

INFORMATION HANDOUT

For Contract No. 03-0F2704

At 03-Yub-65-2.21

Identified by

Project ID 0300000076

PERMITS

United States Army Corps of Engineers
Non-Reporting Nationwide 404

WATER QUALITY

California Regional Water Quality Control Board
Central Valley Region Application Number: WDID#5A58CR00102

AGREEMENTS

California Department of Fish and Wildlife
Notification No. 1600-2013-0217-R2

National Marine Fisheries Services

ENCROACHMENT PERMITS

California Department of Water Resources, Central Valley Flood Protection Board
Permit No. 18964 BD

MATERIALS INFORMATION

Final Hydraulic Report



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO CA 95814-2922

March 4, 2014

Regulatory Division (SPK-2013-00225)

Mr. John Holder
California Department of Transportation
703 B Street
P.O. Box 911
Marysville, California 95901

Dear Mr. Holder:

We are responding to your agent's November 20, 2013, request for a re-verification of Department of the Army Nationwide Permit 14 for the SR65 Dry Creek Bridge Scour Project (PM 2.21) (EA 03-0F270; EFIS #0300000076). This approximately 1.5-acre project involves activities, including discharges of dredged or fill material, in waters of the United States to repair Dry Creek Bridge. The project is located in Dry Creek, Section 30, Township 14 North, Range 5 East, Mount Diablo Meridian, Latitude 39.02240°, Longitude -121.44513°, Wheatland, Yuba County, California.

Based on the information your agent provided, the proposed activity, resulting approximately 0.24 acre of permanent adverse effects and 0.03 acre of temporary adverse effects to Dry Creek, is authorized by Nationwide Permit Number (NWP) 14 – Linear Transportation. However, until Section 401 Water Quality Certification for the activity has been issued or waived, our authorization is denied without prejudice. Once you have provided us evidence of water quality certification, the activity is authorized and the work may proceed subject to the conditions of certification and the NWP. Your work must comply with the general terms and conditions listed on the enclosed 2012 NWP 14 information sheets (enclosure 1), the Final Sacramento District NWP Regional Conditions for California (enclosure 2), and the following Special Conditions:

Special Conditions:

1. To mitigate for 0.24 acre of adverse impacts to waters of the United States (Dry Creek), you shall debit 0.30 credits of seasonal wetlands (0.24*1.25 ratio) at Beach Lake Mitigation Bank. The selected mitigation bank shall include the area of the permitted project within its service area. Evidence of this purchase shall be provided to the Corps prior to initiation of construction activities within waters of the U.S.
2. The plan drawing entitled *YUB-65 PM 2.21 Dry Creek Bridge Scour Mitigation Project EA: 03-0F270EFIS: 0300000076, Impact to Other Waters of the U.S.*, dated September 3, 2013, created by Caltrans, is incorporated as a condition of this authorization (enclosure 3). All deviations from the work as authorized, which result in additional impacts to waters of the U.S., including wetlands, must be coordinated with this office prior to impacts.
3. The enclosed *Restoration Plan, Dry Creek Bridge Scour Mitigation Project, State Route 65 in Yuba County, Post Mile 2.21, EA: 03-0F270EFIS: 0300000076*, dated September 2013, is incorporated as a condition of this authorization (enclosure 4).

4. To ensure your project complies with the Federal Endangered Species Act, you must implement all of the mitigating measures identified in the enclosed National Marine Fisheries Service letter of concurrence, Reference #2012/00150, dated October 25, 2012, including those ascribed to the Corps therein (enclosure 5). If you are unable to implement any of these measures, you must immediately notify the Corps and the National Marine Fisheries Service so we may consult as appropriate, prior to initiating the work, in accordance with federal law.

5. If any of the above conditions are violated or unauthorized activities occur, you shall stop work immediately and notify this office. You shall provide us with a detailed description of the unauthorized activity(s), photo documentation, and any measures taken to remedy the violation.

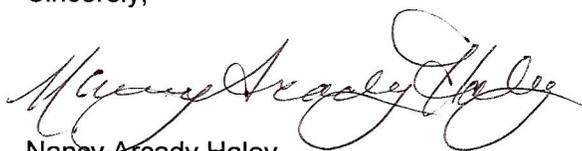
You must sign the enclosed Compliance Certification and return it to this office within 30 days after completion of the authorized work.

This verification is valid until March 18, 2017, when the existing NWP's are scheduled to be modified, reissued, or revoked. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant NWP is modified, reissued, or revoked, you will have twelve (12) months from the date of the modification, reissuance, or revocation of the NWP to complete the activity under the present terms and conditions. Failure to comply with the General and Regional Conditions of this NWP, or the project-specific Special Conditions of this authorization, may result in the suspension or revocation of your authorization.

We would appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey*.

Please refer to identification number SPK-2013-00225 in any correspondence concerning this project. If you have any questions, please contact Mr. Peck Ha at our California North Branch Office, Regulatory Division, Sacramento District, U.S. Army Corps of Engineers, 1325 J Street, Room 1350, Sacramento, California 95814-2922, by email at Peck.Ha@usace.army.mil, or telephone at 916-557-6617. For more information regarding our program, please visit our website at www.spk.usace.army.mil/Missions/Regulatory.aspx.

Sincerely,



Nancy Arcady Haley
Chief, California North Branch
Regulatory Division

Enclosures

cc: (w/o encls)

Mr. Elizabeth Lee, California Regional Water Quality Control Board, EMLee@waterboards.ca.gov

Mr. Paul Jones, U.S. Environmental Protection Agency, Region IX, Jones.Paul@epa.gov

Ms. Tina Bartlett, California Department of Fish and Game, TinaBartlett@wildlife.ca.gov

Mr. Ryan Olah, U.S. Fish and Wildlife Service, ryan_olah@fws.gov

COMPLIANCE CERTIFICATION

Permit File Name: SR65 Dry Creek Bridge Scour Project

Permit File Number: SPK-2013-00225

Nationwide Permit Number: 14 – Linear Transportation Projects

Permittee: Mr. John Holder
California Department of Transportation
703 B Street/P.O. Box 911
Marysville, California 95901

County: Yuba

Date of Verification: March 4, 2014

Within 30 days after completion of the activity authorized by this permit, sign this certification and return it to the following address:

U.S. Army Corps of Engineers
Sacramento District
1325 J Street, Room 1350201300
Sacramento, California 95814-2922
DLL-CESPK-RD-Compliance@usace.army.mil

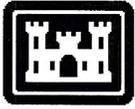
Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with the terms and conditions of the permit your authorization may be suspended, modified, or revoked. If you have any questions about this certification, please contact the Corps of Engineers.

* * * * *

I hereby certify that the work authorized by the above-referenced permit, including all the required mitigation, was completed in accordance with the terms and conditions of the permit verification.

Signature of Permittee

Date



U S Army Corps of
Engineers
Sacramento District

Nationwide Permit Summary

33 CFR Part 330; Issuance of Nationwide
Permits – March 19, 2012

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).

A. Regional Conditions

1. Regional Conditions for California, excluding the Tahoe Basin

http://www.spk.usace.army.mil/Portals/12/documents/regulatory/nwp/2012_nwps/2012-NWP-RC-CA.pdf

2. Regional Conditions for Nevada, including the Tahoe Basin

http://www.spk.usace.army.mil/Portals/12/documents/regulatory/nwp/2012_nwps/2012-NWP-RC-NV.pdf

3. Regional Conditions for Utah

http://www.spk.usace.army.mil/Portals/12/documents/regulatory/nwp/2012_nwps/2012-NWP-RC-UT.pdf

4. Regional Conditions for Colorado.

http://www.spk.usace.army.mil/Portals/12/documents/regulatory/nwp/2012_nwps/2012-NWP-RC-CO.pdf

B. 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,

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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 NWP 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 NWPs.

(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 NHPs 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 NHPs 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 NHPs 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: he 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 NWPs 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 email, 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.

C. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. For a linear project, this determination will include an evaluation of the individual crossings to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to intermittent or ephemeral streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51 or 52, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in minimal adverse effects. When making minimal effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

2. If the proposed activity requires a PCN and will result in a loss of greater than 1/10- acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining

whether the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences 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. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

3. If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (a) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (c) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period, with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

D. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWP's do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWP's do not grant any property rights or exclusive privileges.
4. NWP's do not authorize any injury to the property or rights of others.
5. NWP's do not authorize interference with any existing or proposed Federal project.

E. Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term "discharge" means any discharge of dredged or fill material.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in

which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWP, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of “open waters” include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line, which is defined at 33 CFR 328.3(d).

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWP, a waterbody is a jurisdictional water of the United States. If a jurisdictional wetland is adjacent – meaning bordering, contiguous, or neighboring – to a waterbody determined to be a water of the United States under 33 CFR 328.3(a)(1)-(6), that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of “waterbodies” include streams, rivers, lakes, ponds, and wetlands.

Final Sacramento District Nationwide Permit
Regional Conditions for California, excluding the Lake Tahoe Basin
(Effective March 19, 2012 until March 18, 2017)

1.* When pre-construction notification (PCN) is required, the permittee shall notify the U.S. Army Corps of Engineers, Sacramento 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 project 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. For all Nationwide Permits (NWP), the permittee shall submit a PCN in accordance with General Condition 31 and Regional Condition 1, in the following circumstances:

a. For all activities that would result in the discharge of fill material into any vernal pool;

b. For any activity in the Primary and Secondary Zones of the Legal Delta, the Sacramento River, the San Joaquin River, and the immediate tributaries of these waters;

c. For all crossings of perennial waters and intermittent waters;

d. For all activities proposed within 100 feet of the point of discharge of a known natural spring source, which is any location where ground water emanates from a point in the ground excluding seeps or other discharges which lack a defined channel; and

e.* 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 FR 11092)), 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. The permittee shall record the NWP verification with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to or interest in real property for areas (1) designated to be preserved as part of compensatory mitigation for authorized impacts, including any associated covenants or restrictions, or (2) where boat ramps or docks, marinas, piers, and permanently moored vessels will be constructed or placed in or adjacent to navigable waters. The recordation shall also include a map showing the surveyed location of the preserved area or authorized structure.

* Regional Condition developed jointly between Sacramento District, Los Angeles District, and San Francisco District.

4. For all waters of the U.S. proposed to be avoided on a site, unless determined to be impracticable by the Corps, the permittee shall:

a. Establish and maintain, in perpetuity, a preserve containing all avoided waters of the U.S. to ensure that the functions of the aquatic environment are protected;

b. Place all avoided waters of the U.S. and any upland buffers into a separate parcel prior to discharging dredge or fill material into waters of the U.S., and

c. Establish permanent legal protection for all preserve parcels, following Corps approval of the legal instrument;

If the Corps determines that it is impracticable to require permanent preservation of the avoided waters, additional mitigation may be required in order to compensate for indirect impacts to the waters of the U.S.

5. For all temporary fills, the PCN shall include a description of the proposed temporary fill, including the type and amount of material to be placed, the area proposed to be impacted, and the proposed plan for restoration of the temporary fill area to pre-project contours and conditions, including a plan for the re-vegetation of the temporary fill area, if necessary. In addition, the PCN shall include the reason(s) why avoidance of temporary impacts is not practicable.

In addition, for all activities resulting in temporary fill within waters of the U.S., the permittee shall:

a. Utilize material consisting of clean and washed gravel. For temporary fills within waters of the U.S. supporting anadromous fisheries, spawning quality gravel shall be used, where practicable, as determined by the Corps, after consultation with appropriate Federal and state fish and wildlife agencies;

b. Place a horizontal marker (e.g. fabric, certified weed free straw, etc.) to delineate the existing ground elevation of the waters temporarily filled during construction; and

c. Remove all temporary fill within 30 days following completion of construction activities.

6. In addition to the requirements of General Condition 2, unless determined to be impracticable by the Corps, the following criteria shall apply to all road crossings:

a.* 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;

b. Road crossings shall be designed to ensure that no more than minor impacts would occur to fish and wildlife passage or expected high flows, following the criteria listed in Regional Condition 6(a). Culverted crossings that do not utilize a bottomless arch culvert with a natural stream bed may be authorized for waters that do not contain suitable habitat for Federally listed fish species, if it can be demonstrated and is specifically determined by the Corps, that such crossing will result in no more than minor impacts to fish and wildlife passage or expected high flows;

c. No construction activities shall occur within standing or flowing waters. For ephemeral or intermittent streams, this may be accomplished through construction during the dry season. In perennial streams, this may be accomplished through dewatering of the work area. Any proposed dewatering plans must be approved, in writing, by the Corps prior to commencement of construction activities; and

* Regional Condition developed jointly between Sacramento District, Los Angeles District, and San Francisco District.

d. All bank stabilization activities associated with a road crossing shall comply with Regional Condition 19.

In no case shall stream crossings result in a reduction in the pre-construction bankfull width or depth of perennial streams or negatively alter the flood control capacity of perennial streams.

7.* 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, pursuant to 50 CFR Part 402.07, Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act (EFH), pursuant to 50 CFR 600.920(b) and/or Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, pursuant to 36 CFR 800.2(a)(2), the lead Federal agency shall provide all relevant documentation to the 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.

8. For all NWP's which require a PCN, the permittee shall submit the following additional information with the compliance certificate required under General Condition 30:

a. As-built drawings of the work conducted on the project site and any on-site and/or off-site compensatory mitigation, preservation, and/or avoidance area(s). The as-builts shall include a plan-view drawing of the location of the authorized work footprint (as shown on the permit drawings), with an overlay of the work as constructed in the same scale as the permit drawings. The drawing shall show all areas of ground disturbance, wetland impacts, structures, and the boundaries of any on-site and/or off-site mitigation or avoidance areas. Please note that any deviations from the work as authorized, which result in additional impacts to waters of the U.S., must be coordinated with the appropriate Corps office prior to impacts; and

b. Numbered and dated post-construction color photographs of the work conducted within a representative sample of the impacted waters of the U.S., and within all avoided waters of the U.S. on and immediately adjacent to the proposed project area. The compass angle and position of all photographs shall be similar to the pre-construction color photographs required in Regional Condition 1(c) and shall be identified on the plan-view drawing(s) required in subpart a of this Regional Condition.

9. For all activities requiring permittee responsible mitigation, the permittee shall develop and submit to the Corps for review and approval, a final comprehensive mitigation and monitoring plan for all permittee responsible mitigation prior to commencement of construction activities within waters of the U.S. The plan shall include the mitigation location and design drawings, vegetation plans, including target species to be planted, and final success criteria, presented in the format of the *Sacramento District's Habitat Mitigation and Monitoring Proposal Guidelines*, dated December 30, 2004, and in compliance with the requirements of 33 CFR 332.

10.* 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.

11. The permittee is responsible for all authorized work and ensuring that all contractors and workers are made aware and adhere to the terms and conditions of the permit authorization. The permittee shall ensure

* Regional Condition developed jointly between Sacramento District, Los Angeles District, and San Francisco District.

that a copy of the permit authorization and associated drawings are available and visible for quick reference at the site until all construction activities are completed.

12. The permittee shall clearly identify the limits of disturbance in the field with highly visible markers (e.g. construction fencing, flagging, silt barriers, etc.) prior to commencement of construction activities within waters of the U.S. The permittee shall maintain such identification properly until construction is completed and the soils have been stabilized. The permittee is prohibited from any activity (e.g. equipment usage or materials storage) that impacts waters of the U.S. outside of the permit limits (as shown on the permit drawings).

13. For all activities in which a PCN is required, the permittee shall notify the appropriate district office of the start date for the authorized work within 10 days prior to initiation of construction activities.

14. The permittee shall allow Corps representatives to inspect the authorized activity and any mitigation areas at any time deemed necessary to determine compliance with the terms and conditions of the NWP verification. The permittee will be notified in advance of an inspection.

15. For all activities located in the Mather Core Recovery Area in Sacramento County, as identified in the U.S. Fish and Wildlife Service's *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* dated December 15, 2005, NWPs 14, 18, 23, 29, 39, 40, 42, 43 and 44 are revoked from use in vernal pools that may contain habitat for Federally-listed threatened and/or endangered vernal pool species.

16. For activities located in the Primary or Secondary Zone of the Legal Delta, NWPs 29 and 39 are revoked.

17. For all activities within the Secondary Zone of the Legal Delta, the permittee shall conduct compensatory mitigation for unavoidable impacts within the Secondary Zone of the Legal Delta.

18. For NWP 12: Permittees shall ensure the construction of utility lines does not result in the draining of any water of the U.S., including wetlands. This may be accomplished through the use of clay blocks, bentonite, or other suitable material (as approved by the Corps) to seal the trench. For utility line trenches, during construction, the permittee shall remove and stockpile, separately, the top 6 – 12 inches of topsoil. Following installation of the utility line(s), the permittee shall replace the stockpiled topsoil on top and seed the area with native vegetation. The permittee shall submit a PCN for utility line activities in the following circumstances:

a. The utility line crossing would result in a discharge of dredged and/or fill material into perennial waters, intermittent waters, wetlands, mudflats, vegetated shallows, riffle and pool complexes, sanctuaries and refuges or coral reefs;

b. The utility line activity would result in a discharge of dredged and/or fill material into greater than 100 linear feet of ephemeral waters of the U.S.;

c. The utility line installation would include the construction of a temporary or permanent access road, substation or foundation within waters of the U.S.; or

d. The proposed activity would not involve the restoration of all utility line trenches to pre-project contours and conditions within 30 days following completion of construction activities.

19. For NWP 13 and 14: All bank stabilization activities shall involve either the sole use of native vegetation or other bioengineered design techniques (e.g. willow plantings, root wads, large woody debris, etc.), or a combination of hard-armoring (e.g. rip-rap) and native vegetation or bioengineered design

techniques, unless specifically determined to be impracticable by the Corps. The permittee shall submit a PCN for any bank stabilization activity that involves hard-armoring or the placement of any non-vegetated or non-bioengineered technique below the ordinary high water mark or, if tidal waters, the high tide line of waters of the U.S. The request to utilize non-vegetated techniques must include information on why the sole use of vegetated techniques is not practicable.

20. For NWP 23: The permittee shall submit a PCN for all activities proposed for this NWP, in accordance with General Condition 31 and Regional Condition 1. The PCN shall include a copy of the signed Categorical Exclusion document and final agency determinations regarding compliance with ESA, EFH and NHPA, in accordance with General Conditions 18 and 20 and Regional Condition 7.

21. For NWP 27: The permittee shall submit a PCN for aquatic habitat restoration, establishment, and enhancement activities in the following circumstances:

a. The restoration, establishment or enhancement activity would result in a discharge of dredged and/or fill material into perennial waters, intermittent waters, wetlands, mudflats, vegetated shallows, riffle and pool complexes, sanctuaries and refuges or coral reefs; or

b. The restoration, establishment or enhancement activity would result in a discharge of dredged and/or fill material into greater than 100 linear feet of ephemeral waters of the U.S.

