threat of becoming widespread in California. Non-native species, such as bullfrogs and non-native tiger salamanders, are located within the range of the California tiger salamander and have been

identified as potential carriers of these diseases. Human activities can facilitate the spread of disease by encouraging the further introduction of non-native carriers and by acting as carriers themselves (i.e. contaminated boots or fishing equipment). Human activities can also introduce stress by other means, such as habitat fragmentation, that results in California tiger salamanders being more susceptible to the effects of disease. Disease will likely become a growing threat because of the relatively small and fragmented remaining California tiger salamander breeding sites, the many stresses on these sites due to habitat losses and alterations, and the many other potential disease-enhancing anthropogenic changes that have occurred both inside and outside the species' range.

California tiger salamanders are imperiled throughout their range by a variety of human activities (Service 2004). Current factors associated with declining populations of the salamander include continued degradation and loss of habitat due to agriculture and urbanization, hybridization with non-native eastern tiger salamanders (Fitzpatrick and Shaffer 2004; Riley *et al.* 2003), and introduced predators. Hybridization with non-native eastern tiger salamanders has not yet been identified within the Sonoma County population. Fragmentation of existing habitat and agricultural activities that degrade and/or eliminate breeding pools may represent the most significant current threats to the California tiger salamander, although populations are likely threatened by more than one factor. Isolation and fragmentation of habitats within many watersheds have precluded dispersal between sub-populations and jeopardized the viability of metapopulations (broadly defined as multiple subpopulations that occasionally exchange individuals through dispersal, and are capable of colonizing or "rescuing" extinct habitat patches). Other threats are predation and competition from introduced exotic species; disease; various chemical contaminants; road-crossing mortality; and certain unrestrictive mosquito and rodent control operations.

Recovery Actions Associated with the Sonoma California Tiger Salamander

The SRPCS has been developed and finalized (Conservation Strategy Team 2005) by a team of representatives from the Service, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, CDFG, Sonoma County and local Cities, North Coast Regional Water Quality Control Board, local governmental agencies, the Laguna de Santa Rosa Foundation, environmental community, and the private landowner community (Conservation Team).

The purpose of the SRPCS is threefold: (1) to establish a long-term conservation program sufficient to compensate potential adverse effects of future development on the Santa Rosa Plain, and to conserve and contribute to the recovery of the Sonoma California tiger salamander and the conservation of its sensitive habitat; (2) to accomplish the preceding in a fashion that protects stakeholders' (both public and private) land use interests, and (3) to support issuance of an authorization for incidental take of Sonoma California tiger salamanders that may occur in the course of carrying out a broad range of activities on the Santa Rosa Plain. The SRPCS is posted on the Service's Sacramento office website: (www.fws.gov/sacramento/es/santa_rosa_conservation.html).

Environmental Baseline

The proposed SR 116 Madrone Avenue Left-Turn Channelization Project is located within the range of the Sonoma California tiger salamander as defined in the SRPCS (Conservation Strategy Team 2005). No protocol level surveys for California tiger salamanders have been conducted in the action area.

The project is located in a fairly rural area within the Santa Rosa Plain with open grasslands segmented with two-lane roads, farm houses, and pockets of dense development. Although fragmented, occupied Sonoma California tiger salamander habitat persists in the local area, as evidenced by Sonoma California tiger salamander observations in the California Natural Diversity Database (CNDDDB).

The CNDDDB includes at least six observations of the Sonoma California tiger salamander within 0.6 miles of the construction footprint (CDFG 2012a, 2012b). The records span a period from 1995 to 2007 and include a variety of situational context. CNDDDB occurrence #740 is approximately 0.6 mile east of the construction footprint and included an adult salamander found in Caltrans' landscaped ROW. CNDDDB occurrence #648 includes Sonoma California tiger salamander eggs that were found in a roadside ditch along Alder Road, approximately 0.24 mile northeast of the construction footprint. According to the CNDDDB record, the Alder Road ditches in which the eggs were found had a maximum depth of 10 inches. A juvenile tiger salamander was found in a SR 116 drainage ditch less than 200 feet east of the construction footprint in 2005 (occurrence #935). Biologist, Dave Cook observed an adult Sonoma California tiger salamander crossing Derby Lane on a rainy December evening in 2005 (occurrence #1016). This salamander was approximately 250 feet north of the proposed construction footprint and was observed moving from the direction of flooded roadside ditches along the south side of Derby Lane. Cook inferred that these flooded ditches provided likely tiger salamander breeding habitat.

The ditches along the south side of Derby Lane from Madrone Avenue to Oak Avenue were flooded when the Service visited the action area on January 26, 2012. The ditches appeared to provide likely breeding habitat for the salamander despite the record low rain fall for the winter 2012 season. The drainage ditches along Derby Lane are not within the proposed construction footprint but do have direct linkage to cross drainages within the construction footprint. The three drainages crossing under SR 116 and draining northward into the Derby Lane ditch system are located on a north-facing grade that likely prevents them from backing-up or ponding and providing salamander breeding habitat.

A vernal pool system is located immediately north of Derby Lane between Madrone Avenue and Oak Avenue. These vernal pools and the surrounding grasslands provide likely Sonoma California tiger salamander breeding and upland habitat. Small mammal burrows that provide underground refugia for Sonoma California tiger salamanders were found within the construction footprint during the January 26, 2012 field visit. This is especially true for the approximately

50-foot wide, 550-foot-long grassy wedge between Madrone Lane and the eastern intersection between Derby Lane and SR 116. This grassy area is within the proposed construction footprint and will be subject to road widening and temporary disturbances.

Due to the proximity of recorded Sonoma California tiger salamander observations, the proximity of likely breeding habitat within roadside ditches and vernal pools, the presence of California tiger salamander underground refugia within the construction footprint, and the species' biology and ecology, the Service has determined that it reasonable to conclude that the Sonoma California tiger salamander inhabits the action area.

Status of Critical Habitat

The Service issued a proposed rule for the designation of critical habitat on August 18, 2009 (Service 2009). A final rule was issued on August 31, 2011 designating 47,383 acres of critical habitat for the Sonoma County DPS of the California tiger salamander in Sonoma County, California (Service 2011).

Under our regulations, we are required to identify the known physical and biological features essential to the conservation of the Sonoma California tiger salamander PCEs. All areas finalized as critical habitat for the Sonoma California tiger salamander are occupied, within the subspecies' historic geographic range, and contain sufficient PCEs to support at least one life history function. Based on our current knowledge of the life history, biology, and ecology of the Sonoma California tiger salamander and the requirements of the habitat necessary to sustain the essential life history functions of the subspecies, the Service has determined that the PCEs for the Sonoma California tiger salamander are:

- PCE 1: Standing bodies of fresh water (including natural and manmade (e.g., stock) ponds, vernal pools, and other ephemeral or permanent water bodies) that typically support inundation during winter and early spring, and hold water for a minimum of 12 consecutive weeks in a year of average rainfall.
- PCE 2: Upland habitats adjacent to and accessible from breeding ponds that contain small mammal burrows or other underground refugia that the species depends upon for food, shelter, and protection from the elements and predation.
- PCE 3: Accessible upland dispersal habitat between locations occupied by the species that allow for movement between such sites.

The designation of critical habitat for the Sonoma California tiger salamander included lands that were determined to be occupied at the time of listing and contained sufficient physical and biological features to support life history processes essential for the conservation of the Sonoma California tiger salamander. Furthermore, we determined that the area designated as critical habitat is essential for the conservation of the species.

A single unit was designated as critical habitat for the Sonoma California tiger salamander. The Santa Rosa Plains Unit is located in Central Sonoma County and contains approximately 47,383 acres, which includes 745 acres of State lands, 744 acres of city lands, 498 acres of county lands, 9 acres of individually owned tribal trust land, and 45,387 acres of private lands. No Federal lands were included in this unit. The unit is partially bordered on the west by the generalized eastern boundary of the 100-year Laguna de Santa Rosa floodplain, on the southwest by Hensley Road, on the south by Pepper Road (northwest of Petaluma), on the east generally by and near Petaluma Hill Road or by the urban centers of Santa Rosa and Rohnert Park, and on the north by the Town of Windsor.

This unit is characterized by vernal pools, seasonal wetlands, and associated grassland habitat. The critical habitat unit supports vernal pool complexes and manmade ponds that are currently known to support breeding Sonoma California tiger salamanders (PCE 1), upland habitats with underground refugia (PCE 2), and upland dispersal habitat allowing movement between occupied sites (PCE 3). A segment of the 100-year floodplain that is located between the Stony Point Conservation Area (near Wilfred Avenue) and the Northwest Cotati Conservation Area (near Nahmens Road) is included within the final designation to prevent fragmentation of the northern and southern breeding concentrations within the unit, by allowing for potential dispersal and genetic exchange.

Environmental Baseline for Critical Habitat

The proposed action is within the Sonoma California tiger salamander critical habitat unit SON-1 (Sonoma County). This unit contains features that are essential for the conservation of the Sonoma California tiger salamander in Sonoma County and includes aquatic habitat, upland non-breeding habitat with underground refugia, and dispersal habitat connecting occupied Sonoma California tiger salamander locations.

The approximately 3.49-acre construction footprint is primarily occupied by existing road surface and includes 0.62 acre of non-native grassland within the existing road ROW. The construction footprint contains upland habitat accessible from likely breeding sites and contains small mammal burrows or other underground refugia upon which California tiger salamanders depend for food, shelter, and protection from the elements and predation (PCEs 2 and 3). The upland habitat within the construction footprint is subject to maintenance such as mowing but is not managed or located in such a way that it would preclude California tiger salamander use of mammal burrows. Potential aquatic breeding habitat is located in nearby vernal pools and roadside ditches. The roadside ditches along Derby Lane provide potential breeding for the listed salamander and have connectivity with the drainages within the construction footprint. Therefore these local breeding habitats (PCE 1) are not within the construction footprint but are included within the project's action area.

Effects of the Proposed Action

The following effects analysis for the Sonoma California tiger salamander is based on the interim guidelines for the SRPCS (Conservation Strategy Team 2006). The interim guidelines do not differentiate between temporary and permanent effects.

The proposed project could have direct effects to Sonoma California tiger salamanders through direct mortality, injury, or harassment of individual subadults and adults. As defined in the SRPCS, the effects analysis for the Sonoma California tiger salamander is primarily based on the location of the action area relative to a known individual salamander observation and breeding pond locations. Implementation of the proposed action would result in the loss of 0.62 acre of upland habitat within 500 feet of potential breeding sites and within 500 feet of an adult Sonoma California tiger salamander breeding occurrence.