22. For NWPs 29 and 39: The channelization or relocation of intermittent or perennial drainages is not authorized, except when, as determined by the Corps, the relocation would result in a net increase in functions of the aquatic ecosystem within the watershed.

23.* 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 and Regional Condition 1;

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.

24. For NWPs 29, 39, 40, 42, and 43: The permittee shall establish and maintain upland vegetated buffers in perpetuity, unless specifically determined to be impracticable by the Corps, next to all preserved open waters, streams and wetlands including created, restored, enhanced or preserved waters of the U.S., consistent with General Condition 23(f). Except in unusual circumstances, as determined by the Corps, vegetated buffers shall be at least 50 feet in width.

* Regional Condition developed jointly between Sacramento District, Los Angeles District, and San Francisco District.

25. For NWP 46: The discharge shall not cause the loss of greater than 0.5 acres of waters of the United States or the loss of more than 300 linear feet of ditch, unless specifically waived in writing by the Corps.

26. All NWPs except 3, 6, 20, 27, 32, and 38 are revoked for activities in histosols, fens, bogs and peatlands and in wetlands contiguous with fens. Fens are defined as slope wetlands with a histic epipedon that are hydrologically supported by groundwater. Fens are normally saturated throughout the growing season, although they may not be during drought conditions. For NWPs 3, 6, 20, 27, 32, and 38, the permittee shall submit a PCN to the Corps in accordance with General Condition 31 and Regional Condition 1. This condition does not apply to NWPs 1, 2, 8, 9, 10, 11, 24, 28, 35 or 36, as these NWPs either apply to Section 10 only activities or do not authorize impacts to special aquatic sites.



Permanent Impacts=0.24 acres
Latitude: 39.02121°
Longitude: -121.4429°

1 inch = 48 feet

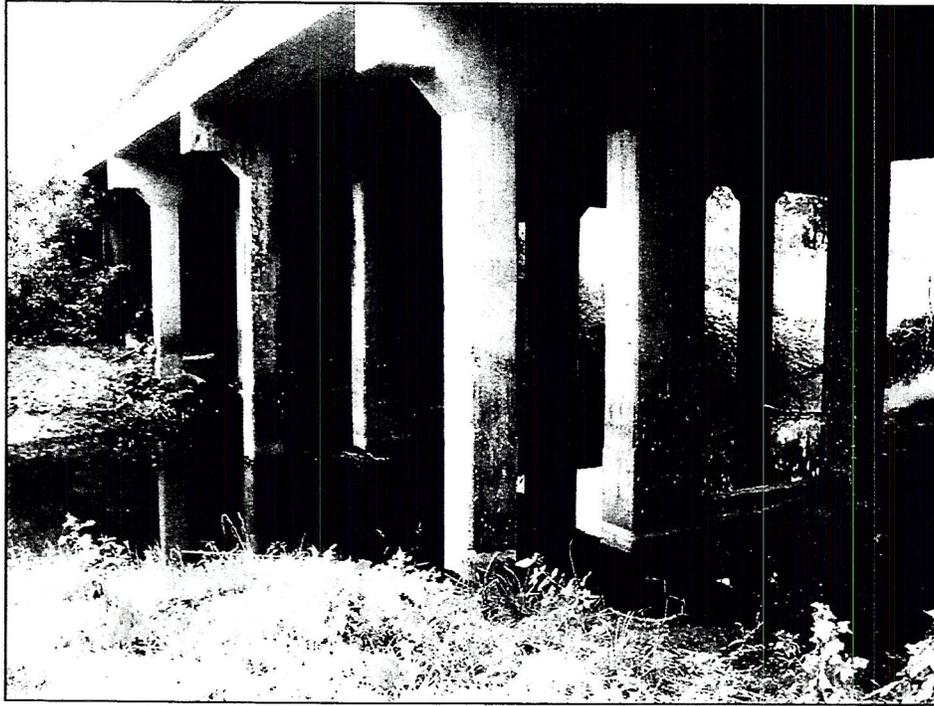


Legend

-  Environmental Study Limits
-  OHWM
-  RSP below OHWM (Permanent Impacts)
-  RSP Limits

YUB-65 PM 2.21
Dry Creek Bridge Scour Mitigation Project
EA: 03-0F270/EFIS: 0300000076
Impact to Other Waters of the U.S.
September 3, 2013
Allison Kunz, Caltrans
Date of Aerial: June 22, 2002

Restoration Plan



Dry Creek Bridge Scour Mitigation Project

State Route 65 in Yuba County
Post Mile 2.21
EA 03-0F2700/EFIS 0300000076



California Department of Transportation
Prepared by North Region Office of Environmental Management
September 2013

Allison Kunz

Prepared by: Allison Kunz
Associate Environmental Planner/NS

C. Brown for

Prepared by: Monica Finn
Restoration Specialist

Carolyn Brown

Approved by: Carolyn Brown
Stewardship Branch Chief

Applicant and Contacts

This restoration plan has been prepared to satisfy requirements of the California Department of Fish and Wildlife (CDFW) 1602 Streambed Alteration Agreement for impacts to riparian vegetation along Dry Creek, U.S. Army Corp of Engineers (USACE) Nationwide Permit conditions, and Central Valley Regional Water Quality Control Board (CVRWQCB) Section 401 Certification conditions. The California Department of Transportation (Caltrans) is the applicant, the party having financial responsibility for the attainment of success criteria of the proposed restoration plan; the current and long-term owner of the proposed restoration site; and is the party responsible for long-term maintenance of the project and restoration site. The Caltrans Project Manager for the proposed project is John Holder, 703 B Street, Marysville CA 95901, (530) 741-5448.

The designated contact person for this restoration plan is Caltrans Biologist Allison Kunz, 703 B Street, Marysville CA 95901, (530) 741-4103.

This restoration plan was prepared by Biologist Allison Kunz, (530) 741-4103, and Restoration Specialist, Monica Finn, (916) 799-6285. The goal of this restoration effort is to restore and revegetate jurisdictional areas impacted by construction activities and to replace 3 trees at a 3:1 ratio that were removed due to construction. The plan outlines strategies for revegetation, including commitments for success criteria, monitoring, remedial measures and reporting.

Location and Description of Proposed Activity

The project is located on State Route (SR) 65 approximately 1 mile north of Wheatland in Yuba County, California, at post mile (PM) 2.21. The project is located on the Wheatland USGS 7.5-minute quadrangle (Johnson Rancho Land Grant). Caltrans is proposing to perform scour mitigation on Dry Creek Bridge (Br. # 16-0002) by placing rock slope protection (RSP) along the full length and width of the structure.

The project area is composed of the creek area, and the adjacent surrounding landscape which is predominantly agriculture with ruderal vegetation closer to the creek. Land use surrounding the environmental study limit (ESL) consists of agricultural areas including walnut orchards, rice fields, and cattle grazing. In addition, agricultural equipment is transported under the bridge. The topography of the ESL is relatively flat. The creek is bordered on the north and south sides by levees. Figure 1 shows the planting area of the project. The vegetation in the project area is dominated by non-natives. A widely spaced tree canopy is dominated by recently established eucalyptus with a few native trees (willows and ash).

The plants present at the Dry Creek Bridge location are dominated by non-native species and consisted of: annual agoseris (*Agoseris heterophylla*), scarlett pimpernel (*Anagallis arvensis*), wild oat (*Avena fatua*), black mustard (*Brassica nigra*), Italian thistle (*Carduus pycnocephala*), chickory (*Cichorium intybus*), pecan (*Carya illoensis*), Bermuda grass (*Cynodon dactylon*), nutsedge (*Cyperus eragrostis*), eucalyptus (*Eucalyptus* ssp.), cutleaf geranium (*Geranium dissectum*), farmers foxtail (*Hordeum murinum*), wild rye (*Lolium multiflorum*), white sweet clover (*Melilotus alba*), harding grass (*Phalaris aquatica*), English plantain (*Plantago lanceolata*), rabbitfoot grass (*Polypogon monspeliensis*), wild radish (*Raphanus*

raphanistrum), Himalayan blackberry (*Rubus armeniacus*), curly dock (*Rumex crispus*), moth mullen (*Verbascum blattaria*), and purple vervain (*Verbena bonariensis*). Native plants consisted of: mugwort (*Artemisia douglasiana*), morning glory (*Calystegia malacophylla*), Oregon ash (*Fraxinus latifolia*), bedstraw (*Galium aparine*), walnut (*Juglans californica*), soft rush (*Juncus effusus*), seep monkey flower (*Mimulus guttatus*), arroyo willow (*Salix lasiolepis*), bull rush (*Scirpus* ssp.), and sticky sand spurry (*Spergularia macrotheca*).

Three trees (1 Oregon ash and 2 arroyo willow) will be removed for the construction of this project.

Table 1: Other Waters of the U.S. Impacts

Impact Type	Acreage	Permanent or Temporary
Other Waters	0.24	Permanent
Other Waters	0.03	Temporary

Table 2: Site Characteristics/Impacts

Resource ID	Identified Acreage	Vegetation	Revegetation Action
Other Waters-Dry Creek	0.24 acres-Perm	Riparian	Mitigation Bank
Other Waters-Dry Creek	0.03 acres-Temp	Riparian	Replanting with native shrubs/trees at a 3:1 ratio

MEASURES PROPOSED AS PART OF CONSTRUCTION: AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

A. Establish ESAs

Additional direct and indirect impacts to sensitive biological resources, including SEZ resources, throughout the project area will be avoided or minimized by designating these features outside of the construction impact area as “Environmentally Sensitive Areas” (ESAs) on project plans and in project specifications. ESA information will be shown on contract plans and discussed in the Special Provisions. ESA provisions may include, but are not necessarily limited to, the use of temporary orange fencing to identify the proposed limit of work in areas adjacent sensitive resources or to locate and exclude sensitive resources from potential construction impacts. Contractor encroachment into ESAs will be prohibited (including the staging/operation of heavy equipment or casting of excavated materials). ESA provisions will be implemented as a first order of work and remain in place until all construction activities are complete.

B. Minimize Disturbance to Creek Channel and Adjacent Areas and Restrict Timing of Instream Activities

All stream and riparian habitat areas outside of the construction limits will be designated as ESAs as detailed above.

Disturbed areas within the construction limits will be graded to minimize surface erosion and siltation into streambeds. The streambed and bank will be re-contoured to as close to pre-project condition as possible. Stream-banks and adjacent areas that are disturbed by construction activities will be stabilized as soon as feasible (and no later than October 15th of each construction season) to avoid erosion during subsequent storms and runoff. Bare areas will be covered with mulch and re-vegetated with appropriate native species to pre-project conditions.

C. Construction Site Best Management Practices

Measures will be employed to prevent any construction material or debris from entering surface waters or their channels. BMPs for erosion control will be implemented and in place prior to, during, and after construction in order to ensure that no silt or sediment enters surface waters.

Caltrans' Standard Specifications require the Contractor to submit a Water Pollution Control Plan. This plan must meet the standards and objectives to minimize water pollution impacts set forth in section 13-1.01/13-2.01 of Caltrans' Standard Specifications. The Water Pollution Control Plan must also be in compliance with the goals and restrictions identified in the Central Valley Regional Water Quality Control Board's Basin Plan. Any additional measures included in the 401 certification, 1602 Agreement, or 404 permit will be complied with. These standards/objectives, at times referred to as "Best Management Practices" (BMPs), include but are not limited to:

1. Oily or greasy substances originating from the Contractor's operations shall not be allowed to enter or be placed where they will later enter a live or dry stream, pond, or wetland.
2. Asphalt concrete shall not be allowed to enter a live or dry stream, pond, or wetland.
3. Permanent erosion control: All areas disturbed during construction shall receive permanent erosion control seeding measures. All finished slopes and contour graded areas shall receive surface protection with a permanent seed mix composed of native grasses and forbs indigenous to the area.
4. All off-road construction equipment will be cleaned of potential noxious weed sources (mud and vegetation) before entry into the project area, and after entering a potentially infested area before moving onto another area, to help ensure noxious weeds are not introduced into the project area. The contractor shall employ whatever cleaning methods (typically with the use of a high-pressure water hose) are necessary to ensure that equipment is free of noxious weeds. Equipment shall be considered free of soil, seeds, and other such debris when a visual inspection does not disclose such material.

MEASURES PROPOSED AT THE COMPLETION OF THE CONSTRUCTION PROJECT

Channel Restoration/Revegetation

Caltrans is proposing to restore and revegetate impact areas at the project. Once construction is complete, a final site review will be performed by the District Biologist/Restoration Specialist to ensure channel topography is restored and appropriate for seeding/planting. All disturbed areas will receive permanent erosion composed of native grasses and forbs.

Planting of native shrubs and trees will be conducted using the combination of riparian species currently present in areas upstream and downstream of the work. The general planting strategy will be to plant arroyo willows and Oregon ash on the south side of the bridge and in line with Pier 2 of the bridge. Planting will occur in areas downstream that were disturbed by construction activities, or that lack tree canopy. No planting will occur in areas of RSP.

Implementation Schedule

Permanent erosion control seeding will be performed at the completion of construction. Restoration planting will be conducted in the fall following the completion of construction activities, which allows the site to go through a winter and spring growing season, allowing for natural regeneration to occur, enabling us to see water flow patterns (that then direct the planting distribution of these species) and allows us to see and address any problems resulting from winter flows. Revegetation work will be implemented using the California Conservation Corps (CCC), with oversight provided by the Caltrans Restoration Specialist and Project Biologist.

Plant Material

All seed or container plants will be generated from materials collected from the vicinity of the project or of similar elevation and habitat characteristics. Willow cuttings will be obtained from the vicinity of the project or from along the existing Caltrans right of way.

Watering/Irrigation Plan

The watering schedule will depend on plant types (cuttings or containers) and the timing of planting. In general, plants will be watered in at planting and will receive supplemental watering by hand and then watered once every 2 to 3 weeks over the period of June 1 to October 1. The watering schedule will be determined based on natural precipitation, temperature and site monitoring in an effort to determine actual needs. The goal will be to provide water necessary to successfully establish deep rooted plants, that are quickly able to survive on their own, rather than surface rooted plants that rely on regular watering. Watering will be performed by the California Conservation Corp, at the direction of the Restoration Specialist.

Maintenance Activities and Schedules

Caltrans is proposing to provide maintenance activities at planted areas for five years. Maintenance funding will be available over the five year CCC contract to address needed measures or problems that arise. Potential maintenance will include such activities as reseeding, replacement plantings, retreating areas to improve plant cover, or weeding. Site inspections are proposed after planting and then over the following five growing seasons (see monitoring below). These site reviews will be used to identify the need for specific maintenance actions.

Monitoring Methods and Schedule

The planted areas will be visually inspected by the Project Biologist/Restoration Specialist at least 2 times over the first fall after planting and 3 times over the first summer to verify plant establishment, growth, watering or maintenance needs or to ensure no problems have occurred. If no problems results, 1 inspection per year over the second through fifth year will be performed to ensure success. If problems are identified, additional inspections will be added to address issues and ensure remediation. Results will be documented on aerials or project plans. Permanent photo points will be set up to document the mitigation effort.

Monitoring will be performed once each year between May 1 and July 1, for a period of five years by the Project Biologist, or Restoration Specialist. Qualitative monitoring will be performed with survival counts.

Annual Reports

Results from monitoring will be documented and forwarded to the CDFW, USACE, and CVRWQCB annually or as required by permits. The first monitoring report will be due one year after the completion of the mitigation implementation. The report will assess progress to date and the attainment of yearly performance criteria and progress towards final success criteria.

Performance Criteria

Success will be determined by having adequate plant survival, that with maturity will be replaced similar vegetation to what was removed by construction.

First and second year success criteria will be achieved if the following conditions are met:

1. A minimum of 12 riparian shrub and tree plantings year one
2. Water flow patterns have established and no erosion problems are identified.

Third through five-year success criteria will be met if:

1. Stable plant establishment is documented each year 3-5, with a minimum of 9 riparian shrub and tree plantings.
2. Continuing annual increases in plant cover are documented with photographs.

Contingency Measures

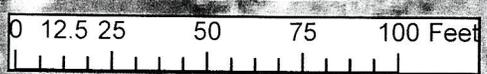
If a performance criterion is not met for all or any portion of the mitigation project in any year, additional effort will be implemented to meet the criterion stated above. The reason for not meeting the criterion will be evaluated and corrected. If significant measures are needed, the planting strategy will be re-evaluated, including looking at soil conditions, hydrology, site preparation, planting techniques and materials. Caltrans will also coordinate with the permitting agencies to determine appropriate remedial actions and obtain approval. If significant remediation measures are needed, the maintenance and monitoring obligations will continue until the California Department of Fish and Wildlife, U.S. Army Corp of Engineers, and Central Valley Regional Water Quality Control Board gives the final project confirmation.

Figure 1: Project Location Map



Permanent Impacts=0.24 acres
Latitude: 39.02121°
Longitude: -121.4429°

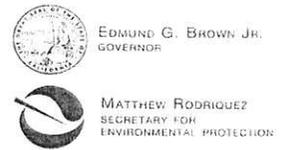
1 inch = 48 feet



Legend

- ESL
- Potential Planting Area
- OHWM
-  RSP below OHWM (Permanent Impacts)
-  RSP Limits

YUB-65 PM 2.21
Dry Creek Bridge Scour Mitigation Project
EA: 03-0F270/EFIS: 0300000076
Restoration Plan
September 3, 2013
Allison Kunz, Caltrans
Date of Aerial: June 22, 2002



EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

1 July 2014

John Holder
California Department of Transportation
703 B Street
Marysville, CA 95901

CERTIFIED MAIL
7013 2250 0000 3465 2312

CLEAN WATER ACT §401 TECHNICALLY CONDITIONED WATER QUALITY CERTIFICATION; DEPARTMENT OF TRANSPORTATION, DRY CREEK BRIDGE SCOUR MITIGATION PROJECT (WDID#5A58CR00102), YUBA COUNTY

This Order responds to the 10 September 2013 application submitted by California Department of Transportation (Applicant) for the Water Quality Certification of a scour maintenance project permanently impacting 0.24 acre/68 linear feet and temporarily impacting 0.03 acre/8 linear feet of waters of the United States.

This Order serves as certification of the United States Army Corps of Engineers' Nationwide Permit# 14 (SPK# 2013-00225) under § 401 of the Clean Water Act, and a Waste Discharge Requirement under the Porter-Cologne Water Quality Control Act and State Water Board Order 2003-0017-DWQ.

WATER QUALITY CERTIFICATION STANDARD CONDITIONS:

1. This Order serves as a Water Quality Certification (Certification) action that is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to § 13330 of the California Water Code and § 3867 of the California Code of Regulations.
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 § 3855(b) of the California Code of Regulations, and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
3. The validity of any non-denial Certification action shall be conditioned upon total payment of the full fee required under § 3860(c) of the California Code of Regulations.

4. This Certification is no longer valid if the project (as described) is modified, or coverage under § 404 of the Clean Water Act has expired.
5. All reports, notices, or other documents required by this Certification or requested by the Central Valley Regional Water Quality Control Board (Central Valley Water Board) shall be signed by a person described below or by a duly authorized representative of that person.
 - (a) For a corporation: by a responsible corporate officer such as (1) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function; (2) any other person who performs similar policy or decision-making functions for the corporation; or (3) the manager of one or more manufacturing, production, or operating facilities if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
 - (b) For a partnership or sole proprietorship: by a general partner or the proprietor.
 - (c) For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official.
6. Any person signing a document under Standard Condition number 5 shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

TECHNICAL CERTIFICATION CONDITIONS:

In addition to the above standard conditions, the Applicant shall satisfy the following:

1. The Applicant shall notify the Central Valley Water Board in writing seven (7) days in advance of the start of any work within waters of the United States. The notification shall include the name of the project and the WDID number, and shall be sent to the Central Valley Water Board Contact indicated in this Certification.
2. Except for activities permitted by the United States Army Corps of Engineers under § 404 of the Clean Water Act, soil, silt, or other organic materials shall not be placed where such materials could pass into surface water or surface water drainage courses.
3. The Applicant shall maintain a copy of this Certification and supporting documentation (Project Information Sheet) at the Project site during construction for review by site personnel and agencies. All personnel (employees, contractors, and subcontractors)

performing work on the proposed project shall be adequately informed and trained regarding the conditions of this Certification.

4. The Applicant shall perform surface water sampling:
 - a) when performing any in-water work;
 - b) in the event that project activities result in any materials reaching surface waters; or
 - c) when any activities result in the creation of a visible plume in surface waters.

The monitoring requirements in Table 1 shall be conducted upstream out of the influence of the project, and 300 feet downstream of the work area. The sampling frequency may be modified for certain projects with written approval from Central Valley Water Board staff.

Table 1:

Parameter	Unit	Type of Sample	Minimum Sampling Frequency	Required Analytical Test Method
Turbidity	NTU	Grab ⁽¹⁾	Every 4 hours during in-water work	(2, 4)
Settleable Material	mL/L	Grab ⁽¹⁾	Every 4 hours during in-water work	(2)
Visible construction related pollutants ⁽³⁾	Observations	Visual Inspections	Continuous throughout the construction period	—

⁽¹⁾ Grab samples shall not be collected at the same time each day to get a complete representation of variations in the receiving water.

⁽²⁾ Pollutants shall be analyzed using the analytical methods described in 40 Code of Federal Regulations Part 136; where no methods are specified for a given pollutant, the method shall be approved by Central Valley Water Board staff.

⁽³⁾ Visible construction-related pollutants include oil, grease, foam, fuel, petroleum products, and construction-related, excavated, organic or earthen materials.

⁽⁴⁾ A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring shall be maintained onsite.

Surface water monitoring shall occur at mid-depth. A surface water monitoring report shall be submitted to the Central Valley Water Board Contact indicated in this Certification within two weeks of initiation of sampling and every two weeks thereafter. In reporting the monitoring data, the Applicant shall arrange the data in tabular form so that the sampling locations, date, constituents, and concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the project complies with Certification requirements. The report shall include surface water sampling results, visual observations, and identification of the turbidity increase in the receiving water applicable to the natural turbidity conditions specified in the turbidity criteria below.

If no monitoring is conducted, the Applicant shall submit a written statement to the Central Valley Water Board Contact indicated in the Certification stating, "No monitoring was required." with the Notice of Completion.

5. The Central Valley Water Board adopted a *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition, revised October 2011 (Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Turbidity and settleable matter limits are based on water quality objectives contained in the Basin Plan and are part of this Certification as follows:

- a) Activities shall not cause turbidity increases in surface water to exceed:
 - i. where natural turbidity is less than 1 Nephelometric Turbidity Units (NTUs), controllable factors shall not cause downstream turbidity to exceed 2 NTUs;
 - ii. where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU;
 - iii. where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;
 - iv. where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs; and
 - v. where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

Except that these limits will be eased during in-water working periods to allow a turbidity increase of 15 NTUs over background turbidity. In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected. Averaging periods may only be used with prior approval of the Central Valley Water Board staff.

- b) Activities shall not cause settleable matter to exceed 0.1 mL/L in surface waters.
6. The Applicant shall notify the Central Valley Water Board immediately if the above criteria for turbidity and settleable matter, or other water quality objectives are exceeded.
7. In-water work shall occur during periods of low flow and no precipitation.
8. Refueling of equipment within the floodplain or within 300 feet of the waterway is prohibited. If critical equipment must be refueled within 300 feet of the waterway, spill prevention and countermeasures must be implemented to avoid spills. Refueling areas shall be provided with secondary containment including drip pans and/or placement of absorbent material. No hazardous materials, pesticides, fuels, lubricants, oils, hydraulic fluids, or other construction-related potentially hazardous substances should be stored within a floodplain or within 300 feet of a waterway. The Applicant must perform frequent inspections of construction equipment prior to utilizing it near surface waters to ensure leaks from the equipment are not occurring and are not a threat to water quality.
9. The Applicant shall develop and maintain onsite a project-specific Spill Prevention, Containment and Cleanup Plan outlining the practices to prevent, minimize, and/or clean up potential spills during construction of the project. The Plan must detail the project elements, construction equipment types and location, access and staging and construction sequence.

The Plan must also address spill response and prevention measures for potential spills that may occur within the project site.

10. Silt fencing, straw wattles, or other effective management practices must be used along the construction zone to minimize soil or sediment along the embankments from migrating into the waters of the United States through the entire duration of the project.
11. The use of netting material (e.g., monofilament-based erosion blankets) that could trap aquatic dependent wildlife is prohibited within the project area.
12. All areas disturbed by project activities shall be protected from washout and erosion.
13. All temporarily affected areas shall be restored to pre-construction contours and conditions upon completion of construction activities.
14. All materials resulting from the project shall be removed from the site and disposed of properly.
15. This Certification does not allow permanent water diversion of flow from the receiving water. This Certification is invalid if any water is permanently diverted as a part of the project.
16. If temporary surface water diversions and/or dewatering are anticipated, the Applicant shall develop and maintain on-site a Surface Water Diversion and/or Dewatering Plan(s). The Plan(s) shall include the proposed method and duration of diversion activities. The Surface Water Diversion and/or Dewatering Plan(s) must be consistent with this Certification.
17. The Applicant shall provide a final dewatering plan for the dewatering activities described in the Project Description to the Central Valley Water Board 7 days prior to the start of in-water work.
18. When work in a flowing stream is unavoidable and any dam or other artificial obstruction is being constructed, maintained, or placed in operation, sufficient water shall at all times be allowed to pass downstream, to maintain beneficial uses of waters of the State below the dam. Construction, dewatering, and removal of temporary cofferdams shall not violate Technical Certification Condition 5 of this Certification.
19. Any temporary dam or other artificial obstruction constructed shall only be built from clean materials such as sandbags, gravel bags, water dams, or clean/washed gravel which will cause little or no siltation. Stream flow shall be temporarily diverted using gravity flow through temporary culverts/pipes or pumped around the work site with the use of hoses.
20. The discharge of petroleum products, any construction materials, hazardous materials, pesticides, fuels, lubricants, oils, hydraulic fluids, raw cement, concrete, asphalt, paint, coating material, drilling fluids, or other construction-related potentially hazardous substances to surface water and/or soil is prohibited. In the event of a prohibited discharge, the Applicant shall notify the Central Valley Water Board Contact within 24-hours of the discharge. Activities shall not cause visible oil, grease, or foam in the receiving water.

21. The Applicant shall comply with all California Department of Fish and Wildlife requirements, including but not limited to those requirements described in Lake or Streambed Alteration Agreement No. 1600-2013-0217-R2.
22. The Applicant shall obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Order No. 2009-0009-DWQ for discharges to surface waters comprised of storm water associated with construction activity, including, but not limited to, demolition, clearing, grading, excavation, and other land disturbance activities of one or more acres, or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres.
23. The Conditions in this Certification are based on the information in the attached "Project Information Sheet." If the actual project, as described in the attached Project Information Sheet, is modified or changed, this Certification is no longer valid until amended by the Central Valley Water Board.
24. The Applicant shall implement each of the mitigation measures specified in the approved Mitigated Negative Declaration for the project, as they pertain to biology, hydrology and water quality impacts as required by § 21081.6 of the Public Resource Code and § 15097 of the California Code of Regulations.
25. In the event of any violation or threatened violation of the conditions of this Certification, the violation or threatened violation shall be subject to any remedies, penalties, process, or sanctions as provided for under state and federal law. The applicability of any state law authorizing remedies, penalties, process, or sanctions for the violation or threatened violation constitutes a limitation necessary to ensure compliance with this Certification.
 - (a) If the Applicant or a duly authorized representative of the project fails or refuses to furnish technical or monitoring reports, as required under this Certification, or falsifies any information provided in the monitoring reports, the applicant is subject to civil liability, for each day of violation, and/or criminal liability.
 - (b) In response to a suspected violation of any condition of this Certification, the Central Valley Water Board may require the Applicant to furnish, under penalty of perjury, any technical or monitoring reports the Central Valley Water Board deems appropriate, provided that the burden, including cost of the reports, shall be in reasonable relationship to the need for the reports and the benefits to be obtained from the reports.
 - (c) The Applicant shall allow the staff of the Central Valley Water Board, or an authorized representative(s), upon the presentation of credentials and other documents, as may be required by law, to enter the project premises for inspection, including taking photographs and securing copies of project-related records, for the purpose of assuring compliance with this Certification and determining the ecological success of the project.

26. The Applicant shall provide a Notice of Completion (NOC) no later than 30 days after the project completion. The NOC shall demonstrate that the project has been carried out in accordance with the project description in the Certification and in any approved amendments. The NOC shall include a map of the project location(s), including final boundaries of any on-site restoration area(s), if appropriate, and representative pre and post construction photographs. Each photograph shall include a descriptive title, date taken, photographic site, and photographic orientation.
27. Prior to commencing construction, the Applicant shall provide evidence of all on-site and off-site compensatory mitigation to the Central Valley Water Board. Evidence of mitigation includes, but is not limited to, the purchase of 0.3 acre of seasonal wetland mitigation credits from Beach Lake Mitigation Bank as required by the United States Army Corps of Engineers.

Compensatory mitigation must comply with the effective policy at the time of Certification, which ensures no overall net loss of wetlands for impacts to waters of the State.

Evidence of compliance with compensatory mitigation requirements includes providing a letter from Beach Lake Mitigation Bank. The letter must: (a) be on the Beach Lake Mitigation Bank letterhead; (b) be signed by an authorized representative of Beach Lake Mitigation Bank; (c) indicate the United States Army Corps of Engineers' SPK number; (d) describe the project name and location; and (e) detail the type of compensatory mitigation credits purchased for the project's impacts.

CENTRAL VALLEY WATER BOARD CONTACT:

Trevor Cleak, Environmental Scientist
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-8114
trevor.cleak@waterboards.ca.gov
(916) 464-4684

CALIFORNIA ENVIRONMENTAL QUALITY ACT:

The California Department of Transportation is the Lead Agency responsible for compliance with the California Environmental Quality Act for the Dry Creek Bridge Scour Mitigation Project pursuant to § 21000 et seq. of the Public Resources Code. The California Department of Transportation approved the Mitigated Negative Declaration on 30 November 2012. The California Department of Transportation filed a Notice of Determination with the State Clearinghouse on 6 December 2012 (State Clearinghouse Number 2012072054).

The Central Valley Water Board is a responsible agency for the project. The Central Valley Water Board has determined that the Mitigated Negative Declaration is in accordance with the requirements of the California Environmental Quality Act.

The Central Valley Water Board has reviewed and evaluated the impacts to water quality identified in the Mitigated Negative Declaration. The mitigation measures discussed in the Mitigated Negative Declaration to minimize project impacts to State waters are required by this Certification.

With regard to the remaining impacts identified in the Mitigated Negative Declaration the corresponding mitigation measures proposed are within the responsibility and jurisdiction of other public agencies.

WATER QUALITY CERTIFICATION:

I hereby issue an Order certifying that any discharge from the California Department of Transportation, Dry Creek Bridge Scour Mitigation Project (WDID#5A58CR00102) will comply with the applicable provisions of § 301 ("Effluent Limitations"), § 302 ("Water Quality Related Effluent Limitations"), § 303 ("Water Quality Standards and Implementation Plans"), § 306 ("National Standards of Performance"), and § 307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. This discharge is also regulated under State Water Resources Control Board Water Quality Order No. 2003-0017 DWQ "Statewide General Waste Discharge Requirements For Dredged Or Fill Discharges That Have Received State Water Quality Certification (General WDRs)".

Except insofar as may be modified by any preceding conditions, all Certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in compliance with the conditions of this Certification, the California Department of Transportation's application package, and the attached Project Information Sheet, and (b) compliance with all applicable requirements of the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition, revised October 2011.



for
Pamela C. Creedon
Executive Officer

Enclosure: Project Information Sheet

Attachment: Figure 1 – Project Location Map

cc: Distribution List, page 13

PROJECT INFORMATION SHEET

Application Date: 10 September 2013

Applicant: John Holder
California Department of Transportation
703 B Street
Marysville, CA 95901

Applicant Representative: Alison Kunz
Department of Transportation
703 B Street
Marysville, CA 95901

Project Name: Dry Creek Bridge Scour Mitigation Project

Application Number: WDID#5A58CR00102

Date Application Deemed Complete: 13 June 2014

Type of Project: Scour maintenance project

Approved Months of Project Implementation: 1 July through 31 October

Project Location: Section 32, Township 14 North, Range 5 East, MDB&M.
Latitude: 39°1'21.723"N and Longitude: 121°26'43.6194" W

County: Yuba County

Receiving Water(s) (hydrologic unit): Dry Creek, Sacramento Hydrologic Basin, Valley-American Hydrologic Unit #515.10, Lower American HSA

Water Body Type: Streambed

Designated Beneficial Uses: The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition, revised October 2011 (Basin Plan) has designated beneficial uses for surface and ground waters within the region. Beneficial uses that could be impacted by the project include, but are not limited to: Municipal and Domestic Water Supply (MUN); Agricultural Supply (AGR); Industrial Supply (IND); Hydropower Generation (POW); Groundwater Recharge (GWR); Water Contact Recreation (REC-1); Non-Contact Water Recreation (REC-2); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); Preservation of Biological Habitats of Special Significance (BIOL); Rare, Threatened, or Endangered Species (RARE); Migration of Aquatic Organisms (MIGR); Spawning, Reproduction, and/or Early Development (SPWN); and Wildlife Habitat (WILD). A comprehensive and specific list of the beneficial uses applicable for the project area can be found at http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/index.shtml.

303(d) List of Water Quality Limited Segments: Dry Creek is the receiving water for the Dry Creek Bridge Scour Mitigation Project. Dry Creek is not listed on the 303(d) list; therefore, this project will not impact an impaired water body. The most recent list of approved water quality limited segments is found at:

http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml

Project Description: The Dry Creek Bridge Scour Mitigation Project (Project) consists of placing rock slope protection in Dry Creek to prevent further scour of the Dry Creek Bridge. The project is located on State Route 65, approximately 1 mile northwest of the intersection of McDevitt Drive and State Route 65 in Yuba County.

Approximately 800 cubic yards of rock slope protection will be placed across the entire width of Dry Creek. It is expected that during construction, flows will be within the low flow channel of Dry Creek. Dewatering will be accomplished by diverting flows from the low flow channel to another area within the creekbed. If flows exceed the low flow channel, that area will also be dewatered. After the Project area has been dewatered the rock slope protection will be placed. The Applicant will provide a final dewatering plan to the Central Valley Water Board as conditioned in this Certification.

Other Project activities such as constructing a temporary access road and removing vegetation will not impact waters of the United States. No wet concrete will be placed into waters of the United States.

The project will permanently impact 0.24 acre/68 linear feet and temporarily impact 0.03 acre/8 linear feet of waters of the United States.

Preliminary Water Quality Concerns: Construction activities may impact surface waters with increased turbidity and settleable matter.

Proposed Mitigation to Address Concerns: The Applicant will implement Best Management Practices to control sedimentation and erosion. The Applicant will conduct turbidity and settleable matter testing during in-water work, stopping work if Basin Plan criteria are exceeded or observations indicate an exceedance of a water quality objective. All temporary affected areas will be restored to pre-construction contours and conditions upon completion of construction activities to provide 1:1 mitigation for temporary impacts.

Excavation/Fill Area: Approximately 800 cubic yards of rock slope protection will be placed into 0.24 acre/68 linear feet of waters of the United States.

Dredge Volume: None

California Integrated Water Quality System Impact Data: The Project will permanently impact 0.24 acre/68 linear feet of stream bed from fill activities.

Table 2: Impacts from Fill Activities

Water Feature Type	Permanent			Temporary		
	Acre(s)	Linear Feet	Cubic Yards	Acre(s)	Linear Feet	Cubic Yards
Stream Channel						
Dry Creek	0.24	68	800	0.03	8	-
Open Water Total	0.24	68	800	0.03	8	-
Total Impacts	0.24	68	800	0.03	8	-

Temporary impacts in the table will be from dewatering activities.

United States Army Corps of Engineers File Number: SPK #2013-00225

United States Army Corps of Engineers Permit Type: Nationwide Permit #14

California Department of Fish and Wildlife Lake or Streambed Alteration Agreement:
 1600-2013-0217-R2

Possible Listed Species: Delta smelt and Green Sturgeon

Status of CEQA Compliance: The California Department of Transportation approved the Mitigated Negative Declaration on 30 November 2012. The California Department of Transportation filed a Notice of Determination with the State Clearinghouse on 6 December 2012 (State Clearinghouse Number 2012072054).

The Central Valley Water Board will file a Notice of Determination with the State Clearinghouse as a responsible agency within five (5) days of the date of this Certification.

Compensatory Mitigation: Prior to commencing construction, the Applicant shall provide evidence of all on-site and off-site compensatory mitigation to the Central Valley Water Board. Evidence of mitigation includes, but is not limited to, the purchase of 0.3 acre of seasonal wetland mitigation credits from Beach Lake Mitigation Bank as required by the United States Army Corps of Engineers.

Application Fee Provided: Total fees of \$2,040.00 have been submitted to the Central Valley Water Board as required by § 3833(b)(3)(A) and § 2200(a)(3) of the California Code of Regulations.