Effective implementation of Conservation Measures likely will minimize effects to the Sonoma California tiger salamander but incidental take may still occur due to construction activities and habitat loss. Therefore, construction activities have the potential to result in a variety of adverse effects that would result in take of the Sonoma California tiger salamander. Unless identified by the biological monitor or site personnel, and rescued by the biological monitor, individuals exposed during excavations likely will be crushed and killed or injured by construction-related activities. Even with biological monitoring, overall awareness, and proper escape ramps, California tiger salamanders could fall into the trenches, pits, or other excavations, and then risk being directly killed or be unable to escape and be killed due to desiccation, entombment, or starvation. Proper trash disposal is often difficult to enforce on a large construction site and is a common non-compliance issue. Edible trash left during or after construction activities could attract predators, such as raccoons, crows, and ravens, to the sites, which could subsequently prey on the listed amphibian. Use of erosion control devices with mono-filament may result in California tiger salamander entrapment that can result in death by predation, starvation, or desiccation (Stuart *et al.* 2001).

According to Caltrans, the proposed project will likely include night time construction activities. Night work has a greater potential of adversely affecting nocturnal species such as the California tiger salamander. Wise and Buchanan (2006) reviewed the adverse effects that may result from night time illumination on salamander species. Artificial lighting used during night time construction may increase predation of California tiger salamanders if it occurs during periods of fall, winter, or spring rains, because the amphibians will lose the cover of darkness for movement. Nocturnal foraging by salamander species may be affected by artificial lighting. In their study of the red-backed salamander, Wise and Buchanan (2006) observed that salamanders were less likely to emerge to forage within one to two hours following sunset in areas that were illuminated. During such foraging bouts, visual information was used for locating prey. Greater light levels delay emergence, resulting in less foraging time, but could have increased the ability of the salamanders to capture prey; however, they also could make the amphibians more vulnerable to predation. Many salamanders, such as the California tiger salamander, are terrestrial as adults but migrate to ponds to breed and lay eggs. The orientation of some of these

terrestrial species away from and toward these ponds is influenced by the spectral characteristics of light (Wise and Buchanan 2006). Artificial lights that emit unusual spectra may disrupt these migration patterns. The potential adverse effects associated with nighttime work will be minimized by conducting the project between April 15 and October 31 when tiger salamanders are most likely to remain in underground refugia. Nighttime work is more likely to adversely affect juvenile salamanders dispersing outside the winter and early spring wet season.

The proposed conservation measures are likely to minimize the take of Sonoma California tiger salamanders that could result from the proposed construction activities. Biological monitoring, worker education, the implementation of proper erosion control BMPs, contaminate control, pre-construction surveys, and proper limited localized relocation of Sonoma California tiger salamanders in immediate harm should reduce the death and injury to individual California tiger salamanders.

Conducting construction during months when rain events are less likely to occur and implementation of standard erosion control BMPs should minimize effects to the potential California tiger salamander breeding habitat in the ditches along Derby Lane, downstream of the construction footprint. Disturbance of the drainage features within the construction footprint will be limited to culvert extensions. Therefore, the project is not expected to result in any significant change in the conveyance of local runoff that inundates the Derby Lane ditches during years of normal to above normal precipitation.

The upland habitat within the approximately 50-foot wide, 550-foot-long grassy wedge between Madrone Lane and the eastern intersection between Derby Lane and SR 116, subjected to temporary disturbance for staging and workspace, will be restored to a maintained grassy area following construction. Small mammals are likely to return to the area, establishing burrows that can be used by the California tiger salamander.

In addition, the purchase of Sonoma California tiger salamander credits at an approved conservation bank will minimize the effects associated with the loss of 0.62 acre of Sonoma California tiger salamander habitat. This land will be protected and managed for the conservation of the species in perpetuity. The protected land will provide habitat for breeding, feeding, or sheltering commensurate with or better than habitat lost as a result of the project. These lands will help maintain the geographic distribution of the species and will contribute to the recovery of the species by increasing the amount of habitat that is secure from development threats and the other factors that threaten the species that can be addressed by habitat protection and management.

Effects of the Proposed Action on Critical Habitat

Implementation of the proposed action would result in the loss of 0.62 acre of Sonoma California tiger salamander critical habitat. The loss would be limited to upland habitat that contains refugia and supports dispersal (PCEs 2 and 3). No aquatic breeding habitat (PCE 1) would be directly affected by the proposed action and measures will be implemented to minimize indirect

effects to potential breeding habitat. This level and location of habitat loss is not expected to appreciably diminish the value of the critical habitat proposed for the Sonoma California tiger salamander, or prevent critical habitat from sustaining its role in the conservation and recovery of the species.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The Service is not aware of any cumulative effects to the Sonoma California tiger salamander that are reasonably certain to occur within the action area.

Conclusion

After reviewing the current status of the Sonoma California tiger salamander in Sonoma County, the environmental baseline for the species, and the effects of the proposed action and the cumulative effects, it is the Service's biological opinion that the proposed SR 116 Madrone Avenue Left-Turn Channelization Project is not likely to jeopardize the continued existence of the Sonoma California tiger salamander in Sonoma County. We based this determination on: (1) habitat losses would be small and limited to upland habitat for the Sonoma California tiger salamander; (2) no Sonoma California tiger salamander breeding ponds would be directly lost; (3) conservation measures would be implemented to minimize the adverse effects on individual Sonoma California tiger salamanders; and (4) the adverse effects of the proposed action would be offset by the acquisition of 1.24 acres of occupied Sonoma California tiger salamander habitat at an approved conservation bank within the range of the Sonoma County DPS. This habitat will be protected and managed for the benefit of the Sonoma California tiger salamander in perpetuity.