DISTRIBUTION LIST

Peck Ha
United States Army Corps of Engineers
Sacramento District Office
Regulatory Division
1325 J Street, Suite 1350
Sacramento, CA 95814-2922

Tina Bartlett
Department of Fish and Wildlife
1701 Nimbus Road
Rancho Cordova, CA 95670

Bill Jennings
CA Sportfishing Protection Alliance
3536 Rainier Avenue
Stockton, CA 95204

Bill Orme (Electronic copy only)
401 Certification and Wetlands Unit Chief
State Water Resources Control Board

Jason A. Brush (Electronic copy only)
Wetlands Office Supervisor (WTR-8)
United States Environmental Protection Agency

Alison Kunz
Department of Transportation
703 B Street
Marysville, CA 95901



State of California – The Natural Resources Agency

DEPARTMENT OF FISH AND WILDLIFE

North Central Region
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670-4599
916-358-2900
www.wildlife.ca.gov

EDMUND G. BROWN, Governor
CHARLTON H. BONHAM, Director



JAN 21 2014

Date

John Holder
California Department of Transportation
703 B Street
Marysville, CA 95901

Subject: Final Streambed Alteration Agreement
Notification No. 1600-2013-0217-R2
State Route 65 Dry Creek Bridge Scour Repair Project

Dear Mr. Holder:

Enclosed is the final Streambed Alteration Agreement (Agreement) for the State Route 65 Dry Creek Bridge Scour Repair Project (Project). Before the Department of Fish and Wildlife (Department) may issue an Agreement, it must comply with the California Environmental Quality Act (CEQA). In this case, the Department, acting as a responsible agency, filed a notice of determination (NOD) on the same date it signed the Agreement. The NOD was based on information contained in the Mitigated Negative Declaration the lead agency prepared for the Project.

Under CEQA, filing a NOD starts a 30-day period within which a party may challenge the filing agency's approval of the project. You may begin your project before the 30-day period expires if you have obtained all necessary local, state, and federal permits or other authorizations. However, if you elect to do so, it will be at your own risk.

If you have any questions regarding this matter, please contact Tim Nosal at (916) 358-2853 or tim.nosal@wildlife.ca.gov.

Sincerely,

Tina Bartlett
Regional Manager

ec: Tim Nosal, Environmental Scientist
Tim.Nosal@wildlife.ca.gov

Conserving California's Wildlife Since 1870

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
NORTH CENTRAL REGION
1701 NIMBUS ROAD, SUITE A
RANCHO CORDOVA, CA 95670



STREAMBED ALTERATION AGREEMENT
NOTIFICATION No. 1600-2013-0217-R2
DRY CREEK

CALTRANS
STATE ROUTE 65 DRY CREEK BRIDGE SCOUR MITIGATION PROJECT

This Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Wildlife (Department) and California Department of Transportation (Caltrans) (Permittee) as represented by John Holder.

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, Permittee notified the Department on September 10, 2013 that Permittee intends to complete the project described herein.

WHEREAS, pursuant to FGC section 1603, the Department has determined that the project could substantially adversely affect existing fish or wildlife resources and has included measures in the Agreement necessary to protect those resources.

WHEREAS, Permittee has reviewed the Agreement and accepts its terms and conditions, including the measures to protect fish and wildlife resources.

NOW THEREFORE, Permittee agrees to complete the project in accordance with the Agreement.

PROJECT LOCATION

The project is located at the State Route 65 bridge over Dry Creek in Yuba County, State of California; Latitude 39.0227 Longitude -121.4454, U.S. Geological Survey (USGS) map Wheatland (Attachment A: Project Maps).

PROJECT DESCRIPTION

This project proposes to perform scour mitigation on Dry Creek Bridge (Br. # 16-0002) on State Route 65 in Yuba County near the city of Wheatland at post mile 2.21 by placing rock slope protection (RSP) along the full length and width of the structure. The project will involve bridge work, construction of access roads, an equipment staging area, work within the 100-year floodplain, temporary construction easement from the railroad, temporary construction easements, ground disturbance, vegetation removal, seasonal construction windows, work within the stream channel (including temporary stream crossings and dewatering) and placement of RSP. The existing stream channel and overflow area will be disturbed to place the RSP and repair the cracks and spalls in the bridge columns. The creek will be temporarily diverted through another span in order to perform work in a dewatered channel.

A wildlife-friendly path will be created on the north side of the channel. The path will be in 8 feet in width between Piers 7 and 8 (Span 7). The voids between the RSP will be filled with smooth, round river rock, free of debris and washed clean to be free of dirt (screen size of 3 inches or less). The 8-foot path will be covered with native material (e.g. soil excavated from the location).

All figures and minimization measures included in the Notification of Streambed Alteration No. 1600-2013-0217-R2 shall be implemented.

PROJECT IMPACTS

Existing fish or wildlife resources the project could substantially adversely affect include: riparian vegetation, nesting raptors and migratory birds, amphibians, reptiles, other aquatic and terrestrial plant and wildlife species, cold water fish species, and warm water fish species.

The adverse effects the project could have on the fish or wildlife resources identified above include: temporary diversion of flow water from, or around, activity site; short-term increased turbidity; increased sedimentation from adjacent construction; short-term release of sediment (e.g. incidental from construction); loss or decline of riparian habitat; disturbance from project activity; direct take of terrestrial species and aquatic species; loss of natural bed or bank; soil compaction or other disturbance; disruption to nesting birds and other wildlife; loss or impediment of terrestrial animal species travel routes due to temporary structures such as survey tape, sandbags, erosion protection materials etc.; dewatering; flow deflection; change in fluvial geomorphology; and direct (seasonal) loss of resources for aquatic organisms.

MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES

1. Administrative Measures

Permittee shall meet each administrative requirement described below.

- 1.1 Documentation at Project Site. Permittee shall make the Agreement, any extensions and amendments to the Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to the Department personnel, or personnel from another state, federal, or local agency upon request.
- 1.2 Providing Agreement to Persons at Project Site. Permittee shall provide copies of the Agreement and any extensions and amendments to the Agreement to all persons who will be working on the project at the project site on behalf of Permittee, including but not limited to contractors, subcontractors, inspectors, and monitors.
- 1.3 Notification of Conflicting Provisions. Permittee shall notify the Department if Permittee determines or learns that a provision in the Agreement might conflict with a provision imposed on the project by another local, state, or federal agency. In that event, the Department shall contact Permittee to resolve any conflict.
- 1.4 Project Site Entry. Permittee agrees that Department personnel may enter the project site at any time to verify compliance with the Agreement.
- 1.5 Does Not Authorize "Take." This Agreement does not authorize "take" of any listed species. Take is defined as hunt, pursue, catch, capture or kill or attempt to hunt, pursue, catch, capture, or kill. If there is potential for take of any listed species to occur, the Permittee shall consult with the Department as outlined in FGC Section 2081 and shall obtain the required state and federal threatened and endangered species permits.
- 1.6 Notification of Project Modification. Permittee agrees to notify the Department of any modifications made to the project plans submitted to the Department.

2. Avoidance and Minimization Measures

To avoid or minimize adverse impacts to fish and wildlife resources identified above, Permittee shall implement each measure listed below.

- 2.1 CEQA Compliance. Permittee shall implement and adhere to the mitigation measures in the Biological Resources section of the Mitigated Negative Declaration (SCH Number: 2012072054) adopted by the lead agency, Caltrans, for the Project pursuant to the California Environmental Quality Act (CEQA) on November 30, 2012 unless those mitigation measures are less

protective of fish and wildlife or conflict with the conditions of this Agreement.

- 2.2 Work Period. The time period for completing the work within the active channel shall be restricted to periods of low stream flow and dry weather and shall be confined to the period of July 15 to October 15. Construction activities shall be timed with awareness of precipitation forecasts and likely increases in stream flow. Construction activities within the project area shall cease until all reasonable erosion control measures, inside and outside of the project area, have been implemented prior to all storm events. Revegetation, restoration and erosion control work is not confined to this time period.
- 2.3 Work Period Modification. If Permittee needs more time to complete the project activity, the work may be permitted outside of the work period and extended on a day-to-day basis (or for some other set period of time) by the Department representative who reviewed the project, or if unavailable, through contact with the Regional office. Permittee shall submit a written request for a work period variance to the Department. The work period variance request shall: 1) describe the extent of work already completed; 2) detail the activities that remain to be completed; 3) detail the time required to complete each of the remaining activities; and 4) provide photographs of both the current work completed and the proposed site for continued work. The work period variance request should consider the effects of increased stream flows and rain delays. Work period variances are issued at the discretion of the Department. The Department will review the written request to work outside of the established work period. The Department reserves the right to require additional measures to protect fish and wildlife resources as a condition for granting the variance. The Department will have ten (10) calendar days to review the proposed work period variance.
- 2.4 Work Period in Dry Weather Only. Work within Dry Creek shall be restricted to periods of low stream flow and dry weather. Precipitation forecasts and potential increases in stream flow shall be considered when planning construction activities. Construction activities shall cease and all necessary erosion control measures shall be implemented prior to the onset of precipitation. Construction activities halted due to precipitation may resume when precipitation ceases and the National Weather Service 72 hour weather forecast indicates a 20% or less chance of precipitation, provided no work occurs in the stream bed if water is flowing. If a construction phase may cause the introduction of sediments into the stream: 1) no phase of the project shall be started in May or November of any year, unless all work for that phase and all associated erosion control measures are completed prior to the onset of precipitation; and 2) no phase of the project shall commence unless all equipment and materials are removed from the channel at least 12 hours prior to the onset of precipitation and all associated erosion control

measures are in place prior to the onset of precipitation. No work shall occur during a dry-out period of 24 hours after the above referenced wet weather. Weather forecasts shall be documented upon request by the Department.

- 2.5 Stream Diversions / Dewatering. If work in the flowing portion of the stream is unavoidable, the entire stream flow shall be diverted around or through the work area during the excavation and/or construction operations. Stream flow shall be diverted using gravity flow through temporary culverts/pipes or pumped around the work site with the use of hoses. When any dam or other artificial obstruction is being constructed, maintained, or placed in operation, sufficient water shall at all times be allowed to pass downstream to maintain aquatic life below the dam pursuant to Fish and Game Code section 5937. Any temporary dam or other artificial obstruction constructed shall only be built from clean materials such as sandbags, gravel bags, water dams, or clean/washed gravel which will cause little or no siltation. The Department will review the proposed water diversion method, to approve the plan or provide the requirements for that approval. The Permittee may not commence the diversion of water without the explicit approval from the Department.
- 2.6 Bird Nests. It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird except as otherwise provided by the Fish and Game Code. No trees that contain active nests of birds shall be disturbed until all eggs have hatched and young birds have fledged without prior consultation and approval of a Department representative.
- 2.7 Swallow Nesting Considerations. Impacts to swallows shall be avoided by either (a) limiting construction underneath the bridge to the season outside of the swallow nesting period (March 15 through August 31), or (b) through the prevention of nest building underneath the bridge. Prevention of nest construction may include daily removal of mud nest material deposits using a pole-scraper or a pressure washer. Alternatively, swallows may be physically excluded from the bridge through the use of plastic sheeting, nets or other materials. Swallow exclusion methods shall be inspected daily for accidental ensnarement or attempted nest building. Once an exclusion device has been installed, it must be maintained by the contractor and kept in good working order.
- 2.8 Removal of Trees/Shrubs During Fall/Winter Months. To avoid potential impact to tree nesting birds, trees and shrubs designated for removal may be cut down during the time period of November 1 to January 31. Tree and shrub removal may commence provided that that no birds are nesting, or using the site as a rookery at the time of removal.
- 2.9 Vegetation Removal. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete operations. Except for the trees

specifically identified for removal in the notification, no native trees with a trunk diameter at breast height (DBH) in excess of four (4) inches shall be removed or damaged without prior consultation and approval of a Department representative. Using hand tools (clippers, chain saw, etc.), trees may be trimmed to the extent necessary to gain access to the work sites. All cleared material/vegetation shall be removed out of the riparian/stream zone.

- 2.10 Sediment Control. Precautions to minimize turbidity/siltation shall be taken into account during project planning and implementation. This may require the placement of silt fencing, coir logs, coir rolls, straw bale dikes, or other siltation barriers so that silt and/or other deleterious materials are not allowed to pass to downstream reaches. Materials composing the silt barrier shall not pose an entanglement risk to fish or wildlife such as monofilament mesh and non-biodegradable synthetic erosion blankets. Passage of sediment beyond the sediment barrier(s) is prohibited. If any sediment barrier fails to retain sediment, corrective measures shall be taken. The sediment barrier(s) shall be maintained in good operating condition throughout the construction period and the following rainy season. Maintenance includes, but is not limited to, removal of accumulated silt and/or replacement of damaged siltation barriers. The Permittee is responsible for the removal of non-biodegradable silt barriers (such as plastic silt fencing) after the disturbed areas have been stabilized with erosion control vegetation (usually after the first growing season). Upon Department determination that turbidity/siltation levels resulting from project related activities constitute a threat to aquatic life, activities associated with the turbidity/siltation shall be halted until effective Department approved control devices are installed or abatement procedures are initiated.
- 2.11 Rock Slope Protection. Un-grouted rock slope protection (RSP) and energy dissipater materials shall consist of clean rock, competent for the application, sized and properly installed to resist washout. RSP slopes shall be supported with competent boulders keyed into a footing trench with a depth sufficient to properly seat the footing course boulders and prevent instability (typically at least 1/3 diameter of footing course boulders).
- 2.12 Pollution Control. Utilize Best Management Practices (BMPs) to prevent spills and leaks into water bodies. If maintenance or refueling of vehicles or equipment must occur on-site, use a designated area and/or a secondary containment, located away from drainage courses to prevent the runoff of storm water and the runoff of spills. Ensure that all vehicles and equipment are in good working order (no leaks). Place drip pans or absorbent materials under vehicles and equipment when not in use. Ensure that all construction areas have proper spill clean up materials (absorbent pads, sealed containers, booms, etc.) to contain the movement of any spilled substances. Any other substances which could be hazardous to aquatic

life, resulting from project related activities, shall be prevented from contaminating the soil and/or entering the waters of the state. Any of these materials, placed within or where they may enter a stream or lake by the Applicant or any party working under contract or with the permission of the Permittee, shall be removed immediately. The Department shall be notified immediately by the Permittee of any spills and shall be consulted regarding clean-up procedures.

3. Compensatory Measures

To compensate for adverse impacts to fish and wildlife resources identified above that cannot be avoided or minimized, Permittee shall implement each measure listed below.

- 3.1 Habitat Restoration Plan. Riparian areas and wetland habitats temporarily disturbed by construction shall be replanted with native species typically found in the area. A restoration/revegetation plan (including a mitigation monitoring plan) shall be prepared by a qualified revegetation ecologist. The revegetation plan shall be submitted to the Department for approval prior to the start of construction.
- 3.2 Replace Trees In-Kind. Native trees removed for this project shall be replaced in kind at a ratio of 3:1, and maintained until established. Permittee shall monitor and maintain, as necessary, all plants for five (5) years to ensure successful revegetation. All planting shall have a minimum of 50% survival at the end of five (5) years. This restoration shall be under the direction of the Department or Designated Biologist.

4. Reporting Measures

Permittee shall meet each reporting requirement described below.

- 4.1 The Permittee shall notify the Department within two working days of beginning work within the stream zone. Notification shall be submitted as instructed in Contact Information section below. Email notification is preferred.
- 4.2 Upon completion of the project activities described in this agreement, the project area shall be digitally photographed. Photographs shall be submitted to the Department within fifteen (15) days of project completion. Photographs and notification of project completion shall be submitted as instructed in Contact Information section below. Email submittal is preferred.

- 4.3 Monitoring Report: Permittee shall submit an annual monitoring report to the Department by December 31 of each year for five (5) years after completion of the construction project. ~~The report shall discuss the~~ mitigation performance as it relates to the success criteria. The report shall include the success of natural revegetation establishment, survival, percent cover, and height of both tree and shrub species. The number by species of plants replaced (if applicable), an overview of the revegetation effort, and the method used to assess these parameters shall also be included. Monitoring reports should include photographs from designated photo stations.

CONTACT INFORMATION

Any communication that Permittee or the Department submits to the other shall be in writing and any communication or documentation shall be delivered to the address below by U.S. mail, fax, or email, or to such other address as Permittee or the Department specifies by written notice to the other.

To Permittee:

John Holder
California Department of Transportation
703 B Street
Marysville, CA 95901
Email – John.Holder@dot.ca.gov

To The Department:

Department of Fish and Wildlife
North Central Region
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670
Attn: Lake and Streambed Alteration Program
Notification #1600-2013-0217 R2

Fax: 916-358-2912
Email: r2lsa@wildlife.ca.gov

LIABILITY

Permittee shall be solely liable for any violations of the Agreement, whether committed by Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents or contractors and subcontractors, to complete the project or any activity related to it that the Agreement authorizes.

This Agreement does not constitute the Department's endorsement of, or require Permittee to proceed with the project. The decision to proceed with the project is Permittee's alone.

SUSPENSION AND REVOCATION

The Department may suspend or revoke in its entirety the Agreement if it determines that Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, is not in compliance with the Agreement.

Before the Department suspends or revokes the Agreement, it shall provide Permittee written notice by certified or registered mail that it intends to suspend or revoke. The notice shall state the reason(s) for the proposed suspension or revocation, provide Permittee an opportunity to correct any deficiency before the Department suspends or revokes the Agreement, and include instructions to Permittee, if necessary, including but not limited to a directive to immediately cease the specific activity or activities that caused the Department to issue the notice.

ENFORCEMENT

Nothing in the Agreement precludes the Department from pursuing an enforcement action against Permittee instead of, or in addition to, suspending or revoking the Agreement.

Nothing in the Agreement limits or otherwise affects the Department's enforcement authority or that of its enforcement personnel.

OTHER LEGAL OBLIGATIONS

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from obtaining any other permits or authorizations that might be required under other federal, state, or local laws or regulations before beginning the project or an activity related to it.

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with other applicable statutes in the FGC including, but not limited to, FGC sections 2050 *et seq.* (threatened and endangered species), 3503 (bird nests and eggs), 3503.5 (birds of prey), 5650

(water pollution), 5652 (refuse disposal into water), 5901 (fish passage), 5937 (sufficient water for fish), and 5948 (obstruction of stream).

Nothing in the Agreement authorizes Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, to trespass.

AMENDMENT

The Department may amend the Agreement at any time during its term if the Department determines the amendment is necessary to protect an existing fish or wildlife resource.

Permittee may amend the Agreement at any time during its term, provided the amendment is mutually agreed to in writing by the Department and Permittee. To request an amendment, Permittee shall submit to the Department a completed Department "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the corresponding amendment fee identified in the Department's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

TRANSFER AND ASSIGNMENT

This Agreement may not be transferred or assigned to another entity, and any purported transfer or assignment of the Agreement to another entity shall not be valid or effective, unless the transfer or assignment is requested by Permittee in writing, as specified below, and thereafter the Department approves the transfer or assignment in writing.