Critical habitat for the Sonoma California tiger salamander occurs in the action area. The Service has determined that the proposed action is not likely to result in the destruction or adverse modification of critical habitat for the Sonoma California tiger salamander. We base this conclusion on a minimal area (0.62 acre) of critical habitat would be lost and 1.24 acres of occupied critical habitat would be preserved and managed in perpetuity at an approved conservation bank within the range of the Sonoma County DPS. Therefore, critical habitat for the Sonoma California tiger salamander is anticipated to remain functional and retain the ability for the PCEs to continue to function to serve the intended conservation role for the Sonoma California tiger salamander.

INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. *Take* is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. *Harass* is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. *Harm* is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. *Incidental take* is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by Caltrans so that they become binding conditions of any grant or permit issued to Caltrans as appropriate, in order for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this Incidental Take Statement. If Caltrans: (1) fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document; and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Take

The Service anticipates that incidental take of the Sonoma California tiger salamander will be difficult to detect due to their wariness, cryptic nature, and the abundance of potential cover sites within the action area. Finding an injured or dead California tiger salamander is unlikely due to their relatively small body size, rapid carcass deterioration, and likelihood that the remains will be removed by a scavenger. Losses of the California tiger salamander may also be difficult to quantify due to a lack of baseline survey data and seasonal and annual fluctuations in their numbers due to environmental or human-caused disturbances. There is a risk of harm, harassment, injury and mortality as a result of the proposed construction activities, the permanent and temporary loss and degradation of suitable habitat, and capture and relocation efforts; therefore, the Service is authorizing take incidental to the proposed action as: (1) the injury and mortality of no more than one adult or sub-adult California tiger salamander; and (2) the capture, harm and harassment of all adult and sub-adult California tiger salamanders within the 3.49-acre action area. Upon implementation of the following *Reasonable and Prudent Measures*, Sonoma California tiger salamanders within the action area in proportion to the amount and type of take outlined above will become exempt from the prohibitions described under section 9 of the Act. No other forms of take are exempted.

This biological opinion does not authorize take for non-Federal actions associated with use, operation, and maintenance of SR 116. Routine Caltrans' maintenance activities such as the removal and displacement of sand, silt, sediment, debris, rubbish, vegetation, and other obstruction flow; the control of weeds, grasses and emergent vegetation, minor repair of existing facilities, rip rap replacement, and culvert replacement have the potential to result in take of the Sonoma California tiger salamander.

Effect of the Take

The Service has determined that this level of anticipated take for the Sonoma California tiger salamander is not likely to jeopardize the continued existence of the species.

Reasonable and Prudent Measure

The following reasonable and prudent measure is necessary and appropriate to minimize the effect of the proposed action on the Sonoma California tiger salamander. Caltrans will be responsible for the implementation and compliance with this measure:

1. Caltrans shall minimize the effect of take to the Sonoma California tiger salamander.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, Caltrans shall ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. The following Terms and Conditions implement Reasonable and Prudent Measure one (1):
 - a. Caltrans shall minimize the potential for harm, harassment, or killing of the Sonoma California tiger salamanders resulting from project related activities by implementing the conservation measures as described in the *Description of the Proposed Action* of this biological opinion.
 - b. Caltrans shall require all contractors to comply with the Act in the performance of the action and shall perform the action as outlined in the *Description of the Proposed Action* of this biological opinion as provided by Caltrans in the December 2011, BA and all other supporting documentation submitted to the Service.
 - c. Caltrans shall include language in their contracts that expressly requires contractors and subcontractors to work within the boundaries of the project footprints identified in this biological opinion, including vehicle parking, staging, laydown areas, and access roads.

- d. The RE or their designee shall be responsible for implementing the conservation measures and Terms and Conditions of this biological opinion and shall be the point of contact for the project. The RE or their designee shall maintain a copy of this biological opinion onsite whenever construction is taking place. Their name and telephone number shall be provided to the Service at least thirty (30) calendar days prior to groundbreaking. Prior to ground breaking, the RE must submit a letter to the Service verifying that they possess a copy of this biological opinion and have read and understand the *Terms and Conditions*.
- e. The RE shall halt work and immediately contact the agency-approved biologist(s) and the Service and CDFG in the event that a Sonoma California tiger salamander gains access to a construction zone. The RE will suspend construction activities within a 100-foot radius of the indentified animal that could reasonably result in a take until the animal leaves the site voluntarily or is removed by the biologist(s).
- f. An outline of the worker environmental awareness program shall be submitted to the Coast Bay/Forest Foothill Division Chief in the Sacramento Fish and Wildlife Office within twenty (20) working days prior to the initial onset of construction activities. As needed, training shall be conducted in Spanish for Spanish language speakers. Documentation of the training shall be kept on file and available on request.
- g. At least thirty (30) calendar days prior to initiating construction activities, the project proponents shall submit the names and qualifications of the proposed biological monitor(s) for Service approval.
- h. Prior to approval, the proposed biological monitor(s) shall submit a letter to the Service verifying that they possess a copy of this biological opinion and understand its *Terms and Conditions*. The biologist(s) shall keep a copy of this biological opinion in their possession when onsite.
- i. An agency-approved biologist(s) shall be onsite during construction for the Sonoma California tiger salamander:
 - 1) Any day when there is a 70 percent or greater chance of rain;
 - 2) A twenty-four (24)- hour period when rain (0.25 inch or more) has fallen; and
 - 3) The day following a rainfall of 0.25 inch or more (in the event California tiger salamander's moved on the intervening night).
- j. An agency-approved biologist(s) shall perform a clearance survey immediately prior to the initial ground disturbance. Safety permitting, the agency-approved biologist(s) shall investigate areas of disturbed soil for signs of listed species within 30 minutes following the initial disturbance of that given area.

- k. No more than thirty (30) calendar days prior to any ground disturbance, pre-construction surveys shall be conducted by the agency-approved biologist(s) for the California tiger salamander. These surveys shall include 100 percent coverage of the project limits and accessible adjacent areas. The biologist(s) shall investigate all potential California tiger salamander cover sites. This includes thorough investigation of mammal burrows, appropriately sized soil cracks, and debris. Vacant entrances and other refuge features shall be collapsed or removed following investigation.
- l. An agency-approved biologist(s), Environmental Construction Liason, and/or Caltrans District Stormwater Coordinator, shall inspect the project site within one week prior to a forecasted rain event to ensure that the adequate stormwater BMPs are properly installed. The monitor(s) shall also inspect the site during and/or within two calendar days following the onset of the rain event to ensure that the stormwater BMPs are adequate in minimizing harm to California tiger salamanders and their habitat.
- m. Each California tiger salamander encounter shall be treated on a case-by-case basis in coordination with the Service but general guidance is as follows: (1) leave the non-injured salamander if it is not in danger or (2) move the salamander to a nearby location if it is in danger. These two options are further described as follows.
 - 1) When a California tiger salamander is encountered in the action area the first priority is to stop all activities in the surrounding area that have the potential to result in the harm, harassment, injury, or death of the individual. Then the monitor needs to assess the situation in order to select a course of action that will minimize adverse effects to the individual. Contact the Service once the site is secure. The contacts for this situation are Ryan Olah (ryan_olah@fws.gov) or John Cleckler (john_cleckler@fws.gov). They can be reached at (916) 414-6600. If you get voicemail message for these contacts then contact John Cleckler on his cell phone at (916) 712-6784.

The first priority is to avoid contact with the salamander and allow it to move out of the action area and hazardous situation on its own to a safe location. The animal shall not be picked up and moved because it is not moving fast enough or it is inconvenient for the construction schedule. This guidance only applies to situations where a California tiger salamander is encountered on the move during conditions that make their upland travel feasible. This does not apply to California tiger salamander that are uncovered or otherwise exposed or in areas where there is not sufficient adjacent habitat to provide escape cover and safe access to breeding, feeding, and sheltering habitat should they move outside the construction footprint.

Avoidance is the preferred option if a salamander is not moving and is using aquatic habitat or if the salamander is within some sort of burrow or other

refugia. The area shall be well-marked for avoidance by construction and a Service-approved biological monitor shall be assigned to the area when work is taking place nearby.

- 2) The animal shall be captured and moved when it is the only option to prevent its death or injury.

If appropriate habitat is located immediately adjacent to the capture location then the preferred option is short distance relocation to that habitat. This must be coordinated with the Service and CDFG but the general guidance is the salamander shall not be moved outside of the area it would have traveled on its own. Under no circumstances should a Sonoma California tiger salamander be relocated to another property without the owner's written permission. It is Caltrans' responsibility to arrange for that permission.

The release must be coordinated with the Service and CDFG and will depend on where the individual was found and the opportunities for nearby release. In most situations the release location is likely to be into the mouth of a small burrow or other suitable refugia and in certain circumstances pools without non-native predators may be suitable for salamanders.

Only agency-approved biologists for the project can capture California tiger salamander. Nets or bare hands may be used to capture California tiger salamanders. Soaps, oils, creams, lotions, repellents, or solvents of any sort cannot be used on hands within two hours before and during periods when they are capturing and relocating California tiger salamanders. To avoid transferring disease or pathogens between sites during the course of surveys or handling of the salamanders, agency-approved biologists must use the following guidance for disinfecting equipment and clothing. These recommendations are adapted from the *Declining Amphibian Population Task Force's Code* which can be found in their entirety at:

<http://www.open.ac.uk/daptf/>.