The transfer or assignment of the Agreement to another entity shall constitute a minor amendment, and therefore to request a transfer or assignment, Permittee shall submit to the Department a completed Department "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the minor amendment fee identified in the Department's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

EXTENSIONS

In accordance with FGC section 1605(b), Permittee may request one extension of the Agreement, provided the request is made prior to the expiration of the Agreement's term. To request an extension, Permittee shall submit to the Department a completed Department "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the extension fee identified in the Department's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5). the Department shall process the extension request in accordance with FGC 1605(b) through (e).

If Permittee fails to submit a request to extend the Agreement prior to its expiration, Permittee must submit a new notification and notification fee before beginning or continuing the project the Agreement covers (Fish & G. Code, § 1605, subd. (f)).

EFFECTIVE DATE

The Agreement becomes effective on the date of the Department's signature, which shall be: 1) after Permittee's signature; 2) after the Department complies with all applicable requirements under the California Environmental Quality Act (CEQA); and 3) after payment of the applicable FGC section 711.4 filing fee listed at http://www.wildlife.ca.gov/habcon/ceqa/ceqa_changes.html.

TERM

This Agreement shall expire within five (5) years of the Department's signature, unless it is terminated or extended before then. All provisions in the Agreement shall remain in force throughout its term. Permittee shall remain responsible for implementing any provisions specified herein to protect fish and wildlife resources after the Agreement expires or is terminated, as FGC section 1605(a)(2) requires.

EXHIBIT

The document listed below is included as an exhibit to the Agreement.

Attachment A: Project Maps

AUTHORITY

If the person signing the Agreement (signatory) is doing so as a representative of Permittee, the signatory hereby acknowledges that he or she is doing so on Permittee's behalf and represents and warrants that he or she has the authority to legally bind Permittee to the provisions herein.

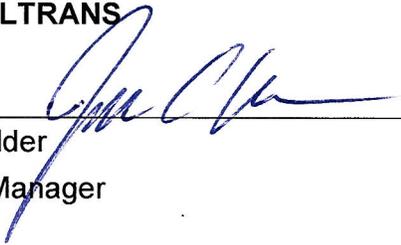
AUTHORIZATION

This Agreement authorizes only the project described herein. If Permittee begins or completes a project different from the project the Agreement authorizes, Permittee may be subject to civil or criminal prosecution for failing to notify the Department in accordance with FGC section 1602.

CONCURRENCE

The undersigned accepts and agrees to comply with all provisions contained herein.

FOR CALTRANS



John Holder
Project Manager

1-14-14
Date

FOR DEPARTMENT OF FISH AND WILDLIFE



Tina Bartlett
Regional Manager

1/21/14
Date

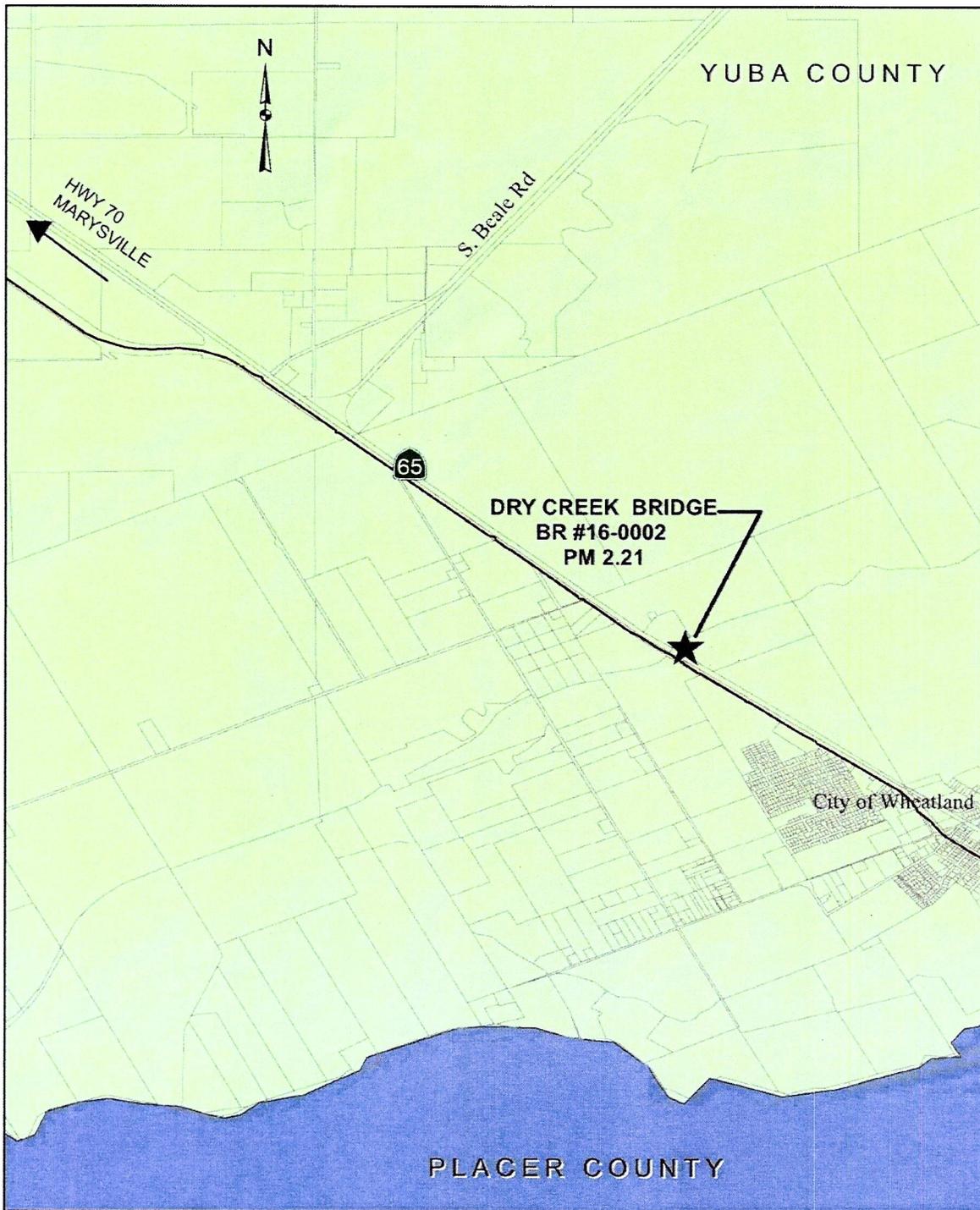
Prepared by: Tim Nosal
Environmental Scientist

Attachment A:
Project Maps

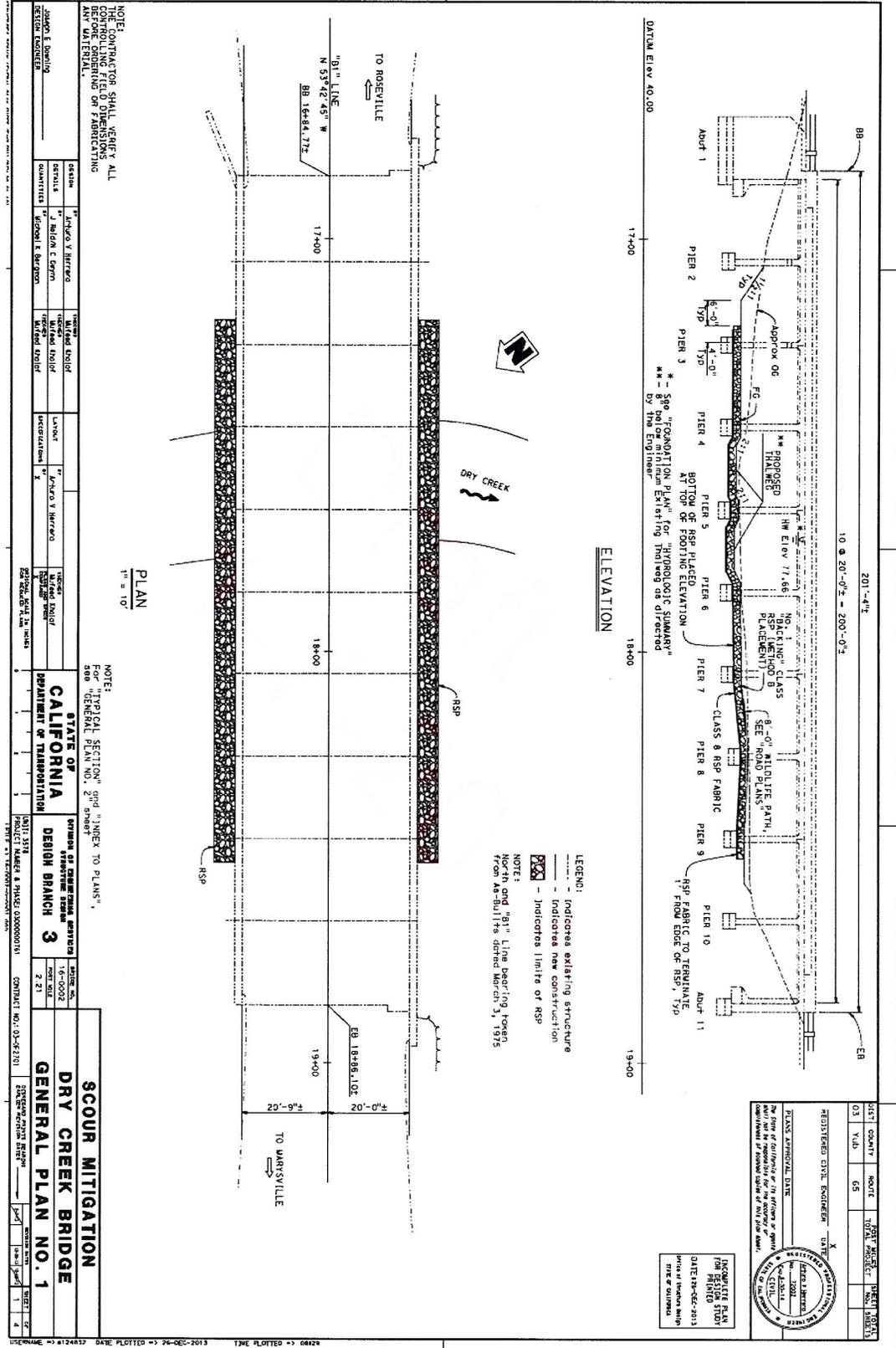
CALTRANS: State Route 65 Dry Creek Bridge Scour Mitigation Project
Yuba County

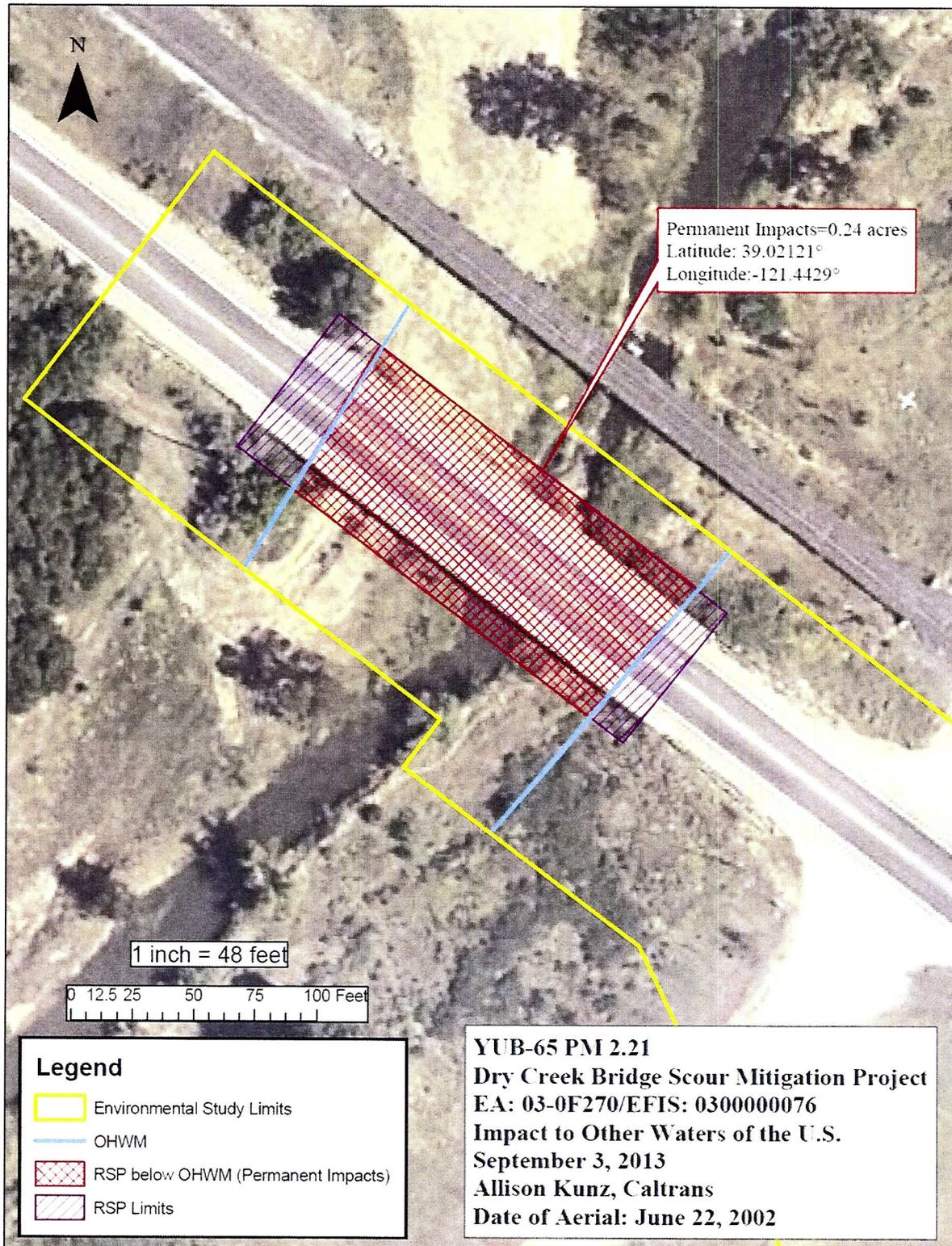
LSA#1600-2013-0217-R2

Vicinity Map 0F270 – Bridge Scour Mitigation



0 2,450 4,900
Feet







**UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration**

NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

OCT 25 2012

In response refer to:
2012/00150

Ms. Sandra Rosas
Branch Chief
Department of Transportation
District 3
703 B Street
Marysville, California 95901-0911

Dear Ms. Rosas:

This letter is in response to your February 23, 2012, request for initiation of section 7 consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This District 3 Dry Creek Bridge Scour Mitigation project is on State Route (SR) 65 in Yuba County near the city of Wheatland at post mile 2.21. This structure has been identified by Structure Hydraulics as scour critical. By placing rock slope protection under the structure, the project will preserve the integrity of the facility and delay additional maintenance or replacement.

The California Department of Transportation (Caltrans) has determined that the proposed project may affect, but is not likely to adversely affect, threatened Central Valley (CV) spring-run Chinook salmon (*Oncorhynchus tshawytscha*), and threatened California CV (CCV) steelhead (*O. mykiss*). In addition, Caltrans has determined that the proposed project may adversely affect the Essential Fish Habitat (EFH) of Pacific salmon, and has requested initiation of consultation pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSA). This letter also serves as consultation under the authority of, and in accordance with, the provisions of the Fish and Wildlife Coordination Act of 1934 (FWCA), as amended. NMFS recognizes that Caltrans is acting in conjunction with the Federal Highway Administration (FHWA) for this project and has assumed FHWA's responsibilities under Federal environmental laws as allowed by the Memorandum of Understanding between FHWA and Caltrans, which became effective on July 1, 2007.

Project Description

The Dry Creek project proposes to perform scour mitigation on Dry Creek Bridge on SR 65. Other proposed work includes constructing new approach slabs, removing existing deck AC surfacing and unsound concrete, placing a 3/4-inch polyester concrete deck overlay, and replacing the deck joint seals. Temporary construction easements will be required on two



parcels (one on the north side and one on the south side of the bridge) and right of entry will be required for access to railroad right of way.

Construction of a temporary stream crossing/work platform is proposed to keep the stream free from mud and silt while work is being performed within the stream channel. Stream flow will pass through the work site using a series of 18-36 inch diameter metal culverts installed at grade within the stream. A layer of visquine fabric will be placed over the culverts before placing a layer of gravel or finer material to complete the work pad. All temporary fills required for the work platform will be removed upon completion of in-stream work activities.

Steelhead are present in the creek and spawn in the upper reaches. Spring-run Chinook salmon will not be present in the project area, therefore will not be impacted by project activities. The only spring-run Chinook present are rearing juveniles that occasionally could enter the very lowest reach, which is not the action area.

Activities conducted in the active channel of the creek will be limited to a July 15 through October 15 work window. Silt curtains will be used around in-water work areas to minimize turbidity and sedimentation. Best management practices (BMPs) will also be used to reduce water quality impacts. These BMPs include, but are not limited to, disturbed soils to be seeded, mulched, and fertilized; straw wattles; silt fences; sediment basins; or other control methods to be used to prevent sediments from entering Dry Creek. Caltrans will install temporary environmental sensitive area fencing before any work begins to protect against construction related impacts. As a result of these avoidance and minimization measures and BMPs, post project site reclamation and aforementioned work windows, the project is not likely to adversely affect threatened CV spring-run Chinook salmon or CCV steelhead.

Caltrans will incorporate the following measures to avoid and minimize potential impacts to CV spring-run Chinook salmon and CCV steelhead:

- (1) A qualified Biologist will inspect the work area prior to start of work to confirm presence of salmonids.
- (2) In water work will occur during the summer / early fall (July 15 to October 15) when flows are low and water temperatures are too warm to support salmonids.
- (3) Silt curtains will be used around in-water work to minimize turbidity and sedimentation.
- (4) Erosion control will be applied to disturbed soil areas prior to October 15.
- (5) BMPs will be implemented into the proposed project to minimize impacts to waterways.
- (6) Loss of riparian habitat will be minimized within the project area through preserving existing vegetation to the maximum extent possible and re-vegetating disturbed areas to establish permanent riparian cover.

ESA Section 7 Consultation

Based on our review of the material provided with your request and the best scientific and commercial information currently available, NMFS will require the following of Caltrans:

- (1) Incorporate avoidance and minimization measures into the project description to reduce the potential impacts to listed anadromous fish or their habitat to a level that is insignificant or discountable.
- (2) Activities conducted in the active channel of the creek will be limited to the timeframe between July 15 and October 15 when steelhead won't be migrating through the project area and temperatures are too high for them to be rearing or spawning; therefore impacts to listed fish would be insignificant or discountable.
- (3) Caltrans will refurbish all removed native riparian vegetation within the project area by replanting the same species on-site at a 3:1 ratio of restored to removed vegetation to maintain fish critical habitat.
- (4) There is no spawning habitat for these fish in the vicinity of the project action area and critical habitat will be avoided, therefore the construction activities will be insignificant or discountable.