- i. All dirt and debris, including mud, snails, plant material (including fruits and seeds), and algae, shall be removed from nets, traps, boots, vehicle tires and all other surfaces that have come into contact with water and/or an amphibian. Cleaned items shall be rinsed with clean water before leaving each site.
- ii. Boots, nets, traps, and other equipment, shall then be scrubbed with either a 70 percent ethanol solution, a bleach solution (0.5 to 1.0 cup of bleach to 1.0 gallon of water), QUAT 128 (quaternary ammonium, use 1:60 dilution), or a 6 percent sodium hypochlorite 3 solution and rinsed clean with water between sites. Avoid cleaning equipment in

- the immediate vicinity of a pond or wetland. All traces of the disinfectant shall be removed before entering the next aquatic habitat.
- iii. Used cleaning materials (liquids, etc.) shall be disposed of safely, and if necessary, taken back to the lab for proper disposal.
 - iv. Agency-approved biologists shall limit the duration of handling and captivity. While in captivity, individual California tiger salamanders shall be kept in a cool, dark, moist, aerated environment, such as a clean and disinfected bucket or plastic container with a damp sponge. Containers used for holding or transporting shall not contain any standing water.
- n. Plastic mono-filament netting (erosion control matting) or similar material shall not be used at the project site because California tiger salamander may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds. This measure shall be implemented through contractors and subcontractors as part of the Caltrans standard BMPs.
 - o. Sonoma California tiger salamander mitigation at mitigation bank or through purchase and conservation of habitat shall be submitted to the Service for review and approval.
 - p. Caltrans shall provide a revegetation plan to be reviewed and approved by the Service and CDFG no later than sixty (60) calendar days prior to groundbreaking on the construction phase of the project. The plan is not limited to but shall include: schedule, methodology, a list of the seed mixes, plant material source, maintenance schedule, monitoring program, success criteria, non-native control, and remediation and adaptive management. In addition, annual monitoring reports on the success of the revegetation shall be provided to the Service until success criteria have been met.
 - q. If requested, before, during, or upon completion of ground breaking and construction activities, Caltrans shall allow access by Service and CDFG personnel to the action area to inspect project effects to California tiger salamanders and their habitat.
 - r. To avoid injury or death of a California tiger salamander, no firearms shall be allowed in the action area except for those carried by authorized security personnel, or local, State, or Federal law enforcement officials.

Reporting Requirements

Caltrans shall report to the Service any information about take or suspected take of listed-species not authorized by this biological opinion. Injured California tiger salamanders shall be cared for by a licensed veterinarian or other qualified person such as the onsite biologist; dead individuals

of any listed species shall be preserved according to standard museum techniques and held in a secure location. The Service shall be notified within one working day of the discovery of death or injury to a listed species that results from project related activities or is observed at the project site. Notification shall include the date, time, and location of the incident or of the finding of a dead or injured animal clearly indicated on a U.S. Geological Survey 7.5-minute quadrangle and other maps at a finer scale, as requested by the Service, and any other pertinent information. Dead individual animals shall be placed in a sealed plastic bag with a piece of paper containing information on where and when the animal was found along with the name of the person who found it, the bag shall be frozen in a freezer located in a secure location until instructions are received from the Service regarding the disposition of the specimen or the Service takes custody of the specimen. The Service contacts are the Coast-Bay/Forest Foothill Division Chief of the Endangered Species Program in the Sacramento Fish and Wildlife Office at (916) 414-6600 and the Resident Agent-in-Charge of Service's Law Enforcement Division at (916) 414-6660.

Caltrans shall submit a post-construction compliance report prepared by the on-site biologist to the Sacramento Fish and Wildlife Office within sixty (60) calendar days of the date of the completion of construction activity. This report shall detail (i) dates that construction occurred; (ii) pertinent information concerning the success of the project in meeting compensation and other conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on the Sonoma California tiger salamander, if any; (v) occurrences of incidental take to listed species, if any; and (vi) other pertinent information.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases. The Service requests notification of the implementation of any conservation recommendations in order to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats. We propose the following conservation recommendations:

1. Enhancing habitat connectivity and wildlife passage across roads as well as reducing road effects should be included in the *Purpose and Needs* section of environmental documents. FHWA agreed to coordinate with the Service on wildlife movement issues in a June 2, 2010, letter addressed to Mr. Greg Costello of the Western Environmental Law Center. As their NEPA delegate, Caltrans should adopt the commitments made by FHWA to consider wildlife movement in transportation planning and project development.
2. Caltrans should include a wildlife passage section in their biological assessments that include an analysis of the existing passage and how the project will affect passage. The analysis should include identification of the species' resources on both sides of the project boundaries, an appropriately timed road mortality survey to identify "hot spots," and strategic locations

where the species could benefit from the enhancement of an existing crossing or the installation of a new crossing. Caltrans should coordinate with their headquarters office and the University of California at Davis Road Ecology Center to develop a passage and road effects approach. Further guidance is provided by FHWA's *Wildlife Vehicle Collision Reduction Study* available at: <http://www.fhwa.dot.gov/environment/hconnect/wvc/index.htm>.

3. Roadways can constitute a major impediment or barrier to wildlife movement. Therefore, Caltrans should incorporate culverts, tunnels, or bridges on highways and other roadways that allow safe passage for the California tiger salamander. Include photographs, plans, and other information in BAs if "wildlife friendly" crossings are incorporated into projects. Efforts should be made to establish upland culverts designed specifically for wildlife movement. Transportation agencies should also acknowledge the value of enhancing human safety by providing safe passage for wildlife in their early project design.
4. Caltrans should reference information from the internal system they have developed to keep track of road mortality records and the University of California at Davis, Road Ecology Center's California Roadkill Observation System (<http://www.wildlifecrossing.net/california/>) in their BAs.
5. Following through with the December 21, 2010, Memorandum of Understanding agreement regarding advanced mitigation, Caltrans should consider establishing functioning preservation and creation conservation banking systems to further the conservation of the California tiger salamander and other listed species. Such banking systems have potential to be used for other required mitigation (i.e., seasonal wetlands, riparian habitats, etc.) where appropriate. Efforts should be made to preserve habitat along roadways in association with wildlife crossings.

REINITIATION--CLOSING STATEMENT

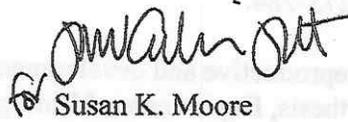
This concludes formal consultation on the proposed SR 116 Madrone Avenue Left-Turn Channelization Project in Sonoma County, California. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion, including work outside of the project footprint analyzed in this opinion and including vehicle parking, staging, lay down areas, and access roads; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion including use of rodenticides or herbicides; relocation of utilities; and use of vehicle parking, staging, lay down areas, and access roads; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any additional take will not be exempt from the prohibitions of section 9 until consultation has been completed on a reinitiation.

Ms. Moujan Mostaghimi

33

If you have questions concerning this biological opinion on the proposed SR 116 Madrone Avenue Left-Turn Channelization Project, please contact John Cleckler or Ryan Olah at the letterhead address or at (916) 414-6600.

Sincerely,



Susan K. Moore
Field Supervisor

cc:

Stephanie Buss and Melissa Escaron, California Department of Fish and Game, Yountville, California

Fernando Martinez and Jeffrey Jensen, California Department of Transportation, Oakland, California

Literature Cited

- Anderson, J. D. 1968. Comparison of the food habits of *Ambystoma macrodactylum sigillatum*, *Ambystoma macrodactylum croceum*, and *Ambystoma tigrinum californiense*. *Herpetologica* 24(4): 273-284.
- Anderson, P. R. 1968. The reproductive and developmental history of the California tiger salamander. Masters thesis, Department of Biology, Fresno State College, Fresno, California. 82 pages.
- Barry, S. J. and H. B. Shaffer. 1994. The status of the California tiger salamander (*Ambystoma californiense*) at Lagunita: 50-year update. *Journal of Herpetology* 28(2): 159-164.
- Bobzien, S. and J. E. DiDonato. 2007. The Status of the California Tiger Salamander (*Ambystoma californiense*), California Red-Legged Frog (*Rana draytonii*), Foothill Yellow-Legged Frog (*Rana boylei*), and other Aquatic Herpetofauna in the East Bay Regional Park District, California. East Bay Regional Park District. Oakland, California.
- California Department of Fish and Game (CDFG). 2012a. California Natural Diversity Data Base (CNDDB) RAREFIND. Natural Heritage Division, Sacramento, California.
- _____. 2012b. BIOSIS. Natural Heritage Division, Sacramento, California.
- Conservation Strategy Team. 2005. Santa Rosa Plain Conservation Strategy. Final. December 1, 2005. Available at the Sacramento Service office website: www.fws.gov/sacramento/es/santa_rosa_conservation.html.
- _____. 2006. Letter from Susan K. Moore of the U.S. Fish and Wildlife Service and Robert W. Floerke of the Central Coast Region office of the California Department of Fish and Game to Mike Reilly and Jake Mackenzie, Co-Chairmen of the Santa Rosa Plain Conservation Strategy Implementation Committee. May 16, 2006. Available at: http://www.fws.gov/sacramento/es/documents/Santa_Rosa_Final_Conservation_Strategy/Santa_Rosa_conservation_joint_guidance_ltr.pdf.
- Davidson, E. W., M. Parris, J. Collins, J. Longcore, A. P. Pessier, and J. Brunner. 2003. Pathogenicity and transmission of Chytridiomycosis in tiger salamanders (*Ambystoma tigrinum*). *Copeia* 2003(3): 601-607.
- Feaver, P. E. 1971. Breeding pool selection and larval mortality of three California amphibians: *Ambystoma tigrinum californiense* Gray, *Hyla regilla* Baird and Girard and *Scaphiopus hammondi hammondi* Girard. Master's thesis, Department of Biology, Fresno State College, Fresno, California. 58 pages.
- Fitzpatrick, B. M. and H. B. Shaffer. 2004. Environmental-dependent admixture dynamics in a tiger salamander hybrid zone. *Evolution* 58(6): 1282-1293.