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of threatened and endangered species. Conservation recommendations are discretionary agency activities intended to minimize or avoid adverse effects of a proposed project on listed species or critical habitat, to help implement recovery plans, or to develop information. In order to fulfill the requirements of section 7(a)(1), NMFS recommends that Caltrans purchase riparian credits from a NMFS approved anadromous fish conservation bank at a ratio of 3 acres to every 1 acre of the project area footprint that lies within 100 feet of the riparian zone associated with the channel.

This concludes ESA consultation for the Dry Creek Scour Repair project. Incidental take authorization pursuant to section 7(b)(4) and section 7(o)(2) of the ESA is not permitted. Re-initiation of any consultation would be required where discretionary Federal agency involvement or control over the proposed project has been retained (or is authorized by law), and if: (1) new information reveals effects of the proposed project that may affect listed species or critical habitat in a manner or to an extent not considered; (2) the proposed project is subsequently modified in a manner that causes adverse effects to listed species or critical habitat; or (3) a new species is listed or critical habitat designated that may be affected by the proposed project.

EFH Consultation

With regards to EFH consultation, the action area has been identified as EFH for Pacific salmon in Amendment 14 of the Pacific Salmon Fishery Management Plan pursuant to the MSA. Federal action agencies are mandated by the MSA (section 305(b)(2)) to consult with NMFS on all actions that may adversely affect EFH and NMFS must provide EFH conservation recommendations to those agencies (section 305(b)(4)(A)). Based on our review of the material provided and the best scientific information available, NMFS has determined that the proposed action will adversely affect EFH for Pacific salmon. However, the proposed action includes adequate measures (described in the ESA section 7 consultation above) to avoid, minimize, or otherwise offset the adverse effects to EFH. Therefore, additional EFH conservation recommendations are not being provided at this time; and written response as required under section 305(b)(4)(B) of the MSA and Federal regulations (50C.F.R. §600.920(k)) will not be

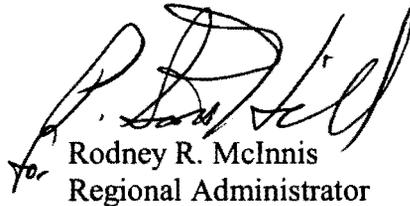
required. If there are substantial revisions to the proposed project, the lead Federal agency will need to re-initiate EFH consultation.

FWCA

The purpose of the FWCA is to ensure that wildlife conservation receives equal consideration, and is coordinated with other aspects of water resources development (16 U.S.C. 661). The FWCA establishes a consultation requirement for Federal departments and agencies that undertake any action that proposes to modify any stream or other body of water for any purpose, including navigation and drainage (16 U.S.C. 662(a)). Consistent with this consultation requirement, NMFS provides recommendations and comments to Federal action agencies for the purpose of conserving fish and wildlife resources. The FWCA provides the opportunity to offer recommendations for the conservation of species and habitats beyond those currently managed under the ESA and MSA.

Please contact Dylan Van Dyne at (916) 930-3725, or via e-mail at Dylan.VanDyne@noaa.gov, if you have any questions or require additional information concerning this project.

Sincerely,



for
Rodney R. McInnis
Regional Administrator

cc: Copy to File ARN 151422SWR2012SA00032
NMFS-PRD, Long Beach, CA

CENTRAL VALLEY FLOOD PROTECTION BOARD

3310 El Camino Ave., Rm. 151
SACRAMENTO, CA 95821
(916) 574-0609 FAX: (916) 574-0682
PERMITS: (916) 574-0685 FAX: (916) 574-0682



December 11, 2014

California Department of Transportation (Caltrans)
703 B Street
Marysville, California 95901

Subject: Permit No. 18964 BD

Enclosed is your approved Central Valley Flood Protection Board Encroachment Permit No. 18964 BD.

Under General Condition Four (4) of the permit, you are required to accomplish the work under direction and supervision of the Department of Water Resources; therefore, you must advise the Department by contacting the Board at (916) 574-0609, and by sending the enclosed postcard to the Department at least ten days prior to starting your project.

Please note that this permit grants the work proposed and constructed in your project description. This permit, in addition to the twelve (12) standard conditions, includes special conditions, which may place limitations on or require modifications to your project. You are advised to read all conditions prior to starting the project. Commencing any work under this permit shall constitute an acceptance of the provisions of the permit and an agreement to perform accordingly. This permit does not relieve you from the responsibility for obtaining authorization from any State, local, or federal agencies for your proposed project.

Please refer to your permit number when communicating with this office. For further information, contact Sungho Lee at (916) 574-2384 or by e-mail at lees@water.ca.gov.

Sincerely,

Eric Butler, Chief
Projects and Environmental Branch
Central Valley Flood Protection Board

Enclosure

STATE OF CALIFORNIA
THE RESOURCES AGENCY
THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 18964 BD

This Permit is issued to:

California Department of Transportation (Caltrans)
703 B Street
Marysville, California 95901

To install scour remediation mitigation under an existing highway bridge and footings including compacted backfill and Rock Slope Protection (RSP) placed over filter fabric. Spalling in the columns and footings will also be repaired.

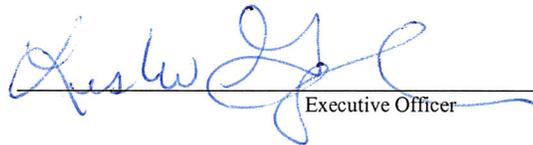
The project is located at the Dry Creek Bridge (Caltrans Bridge No. 16-0002, Post Mile 2.21) on State Route 65, just north of the City of Wheatland (Section 32, T14N, R5E, MDB&M, Reclamation District 2103, Dry Creek, Yuba County).

NOTE: Special Conditions have been incorporated herein which may place limitations on and/or require modification of your proposed project as described above.

(SEAL)

DEC 16 2014

Dated: _____


Executive Officer

GENERAL CONDITIONS:

ONE: This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

TWO: Only work described in the subject application is authorized hereby.

THREE: This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

FOUR: The approved work shall be accomplished under the direction and supervision of the State Department of Water Resources, and the permittee shall conform to all requirements of the Department and The Central Valley Flood Protection Board.

FIVE: Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of The Central Valley Flood Protection

Board.

SIX: This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 days' notice.

SEVEN: It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

EIGHT: This permit does not establish any precedent with respect to any other application received by The Central Valley Flood Protection Board.

NINE: The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

TEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

ELEVEN: The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interfere with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

TWELVE: Should any of the work not conform to the conditions of this permit, the permittee, upon order of The Central Valley Flood Protection Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

SPECIAL CONDITIONS FOR PERMIT NO. 18964 BD

THIRTEEN: All work completed under this permit, as directed by the general and special conditions herein, shall be accomplished to ensure that the work is not injurious to adopted plans of flood control, regulated streams, and designated floodways under the Central Valley Flood Protection Board jurisdiction, as defined in California Code of Regulations, Title 23. This permit only applies to the completion of work in the project description located within, or adjacent to and having bearing on the Board jurisdiction, and which directly or indirectly affects the Board's jurisdiction. This special condition shall apply to all subsequent conditions herein.

LIABILITY AND INDEMNIFICATION

FOURTEEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the Central Valley Flood Protection Board, the Department of Water Resources, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, arising out of failure on the permittee's part to perform the obligations under this permit, the permittee shall defend and shall hold each of them harmless from each claim. This condition shall supersede condition TEN.

FIFTEEN: The permittee shall defend, indemnify, and hold the Central Valley Flood Protection Board, the Department of Water Resources, and their respective officers, agents, employees, successors and assigns, safe and harmless, of and from all claims and damages related to the Central Valley Flood Protection Board's approval of this permit, including but not limited to claims filed pursuant to the California Environmental Quality Act. The Central Valley Flood Control Board and the Department of Water Resources expressly reserve the right to supplement or take over their defense, in their sole discretion.

SIXTEEN: The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend, indemnify, and hold the Central Valley Flood Protection Board, the Department of Water Resources, and their respective officers, agents, employees, successors and assigns, safe and harmless, of and from all claims and damages arising from the project undertaken pursuant to this permit, all to the extent allowed by law. The Central Valley Flood Control Board and the Department of Water Resources expressly reserve the right to supplement or take over their defense, in their sole discretion.

SEVENTEEN: The Central Valley Flood Protection Board and the Department of Water Resources shall not be held liable for damages to the permitted encroachment(s) resulting from releases of water from reservoirs, flood fight, operation, maintenance, inspection, or emergency repair.

EIGHTEEN: If the permittee does not comply with the conditions of the permit and enforcement by the Board is required, the permittee shall be responsible for bearing all costs associated with the enforcement action, including reasonable attorney's fees. Permittee acknowledges that State law allows the imposition of fines in enforcement matters.

PERMITTING AND AGENCY CONDITIONS

NINETEEN: The permittee shall comply with all conditions set forth in the letter from the U.S. Army Corps of Engineers District Engineer dated December 10, 2014, which is attached to this permit as Exhibit A and is incorporated by reference.

TWENTY: The permittee shall contact the U.S. Army Corps of Engineers, Sacramento District, Regulatory Branch, 1325 J Street, Sacramento, California 95814, telephone (916) 557-5250, as compliance with Section 10 of the Rivers and Harbors Act and/or Section 404 of the Clean Water Act will be required.

TWENTY-ONE: The permittee agrees to incur all costs for compliance with local, State, and Federal permitting. If any conditions issued by other agencies conflict with any of the conditions of this permit, then the permittee shall resolve conflicts between any of the terms and conditions that agencies might impose under the laws and regulations it administers and enforces.

PRE-CONSTRUCTION

TWENTY-TWO: The permittee shall contact the Central Valley Flood Protection Board by telephone at (916) 574-0609 to schedule a preconstruction conference. Failure to do so at least 20 working days prior to start of work may result in delay of the project.

TWENTY-THREE: The permittee shall provide construction supervision and inspection services acceptable to the Central Valley Flood Protection Board.

TWENTY-FOUR: Prior to commencement of work, the permittee shall create a photo record, including associated descriptions of project conditions. The photo record shall be submitted to the Central Valley Flood Protection Board within thirty (30) calendar days of beginning the project.

TWENTY-FIVE: No construction work of any kind shall be done during the flood season from November 1st to April 15th without prior approval of the Central Valley Flood Protection Board.

TWENTY-SIX: Thirty (30) calendar days prior to the start of any demolition and / or construction activities within the floodway or within the existing levee prism, the permittee shall submit two sets of detailed plans and specifications and supporting geotechnical and / or hydraulic impact analyses to the Board's Chief Engineer, for any and all temporary, in channel, or levee prism work that may have an impact during the flood season from November 1 through April 15. The Board may request additional information as needed and will seek comment from the U.S. Army Corps of Engineers and / or the local maintaining agency when necessary. The Board will provide written notification to the permittee if the review period is likely to exceed thirty (30) working days.

CONSTRUCTION

TWENTY-SEVEN: All work approved by this permit shall be in accordance with the submitted drawings and specifications except as modified by special permit conditions herein. No work, other than that approved by this permit, shall be done in the project area without prior approval of the Central Valley Flood Protection Board.

TWENTY-EIGHT: All addenda and contract change orders made to the approved plans and / or specifications by the permittee after Board approval of this permit shall be submitted to the Board's Chief Engineer for review and approval prior to incorporation into the permitted project. The submittal shall include all supplemental plans, specifications, and necessary supporting geotechnical, hydrology and hydraulics, or other technical analyses. The Board shall acknowledge receipt of the addendum or change submittal in writing within ten (10) working days of receipt, and shall work with the permittee to review and respond to the request as quickly as possible. Time is of the essence. The Board may request additional information as needed and will seek comment from the U.S. Army Corps of Engineers and / or local maintaining agencies when necessary. The Board will provide written notification to the permittee if the review period is likely to exceed forty five (45) calendar days. Upon approval of submitted documents the permit shall be revised, if needed, prior to construction related to the proposed changes.

TWENTY-NINE: All debris generated by this project shall be disposed outside of the Dry Creek floodway.

THIRTY: No material stockpiles, temporary buildings, or equipment shall remain in the floodway during the flood season from November 1 to April 15.

THIRTY-ONE: Rock slope revetment shall be uniformly placed and properly transitioned into the bank, levee slope, or adjacent original ground and in a manner which avoids segregation.

THIRTY-TWO: The revetment shall not contain any reinforcing steel, floatable, or objectionable material. Asphalt or other petroleum-based products may not be used as fill or erosion protection on the levee section or within the floodway.

THIRTY-THREE: Density tests by a certified materials laboratory will be required to verify compaction

of backfill within the Dry Creek floodway.

THIRTY-FOUR: Except with respect to the activities expressly allowed under this permit, the work area shall be restored to the condition that existed prior to start of work.

THIRTY-FIVE: The permittee shall be responsible for all damages due to settlement, consolidation, or heave from any construction-induced activities.

VEGETATION / ENVIRONMENTAL MITIGATION

THIRTY-SIX: Cleared trees and brush shall be completely burned or removed from the floodway, and downed trees or brush shall not remain in the floodway during the flood season from November 1 to April 15.

THIRTY-SEVEN: In the event that scour of channel bed injurious to facilities of the State Plan of Flood Control occurs at or adjacent to and as a result of the project, the permittee shall repair the eroded area and propose measures, to be approved by the Board, to prevent further erosion.

POST-CONSTRUCTION

THIRTY-EIGHT: The permittee shall be responsible for repair of any damages to the Dry Creek floodway due to construction, operation, or maintenance of the proposed project.

THIRTY-NINE: Within 120 days of completion of the project, the permittee shall submit to the Central Valley Flood Protection Board as-built drawings and a certification report, stamped and signed by a professional engineer registered in the State of California, certifying the work was performed and inspected in accordance with the Central Valley Flood Protection Board permit conditions and submitted drawings and specifications.

OPERATIONS AND MAINTENANCE

FORTY: The permittee shall maintain the permitted encroachment(s) within the utilized area in the manner required and as requested by the authorized representative of the Central Valley Flood Protection Board, the Department of Water Resources, or any other agency responsible for maintenance.

FORTY-ONE: If the scour mitigation is damaged to the extent that it may impair the channel or floodway capacity, it shall be repaired or removed prior to the next flood season.

FORTY-TWO: If the permitted structure results in any adverse hydraulic impact or scouring the permittee shall provide appropriate mitigation measures subject to review and approval of the Central Valley Flood Protection Board.

FORTY-THREE: The permitted encroachment(s) shall not interfere with the flood conveyance capability of the Dry Creek floodway. If the permitted encroachment(s) are determined by any agency

responsible for operation or maintenance of the flood control project to interfere, the permittee shall be required, at the permittee's cost and expense, to modify or remove the permitted encroachment(s) under direction of the Central Valley Flood Protection Board. If the permittee does not comply, the Central Valley Flood Protection Board may modify or remove the encroachment(s) at the permittee's expense.

FORTY-FOUR: At the request of either the permittee or the Central Valley Flood Protection Board the permittee and the Board shall conduct joint inspections of the project and the Dry Creek floodway after significant flood events or flood seasons to assess the integrity and operation of the project, and to assess and respond to any adverse impacts on the floodway or adjacent properties.

PROJECT ABANDONMENT, CHANGE IN PLAN OF FLOOD CONTROL

FORTY-FIVE: If the project works, or any portion thereof, is to be abandoned in the future, the permittee shall abandon the project under direction of the Central Valley Flood Protection Board at the permittee's cost and expense.

FORTY-SIX: The permittee may be required, at the permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted project works if removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with implementation of the Central Valley Flood Protection Plan or other future flood control plan or project, or if damaged by any cause. If the permittee does not comply, the Central Valley Flood Protection Board may perform this work at the permittee's expense.

END OF CONDITIONS

REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

Flood Protection and Navigation Section (18964)

DEC 10 2014

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, California 95821

Dear Ms. Gallagher:

We have reviewed a permit application by Caltrans (application number 18964). This project includes replacing the rock slope protection over filter fabric and repairing the spalls in the columns and footings on the bridge over Dry Creek. This project is located at the Dry Creek Bridge (Br No. 16-0002) on State Route 65, near the City of Wheatland, at 39.022689°N 121.445411°W NAD83, Yuba County, California.

The District Engineer has no objection to approval of this application by your Board from a flood control standpoint, subject to the following conditions:

- a. That the proposed work shall not be performed during the flood season of November 1 to April 15, unless otherwise approved in writing by your Board.
- b. That in the event trees and brush are cleared, they shall be properly disposed of by either complete burning or complete removal outside the limits of the project right-of-way.
- c. That the proposed rock slope protection shall be placed uniformly and properly transitioned into the natural bank at both ends.
- d. That in the event erosion occurs at the site, the eroded areas shall be repaired and bank protection placed to prevent future erosion.
- e. That the proposed work shall not interfere with the integrity or hydraulic capacity of the flood risk reduction project; easement access; or maintenance, inspection, and flood fighting procedures.
- f. That the work area shall be restored to at least the existing lines and grade.

A Section 404 permit (201300225) has been issued for this work.

A copy of this letter is being furnished to Mr. Don Rasmussen, Chief, Flood Project Integrity and Inspection Branch, 3310 El Camino Avenue, Suite 200, Sacramento, CA 95821.

Sincerely,

A handwritten signature in black ink that reads "Rick L. Poepelman". The signature is written in a cursive style with a large, prominent initial "R".

Rick L. Poepelman, P/E.
Chief, Engineering Division

State of California – Department of Transportation
Division of Engineering Services
Structure Hydraulics & Hydrology

FINAL HYDRAULIC REPORT

Dry Creek

Bridge No. 16-0002
3 - YUB - 65 - PM 2.21
Contract No. 3-0F2701
Project No. 03 0000 0076

Prepared by:

Anthony Nedwick, PE
Structure Hydraulics and Hydrology
October 21, 2014



General:

It is proposed to perform scour mitigation at the Dry Creek Bridge (Br. No. 16-0002) by placing rock slope protection (RSP) and appropriate RSP filter fabric beneath the structure. The RSP is proposed to extend 5 feet beyond the edge of deck in the downstream direction, not including the embedded toe at the downstream edge which will add approximately 6.75 feet. However, this embedded toe is proposed to be covered by compacted backfill. The upstream edge will extend 7 feet beyond the edge of deck, beginning with a vertical key 4'-6" deep and 3'-0" thick. The excavation for the placement of this vertical key shall be a minimum of 5 feet away from the spread footings for the existing bridge. The finished grade will transition from the original ground upstream of the structure to the RSP mat by means of compacted backfill. The riprap will also extend from Pier 3 to Pier 9, with the placement starting in Span 2, 4'-0" from the Pier 3 columns and continuing into Span 9, 4'-0" beyond the Pier 9 columns. The RSP fabric shall extend only 3 feet from the columns into Span 2 and Span 9. In the longitudinal direction, the RSP fabric shall extend from the upstream edge of the vertical key, approximately 7'-0" upstream of the bridge deck, to the downstream edge of the embedded toe on the downstream side of the structure.

Dry Creek Bridge, originally built in 1915, is a ten-span reinforced concrete (RC) girder structure on RC column bents founded primarily on spread footings. In 1935, the structure was widened on both sides incorporating RC slabs and two RC columns per pier, also founded on spread footings. The structure was widened again in 1975 along the downstream side with an RC slab on driven RC pile extensions. The structure has an overall length of 201'-4" and a width of 44'-5". The project is located at Post Mile 2.21 on State Route 65 in Yuba County, near the City of Wheatland.

The existing structure has been determined to be scour critical (NBIS Item 113 Code of "3") due to the previous exposure and potential undermining of the spread footings. During a May 11, 2005 field investigation, the top of footing was felt by probing the channel. At the time, "this exposure spanned only the first two upstream columns at Bent 6." A channel cross-section taken during the September 11, 2007 bridge inspection indicated that the Pier 4 footing had little cover.

At the bridge location, the main channel is wide and shallow, and appears to be a lower overall elevation than the floodplain downstream of the bridge, possibly the effect of sediment starvation and land owner alteration. There was a note in the Structure Hydraulics file, indicating that the current property owner has stated that he periodically, often yearly, clears the channel of both debris and sediment so that he can access his property downstream of State Route 65. Downstream of the bridge, the main channel is incised in the floodplain with the levee along only the south side of the channel and a walnut orchard to the north. The walnut orchard features widely spaced trees with very smooth ground and short cut grass.

Upstream of the bridge, there is also a levee along the south side of the channel. There is a railroad bridge located approximately 50 feet upstream from the Dry Creek Bridge, and there are also two small hydraulic structures; a sacked concrete structure approximately 115 feet upstream of the Dry Creek Bridge (about 55 foot upstream of the railroad bridge), and another structure covered with concrete rubble approximately 480 feet upstream of the Dry Creek Bridge. This second structure appears to be acting as a dam. Above this dam, the main channel forms a pool that continues for more than 1000 feet upstream of the dam. Based on a March 2013 survey, the water behind this dam is generally less than 5 foot in depth.

Datum:

The vertical datum used for this report is based on the 2013 survey data using the NAVD 1988. Datum transformation information between NGVD 1929 and NAVD 1988 was determined using the VERTCON Orthometric Height Conversion provided by the National Geodetic Survey, National Oceanic and Atmospheric Administration (www.ngs.noaa.gov) website. According to the NGS information, the NAVD 1988 datum is 2.2 feet higher than the NGVD 1929 datum at the project site.

This report uses the As-Built plans and information provided by Structure Design, as well as various other information including previous Caltrans reports, FEMA Flood Insurance Studies, other hydraulic studies, USGS information and survey data from Preliminary Investigations. As-Built elevations were converted to the NAVD 1988 datum using the conversion factor noted above. **All elevations indicated in this report are based on Vertical Datum NAVD 1988, except as noted.**

Basin:

Dry Creek Basin covers approximately 103 mi² at the site, flowing through canyons in the tree covered foothills of the Sierra Mountains to the east of Beale Air Force Base. The watershed has no significant flood control features such as reservoirs, but Dry Creek bifurcates into Dry Creek and Best Slough upstream of the project site.

Discharge:

To estimate flow rates, previous Caltrans studies along with the latest information from the USGS SteamStats website were reviewed. There was no discharge data found in the 2011 FEMA Flood Insurance Study (FIS) for Yuba County, which includes the Dry Creek watershed. According to the Army Corps of Engineers O&M Manual for the lower reach of Dry Creek (Unit 146 of the Sacramento River Flood Control Project) and the Central Valley Flood Protection Board, the Design Capacity is 9,000 cfs. For modeling purposes, it was assumed that all the flow reaches the bridge.

The FEMA 1% Annual Chance Flood (from the 2011 FEMA FIS, Flood Profile 12P) indicates a water surface elevation of approximately 78.5 feet (NAVD 88). The HEC-

RAS model for the existing configuration and using the 10,100 cfs flow rate, had a water surface elevation of 77.27 feet (NAVD 88) at approximately the same location, River Station 7587.5 at the downstream side of the Route 65 Dry Creek Bridge. This is lower than the FEMA value, but the 2011 FEMA Flood Profile also has an approximate invert elevation of 67 feet at this location, while the HEC-RAS data used for this report has an invert elevation of approximately 62.3 feet.

The 2011 version of the FEMA FIS does not list the 1% discharge in the "Summary of Discharges" table. However, the September 30, 2008 "Preliminary" FEMA FIS provided by the Central Valley Flood Control Board, indicated a 1% discharge of 10,200 cfs.

Historical data from USGS stream gage #11424500, located approximately 2500 feet upstream from the Dry Creek Bridge, was found on the USGS website. The USGS StreamStats Data-Collection Station Report for this station noted a drainage area of 99.9 mi² at the gage site, with a 50-year Discharge of 9,110 cfs and a 100-year Discharge of 10,100 cfs. The Army Corps and CVFPB Design Capacity is 9,000 cfs. These were the flow rates used for this analysis.

Hydraulic Analysis:

The channel hydraulics were modeled using the Army Corps of Engineers HEC-RAS modeling program, version 4.1.0, utilizing additional survey data provided by Caltrans Preliminary Investigations. HEC-RAS was used to determine the water surface elevations and velocities throughout the project reach. The Dry Creek Bridge is located at River Station 7600 in the HEC-RAS model.

Manning's roughness coefficients varied and were estimated using the USGS Water-Supply Paper 2339, "Guide for Selecting Manning's Roughness Coefficients for Natural Channels and Flood Plains", V.T.Chow's "Open-Channel Hydraulics" (1959), Federal Highway Administration (FHWA) HDS6 and HEC 23, as well as data and photos gathered during site investigations. See Figure 15 for an example of the composite roughness coefficient. Manning's coefficients were estimated between 0.028 and 0.039 in the main channel and ranged from 0.030 to 0.033 in the floodplain areas with open, grassy areas, walnut orchards and flat agricultural fields. Along the banks of the low-flow channel, the Manning's n-value was estimated at up to 0.047 due to trees and brush. The vegetation along the banks of the low-flow channel was generally confined to a narrow band on each bank and was not consistent throughout the reach.

The channel is very flat, with an overall average slope of approximately 0.05% in the reach studied, with a slightly steeper slope of 2.1% in the vicinity of the structure, from the base of the small check dam located about 55 feet upstream of the railroad bridge to a location approximately 100 feet downstream of the Route 65 Bridge.

There were two different scenarios analyzed; the existing channel configuration and the proposed channel configuration. The proposed configuration altered the channel only in the vicinity of the bridge by transitioning the channel and embedding a layer of RSP to the top of the footings, with the elevations converted to the NAVD 1988 Datum. This was accomplished in the HEC-RAS model by placing cross-sections at the upstream and downstream limits of the RSP (HEC-RAS RS 7591.5 and RS 7647.5) and the upstream edge of deck (RS 7641.0), and using the appropriate Manning's roughness coefficient for the RSP. Using an iterative process, the appropriate size of riprap was determined using the methods contained in the Federal Highway Administration's (FHWA) HEC 23; Bridge Scour and Stream Instability Countermeasures (Design Guideline 11, p.DG11.6, Equations 11.1 and 11.3). For the final iteration, a velocity of 5.74 fps was taken from the HEC-RAS Velocity Distribution for the cross-section at the downstream side of the Route 65 bridge. A Pier Shape Factor of 1.7 was used to account for the square columns. It was estimated that the riprap used shall be No.1 "backing" class RSP per Caltrans Standard Specifications (2010), with a W_{50} of 75 lbs, a D_{50} of 0.95 feet, a layer thickness of 1.8 feet (Method B placement) and a Manning's n-value of 0.039. For construction purposes, the layer shall have a minimum thickness of 1'-10". The Manning's coefficient for the RSP was verified using a form of Strickler's equation as found in the FHWA *HDS 6; River Engineering for Highway Encroachments*. Using the Anderson K_u factor of 0.0395 provides a more conservative value for the Manning's coefficient than the Chow K_u factor of 0.0342. See Figures 1, 2 and 3 below.

11.3 SIZING ROCK RIPRAP AT BRIDGE PIERS

To determine the required size of stone for riprap at bridge piers, NCHRP Project 24-23 recommends using the rearranged Isbash equation from the Federal Highway Administration's Hydraulic Engineering Circular No. 23 (Second Edition) (Lagasse et al. 2001) to solve for the median stone diameter:

$$d_{50} = \frac{0.692(V_{des})^2}{(S_g - 1)2g} \quad (11.1)$$

where: d_{50} = Particle size for which 50% is finer by weight, ft (m)
 V_{des} = Design velocity for local conditions at the pier, ft/s (m/s)
 S_g = Specific gravity of riprap (usually taken as 2.65)
 g = Acceleration due to gravity, 32.2 ft/s² (9.81 m/s²)

Figure 1; FHWA HEC 23, p.DG11.6, Equation 11.1. Sizing Rock Riprap at Piers.

$$V_{des} = K_1 V_{max} \quad (11.3)$$

where: V_{des} = Local velocity at pier, ft/s (m/s)
 K_1 = Shape factor equal to 1.5 for round-nose piers or 1.7 for square-faced piers

Figure 2; FHWA HEC 23, p.DG11.6, Equation 11.3. Calculation the Design Velocity, V_{des} , at the Bridge.

$$n = K_u D_x^{1/6}$$

V.T. Chow (1959)

$K_u = 0.0417$ (D_{50} in meters)
 $K_u = 0.0342$ (D_{50} in feet)

Anderson et al. (1970)

$K_u = 0.0482$ (D_{50} in meters)
 $K_u = 0.0395$ (D_{50} in feet)

Figure 3; FHWA HDS 6, p.3-30. Manning's roughness coefficient for riprap.

In the proposed version of the model, the channel was assumed to be excavated to the top of the spread footing of the outer columns at each bent, for Piers 3 through 9, but not below the top of the footings, lined with Class 8 filter fabric (Caltrans Standard Specifications 72-2.02B) and topped with a 1'-10" thick layer of No. 1 Backing Class RSP placed per Method B. The RSP layer shall extend 7'-0" from the upstream edge of deck, and 5'-0" from the downstream edge of deck, for a total width of approximately 56 feet. Beyond the 56-foot length of the RSP mat, both upstream and downstream edges shall be embedded a minimum of 4'-6" below the top of the RSP. The upstream edge uses a 3'-0" thick vertical key while the downstream edge will be constructed as a buried toe using the Edge Embedment Detail, Figure 4, as a guide. The Edge Embedment Detail is based on the Caltrans Highway Design Manual (2010) Figure 873.3C (p.870-27), with compacted backfill placed to original grade at both the upstream and downstream edges. The excavation for the upstream vertical key shall be a minimum of 5'-0" away from the spread footings.

Twin low flow channels were designed for Span 4 and Span 5, so that the thalweg of the RSP will be below the existing thalweg for fish passage, while retaining the 1'-10" layer thickness. In the transverse direction, relative to the channel, the excavation of these low flow channels will extend from the Span 4 side of both Bent 4 and Bent 5 as well as the Span 5 side of Bent 5 and Bent 6. The excavation will start at the top of the spread footings, and cut in at a 2:1 (H:V) slope extending to an elevation that is at least 2'-6" below the existing channel invert, which will allow the top of the 1'-10" thick RSP layer to be placed a minimum of 8" below the existing minimum channel invert. Determination of the existing invert shall be made by a Caltrans engineer in the field at the time of excavation. At the time of this report, the minimum invert elevation is estimated to be around 62.3 feet (NAVD 88) at the upstream end of the RSP placement. The top of the RSP within this low flow channel should have a uniform gradient under the structure terminating with a finished invert at or slightly below the existing invert at the downstream end of the RSP mat, not including the edge embedment. The limits of the low flow channel should also extend from the upstream edge to the downstream edge of the RSP placement, approximately 56 feet in length along the invert, not including the embedded toe or the transition from and to the existing channel. Both upstream and downstream edges shall be embedded a minimum of 4'-6" below the finished grade of the RSP including the low flow channel..

Edge Embedment Detail for the Downstream Edge

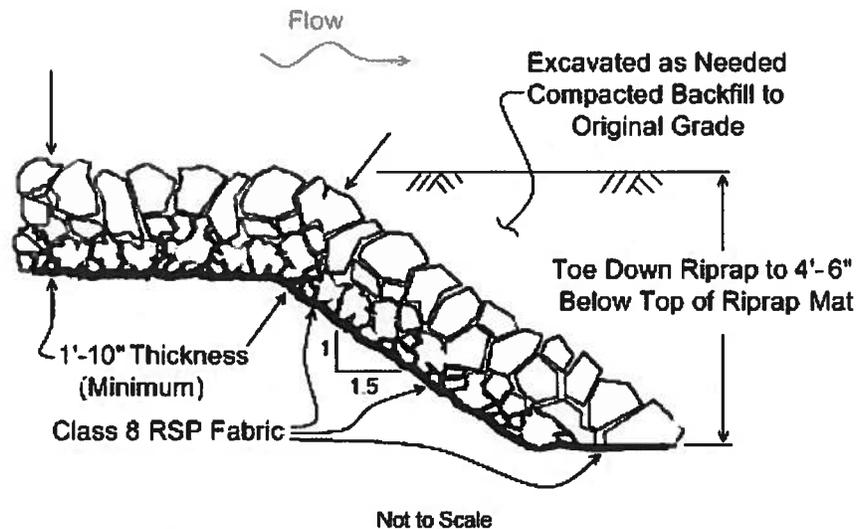


Figure 4: Edge Embedment Detail for the downstream end of riprap layer.

Based on the HEC-RAS model using the 9,000 cfs design capacity, the increase is limited to 0.08 foot in the immediate vicinity of the bridge.

Model Discrepancies:

There were numerous elevation discrepancies found between the Caltrans HEC-RAS model used for this report and the "Common Feature" model ("SacRiverBasinModel.prj") that the Army Corps had developed. The "Common Feature" model was also used as the basis for the 2011 FEMA FIS model at the site. Channel invert elevations in the Caltrans model were up to 4 feet lower than similar elevations found in the "Common Feature" model. It was suggested that there may be an error in the vertical datum used by Caltrans. A comparison of "hard points" in the "Common Feature" model and both the Caltrans model and the Caltrans survey data indicated that the datums utilized were consistent between the two models. Some of the "hard points" compared included elevations along the top of the South Levee road and the soffit of the Route 65 structure.

While Caltrans surveys were mostly recorded in 2011 (roadway and floodplain) and 2013 ("low-flow" channel), the "Common Feature" model relies on older data. It is not known when the "Common Feature" survey was recorded, but the HEC-RAS "plan" name was "Sac Basin 1997 Calibration_NAVD88" with a Geometry file that also appears to refer to 1997. It is also not known how the survey data was obtained for the "Common Feature" model, whether it was aerial, LiDAR, or ground crews. Caltrans initially used LiDAR data for outlying areas of the model, but due to standing water in the deeper incised channel, bathymetry was needed to properly model the reach. This "low-flow" channel surveying comprised about 2400 feet in length,

extending from about 1300 feet upstream of the Route 65 Bridge, to more than 1000 feet downstream.

It should also be noted that scour and channel degradation concerns were the impetus for this project and the mitigation work being proposed. This degradation of the channel could be part of the invert elevation discrepancies between the models. During a 2013 site inspection, it was observed that the footings of the UPRR Bridge were exposed and appeared to have been retrofitted with additional concrete as well as additional RSP placed around the footings in the main channel.

The October 2014 Caltrans model also incorporated the Oakley Lane Bridge which is located approximately 2800 feet downstream of the Route 65 structure. The data used to model Oakley lane was taken directly from the "Common Feature" model and placed within the Caltrans model at the appropriate location.

A comparison of existing and proposed configurations using the Caltrans model that incorporated the Oakley Lane Bridge, indicated the maximum water surface elevation increase of 0.07 feet occurs about 10 feet downstream of the Route 65 structure. There was a 0.02-foot increase upstream of the bridge and a 0.05-foot increase under the downstream side of the Route 65 Bridge. No other water surface increases were attributed to the proposed channel configuration at the Route 65 Bridge.

Streambed:

The natural channel bed material consists of a mixture of some gravel, sandy silt, silty sand and sandy clay. This material is considered to be scourable.

Scour Analysis:

The addition of the RSP layer under the structure will render any potential local pier or contraction scour negligible. A comparison of historical records indicates that future degradation will be minimal at the site. Long term channel degradation is estimated at less than 2 feet.

Summary & Recommendations:

Below is a summary of key design parameters based on the hydrology and hydraulic analysis performed for this structure.

All elevations given are referenced to the data provided by Preliminary Investigations-North, using the NAVD 88 vertical datum.

Hydrologic Summary for Dry Creek Bridge, 16-0002			
Drainage Area: 103 mi ²			
Frequency	Design Flood	Base Flood	CVFPB & Army Corps
	50-year	100-year	Design Capacity
Discharge	9,110 cfs	10,100 cfs	9,000 cfs
Water Surface Elevation at Bridge	77.28 ft	77.67 ft	77.23 ft

Flood plain data are based upon information available when the plans were prepared and are shown to meet federal requirements. The accuracy of said information is not warranted by the State and interested or affected parties should make their own investigation.

*Elevations based on the NAVD 1988 datum. Data for HEC-RAS model River Station 7641.0, approximately 0.5 ft upstream of the bridge.

Long Term Scour Depths, Dry Creek, Br. No. 16-0002		
Support	Degradation Scour Depth	Contraction Scour Depth
All	N/A	N/A

Scour Data (Elevation and Depth), Dry Creek, Br. No. 16-0002		
Support	Long Term Scour Elevation	Short Term (Local) Scour Depth
All	N/A	N/A

Scour depths are considered N/A (not applicable) due to the RSP placement.

Design Information		Existing (Pre-Construction)				Future (Post-Construction)				Δ Existing to Future	
Bridge No.	Design Flow cfs	Soffit Ft*	WSE Ft*	Velocity ft	Freeboard ft	Soffit Ft*	WSE Ft*	Velocity ft	Freeboard ft	Δ WSE ft	Δ Velocity fps
16-0002	9,000	77.64	77.27	4.10	0.37	77.64	77.23	3.77	0.41	-0.04	-0.33

*Elevations based on the NAVD 1988 datum. Data for HEC-RAS model River Station 7641.0, upstream from the bridge, for comparison purposes. The Proposed WSEL at RS 7641.0 was the highest at or adjacent to the bridge.

This report has been prepared under my direction as the professional engineer in responsible charge of the work, in accordance with the provisions of the Professional Engineers Act of the State of California.

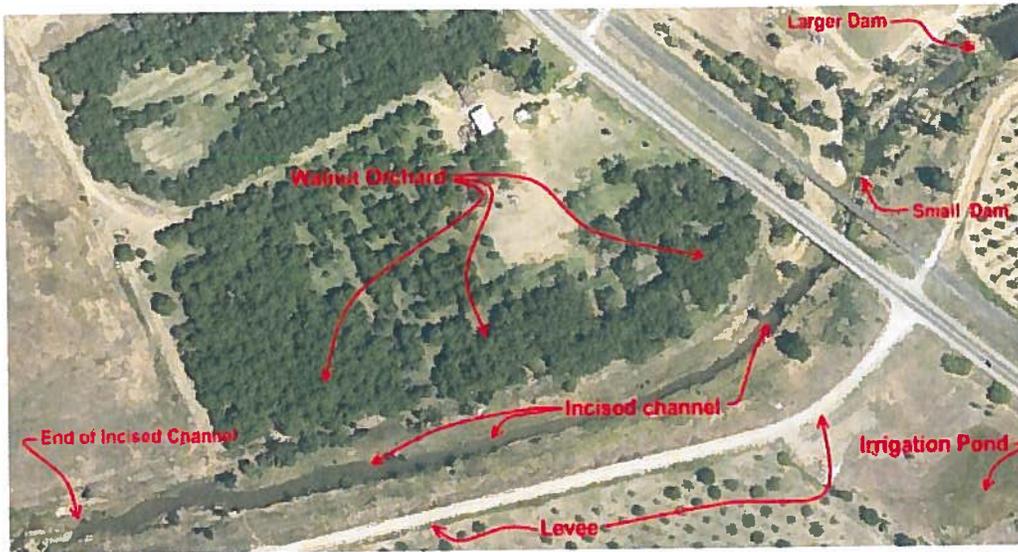


Figure 7: Aerial view of downstream floodplain. Note floodplain downstream of the bridge has few trees except for the walnut orchard on the northside.



Figure 8: Looking northwest, about 1100 feet upstream of bridge. Note narrow band of brush and trees on banks of pool. Smooth fields on far side.



Figure 9: Looking west, downstream from Abutment 11. Note Walnut orchard, widely spaced trees, smooth surface.



Figure 10: Looking east, about 300 feet downstream from bridge. Note incised channel, with few trees and brush along the bank.



Figure 11: Looking north west from Levee, about 250 feet south of bridge. Note incised channel, and sporadic brush and trees on bank. Walnut orchard on far side of channel. Smooth overbanks with some minor irregularities in foreground.



Figure 12: Looking north east at the downstream end of Bent 6 through Bent 10.

Profile Output Table - Standard Table 1														
File Options Std. Tables Locations Help														
HEC-RAS Location: User Defined Profile: DM1														
River	Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Cr. W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
					(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Dry Creek	Hwy 65	7700												
					Bridge									
							UPRR Bridge							
Dry Creek	Hwy 65	7672.8	O&M	Dry Ex w Oakley	9000.00	62.20	77.31		77.60	0.000480	5.72	2244.05	296.26	0.28
Dry Creek	Hwy 65	7672.8	O&M	Dry Prop w Oakly	9000.00	62.20	77.24		77.53	0.000513	5.52	2224.13	294.93	0.27
Water Surface Elevation decrease with proposed changes														
Dry Creek	Hwy 65	7659.405	O&M	Dry Ex w Oakley	9000.00	63.54	77.35	71.85	77.57	0.000421	4.41	2429.00	311.70	0.23
Dry Creek	Hwy 65	7659.405	O&M	Dry Prop w Oakly	9000.00	63.54	77.28	71.85	77.50	0.000433	4.46	2405.55	310.89	0.23
Dry Creek	Hwy 65	7650.0	O&M	Dry Ex w Oakley	9000.00	63.30	77.24		77.56	0.000518	5.15	2035.44	230.24	0.25
Dry Creek	Hwy 65	7650.0	O&M	Dry Prop w Oakly	9000.00	63.30	77.16		77.49	0.000532	5.20	2017.72	230.06	0.25
Dry Creek	Hwy 65	7647.5	O&M	Dry Ex w Oakley	9000.00	63.20	77.22		77.56	0.000467	5.33	2036.22	230.20	0.27
Dry Creek	Hwy 65	7647.5	O&M	Dry Prop w Oakly	9000.00	62.33	77.24		77.45	0.000315	3.71	2478.35	230.24	0.19
0.02 Increase														
Dry Creek	Hwy 65	7641.0	O&M	Dry Ex w Oakley	9000.00	63.29	77.27	70.06	77.53	0.000338	4.10	2237.80	230.32	0.22
Dry Creek	Hwy 65	7641.0	O&M	Dry Prop w Oakly	9000.00	62.33	77.23	68.76	77.45	0.000341	3.77	2423.83	230.22	0.20
Dry Creek	Hwy 65	7600												
					Bridge									
							Route 65							
Dry Creek	Hwy 65	7591.5	O&M	Dry Ex w Oakley	9000.00	62.33	77.07		77.43	0.000614	4.80	1889.89	199.13	0.26
Dry Creek	Hwy 65	7591.5	O&M	Dry Prop w Oakly	9000.00	62.33	77.11		77.37	0.000388	4.19	2211.56	199.31	0.21
0.04 Increase														
Dry Creek	Hwy 65	7587.5	O&M	Dry Ex w Oakley	9000.00	62.33	76.95		77.42	0.000762	6.39	1733.74	203.14	0.32
Dry Creek	Hwy 65	7587.5	O&M	Dry Prop w Oakly	9000.00	62.33	77.02		77.36	0.000430	4.75	1948.88	203.77	0.25
Maximum WSEL increase. 0.07 feet														
Dry Creek	Hwy 65	7502.9	O&M	Dry Ex w Oakley	9000.00	59.17	76.97		77.31	0.000770	6.16	2332.85	517.64	0.30
Dry Creek	Hwy 65	7502.9	O&M	Dry Prop w Oakly	9000.00	59.17	76.97		77.31	0.000791	6.24	2330.92	517.61	0.30
Dry Creek	Hwy 65	7387.391	O&M	Dry Ex w Oakley	9000.00	60.77	76.81	72.49	77.22	0.000670	6.27	2068.84	327.31	0.31
Dry Creek	Hwy 65	7387.391	O&M	Dry Prop w Oakly	9000.00	60.77	76.81	72.49	77.22	0.000678	6.31	2068.01	327.25	0.31
Dry Creek	Hwy 65	7118.208	O&M	Dry Ex w Oakley	9000.00	60.35	76.76	73.35	77.02	0.000526	5.38	2802.92	749.78	0.27
Dry Creek	Hwy 65	7118.208	O&M	Dry Prop w Oakly	9000.00	60.35	76.76	73.35	77.02	0.000526	5.38	2803.09	749.78	0.27
Dry Creek	Hwy 65	6673.264	O&M	Dry Ex w Oakley	9000.00	61.29	76.20	73.18	76.68	0.000974	7.13	1976.53	528.56	0.35
Dry Creek	Hwy 65	6673.264	O&M	Dry Prop w Oakly	9000.00	61.29	76.20	73.18	76.68	0.000973	7.13	1976.72	528.57	0.35
Dry Creek	Hwy 65	6264.564	O&M	Dry Ex w Oakley	9000.00	59.81	75.26	72.53	76.15	0.001520	9.52	1468.27	446.42	0.44
Dry Creek	Hwy 65	6264.564	O&M	Dry Prop w Oakly	9000.00	59.81	75.26	72.53	76.15	0.001520	9.52	1468.53	446.67	0.44
Dry Creek	Hwy 65	5834.842	O&M	Dry Ex w Oakley	9000.00	60.56	74.99	72.06	75.52	0.000997	6.96	2106.34	854.84	0.38
Dry Creek	Hwy 65	5834.842	O&M	Dry Prop w Oakly	9000.00	60.56	74.99	72.06	75.52	0.000996	6.96	2107.22	854.92	0.38
Dry Creek	Hwy 65	5308.270	O&M	Dry Ex w Oakley	9000.00	58.61	74.46	71.04	75.00	0.000953	7.82	1882.35	560.19	0.36
Dry Creek	Hwy 65	5308.270	O&M	Dry Prop w Oakly	9000.00	58.61	74.47	71.04	75.00	0.000952	7.82	1883.15	560.27	0.36
Dry Creek	Hwy 65	4854	O&M	Dry Ex w Oakley	9000.00	63.37	73.09	71.04	74.22	0.003178	8.53	1054.52	194.40	0.65
Dry Creek	Hwy 65	4854	O&M	Dry Prop w Oakly	9000.00	63.37	73.09	71.04	74.22	0.003174	8.53	1055.12	194.48	0.65
Dry Creek	Hwy 65	4832												
					Bridge									
							Oakley Lane							
Dry Creek	Hwy 65	4803	O&M	Dry Ex w Oakley	9000.00	63.35	72.19		73.82	0.004393	10.24	882.54	180.66	0.76
Dry Creek	Hwy 65	4803	O&M	Dry Prop w Oakly	9000.00	63.35	72.19		73.82	0.004398	10.25	878.28	156.35	0.76
No change in Water Surface Elevation between Existing and Proposed configurations														
Dry Creek	Hwy 65	4678.325	O&M	Dry Ex w Oakley	9000.00	58.50	73.16	70.79	73.26	0.000302	4.11	4278.33	1505.12	0.20
Dry Creek	Hwy 65	4678.325	O&M	Dry Prop w Oakly	9000.00	58.50	73.16	70.79	73.26	0.000302	4.11	4278.33	1505.12	0.20

Figure 13: HEC RAS Output Table for Existing & Proposed Configurations, using Design Capacity of 9,000 cfs.

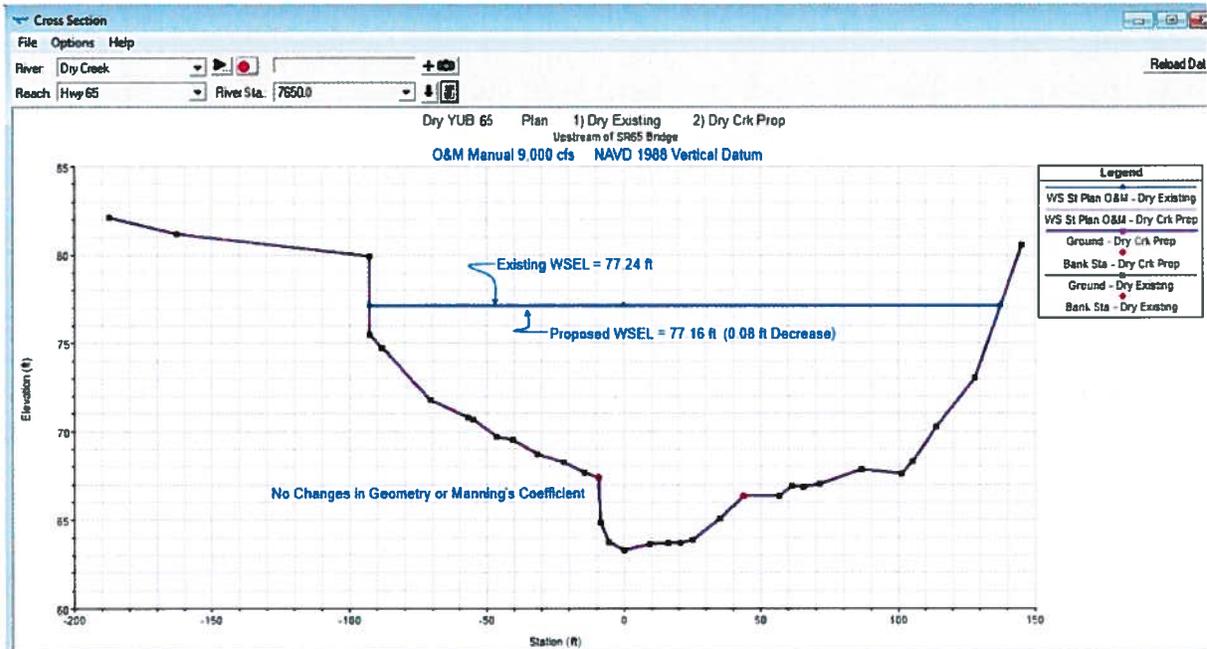


Figure 14: HEC RAS Cross Section RS 7650 showing Existing & Proposed Geometry, Using 9,000 cfs.

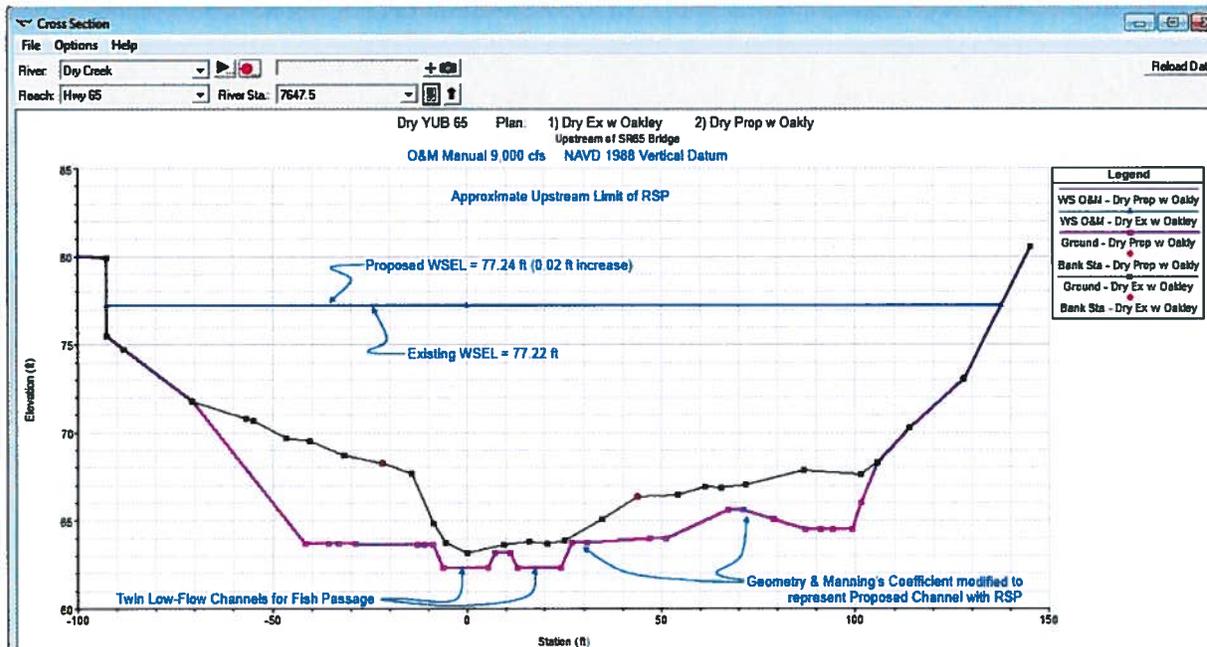


Figure 15: HEC RAS Cross Section RS 7647.5 showing Existing & Proposed Geometry, Using 9,000 cfs.

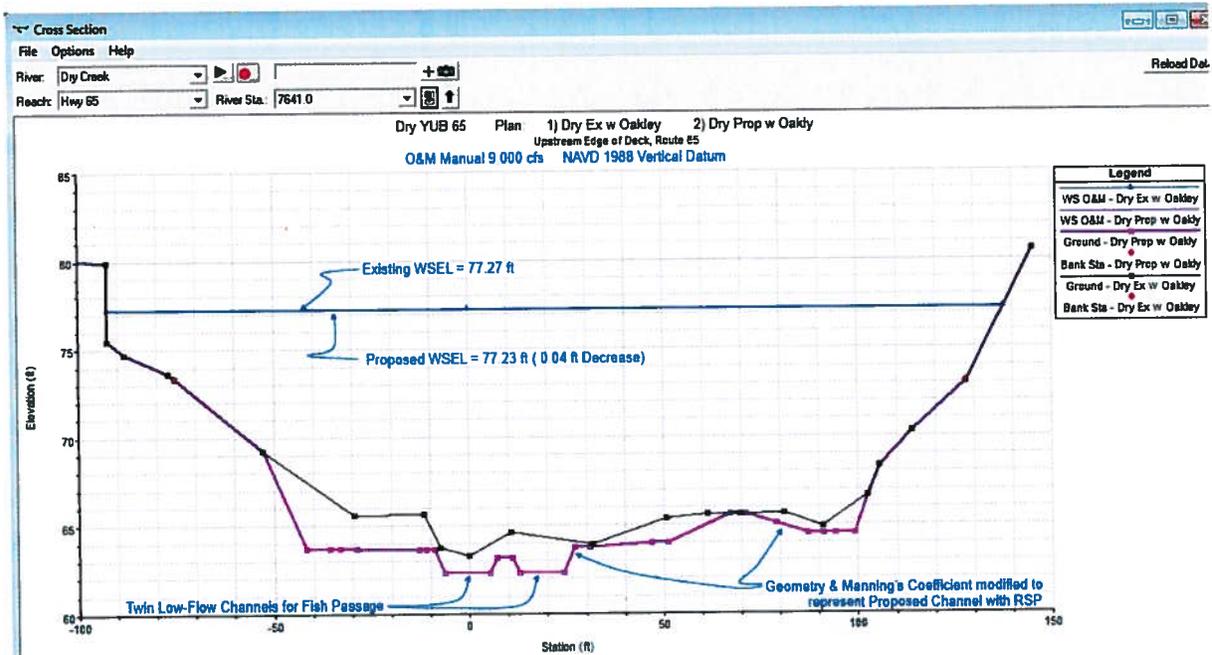


Figure 16: HEC RAS Cross Section RS 7641 showing Existing & Proposed Geometry, Using 9,000 cfs.

Bridge Output				
File Type Options Help				
River:	Dry Creek	Profile:	O&M	
Reach:	Hwy 65	RS:	7600	Plan: Dry Ex w Oakley
Plan: Dry Ex w Oakley Dry Creek Hwy 65 RS: 7600 Profile: O&M				
E.G. US. (ft)	77.53	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	77.27	E.G. Elev (ft)	77.53	77.45
Q Total (cfs)	9000.00	W.S. Elev (ft)	77.21	77.03
Q Bridge (cfs)	9000.00	Crit W.S. (ft)	70.32	71.03
Q Weir (cfs)		Max Chl Dpth (ft)	13.92	14.68
Weir Sta Lft (ft)		Vel Total (ft/s)	4.51	5.17
Weir Sta Rgt (