- Holland, D., M. Hayes, and E. McMillan. 1990. Late summer movement and mass mortality in the California tiger salamander (*Ambystoma californiense*). *Southwest Naturalist*, 35(2): 217-220.
- Jennings, M.R. and M.P. Hayes. 1994. Amphibian and reptile species of special concern in California. Final report to California Dept. of Fish and Game. Sacramento, California.
- Lips K. R., D. E. Green, and R. Papendick. 2003. Chytridiomycosis in wild frogs from southern Costa Rica. *Journal of Herpetology* 37(1): 215-218.
- Loredo, I. and D. Van Vuren. 1996. Reproductive ecology of a population of the California tiger salamander. *Copeia* 1996(4): 895-901.
- Loredo, I., D. Van Vuren and M. L. Morrison. 1996. Habitat use and migration behavior of the California tiger salamander. *Journal of Herpetology* 30(2): 282-285.
- Morey, S. R. 1998. Pool duration influences age and body mass at metamorphosis in the western spadefoot toad: implications for vernal pool conservation. Pages 86-91 in Witham, C.W., E.T. Bauder, D. Belk, W.R. Ferren Jr., and R. Ornduff (eds). *Ecology, Conservation, and Management of Vernal Pool Ecosystems - Proceedings from a 1996 Conference*. California Native Plant Society. Sacramento, California. 1998.
- Orloff, S. G. 2011. Movement Patterns and Migration Distances in an Upland Population of California Tiger Salamander (*Ambystoma californiense*). *Herpetological Conservation and Biology* 6(2): 266-276.
- Padgett-Flohr G. E. and J. E. Longcore. 2005. *Ambystoma californiense* (California Tiger Salamander) Fungal infection. *Herpetological Review* 36:50-51.
- Pechmann, J. H. K., D. E. Scott, J. W. Gibbons, and R. D. Semlitsch. 1989. Influence of wetland hydroperiod on diversity and abundance of metamorphosing juvenile amphibians. *Wetlands Ecology and Management* 1(1):3-11.
- Petranka, J.W. 1998. *Salamanders of the United States and Canada*. Smithsonian Institution Press. Washington, D.C.
- Riley, S.P.D., H.B. Shaffer, S.R. Voss, and B.M. Fitzpatrick. 2003. Hybridization between a rare, native tiger salamander (*Ambystoma californiense*) and its introduced congener. *Biological Applications* 13(5): 1263-1275.
- Scott, D. E. 1994. The effect of larval density on adult demographic traits in *Ambystoma opacum*. *Ecology* 75:1383-1396.

- Semlitsch, R. D., D. E. Scott, and J. H. K. Pechmann. 1988. Time and size at metamorphosis related to adult fitness in *Ambystoma talpoideum*. *Ecology* 69: 184-192.
- Shaffer, H.B., R.N. Fisher, and S.E. Stanley. 1993. Status report: The California tiger salamander (*Ambystoma californiense*). Final report for the California Department of Fish and Game. 33 pages.
- Shaffer, H.B., G. B. Pauly, J.C. Oliver, and P.C. Trenham. 2004. The molecular phylogenetics of endangerment: cryptic variation and historic phylogeography of the California tiger salamander, *Ambystoma californiense*. *Molecular Ecology* 13: 3033-3049.
- Stebbins, R. C. 1989. Declaration of R. C. Stebbins in support of petition of writ of mandate. Sierra Club and Richard Pontuis v. Gilroy City Council, Shappell Industries et al. Santa Clara County Superior Court. March 16, 1989. 11 pages plus exhibits. San Jose, California.
- _____. 1985. A field guide to western reptiles and amphibians. Houghton Mifflin Co. Boston, Massachusetts.
- Storer, T.I. 1925. A synopsis of the amphibia of California. University of California Publications in Zoology 27.
- Stuart, J. M., M. L. Watson, T. L. Brown, and C. Eustice. 2001. Plastic netting: an entanglement hazard to snakes and other wildlife. *Herpetological Review* 32(3): 162-164.
- Sweet, S. 1998. Letter to Dwight Harvey, U.S. Fish and Wildlife Service with a report titled "Vineyard Development Posing an Imminent Threat to *Ambystoma californiense* in Santa Barbara County, California." University of California, Santa Barbara, California.
- Trenham, P. 1998a. Radiotracking information. University of California, Davis, California.
- _____. 1998b. Demography, migration, and metapopulation structure of pond breeding salamanders. Ph.D. dissertation. University of California, Davis, California.
- _____. 2001. Terrestrial habitat use by adult California tiger salamanders. *Journal of Herpetology* 35(2): 343-346.
- Trenham, P.C. and H.B. Shaffer. 2005. Amphibians upland habitat use and its consequences for population viability. *Ecological Applications* 15(4): 1158-1168.
- Trenham, P.C., H.B. Shaffer, W.D. Koenig and M.R. Stromberg. 2000. Life history and demographic variation in the California tiger salamander (*Ambystoma californiense*). *Copeia* 2000(2): 365-377.

- Trenham, P. C., W. D. Koenig, and H. B. Shaffer. 2001. Spatially autocorrelated demography and interpond dispersal in the salamander *Ambystoma californiense*. *Ecology* 82: 3519-3530.
- Twitty, V. C. 1941. Data on the life history of *Ambystoma tigrinum californiense* Gray. *Copeia* 1941 (1):1-4.
- U.S. Fish and Wildlife Service (Service). 2004. Endangered and threatened wildlife and plants; determination of threatened status for the California tiger salamander; and special rule exemption for existing routine ranching activities; Final rule. *Federal Register* 69: 47212-47248.
- _____. 2009. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Sonoma County Distinct Population Segment of California Tiger Salamander (*Ambystoma californiense*); Proposed Rule. *Federal Register* 74: 41662-41672.
- _____. 2011. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Sonoma County Distinct Population Segment of California Tiger Salamander; Final Rule. *Federal Register* 76: 54346-54672.
- Van Hattem, M. G. 2004. Underground ecology and natural history of the California tiger salamander. Master of Science thesis. San Jose State University, San Jose, California.
- Wilbur, H. M. and J. P. Collins. 1973. Ecological aspects of amphibian metamorphosis. *Science* (n.s.) 182(4119): 1305-1314.
- Wise, S. E. and B. W. Buchanan. 2006. Influence of artificial illumination on the nocturnal behavior and physiology of salamanders. Pages 221-251 in C. Rich and T. Longcore, (eds.). *Ecological Consequences of artificial night lighting*. Island Press. Washington, D.C.

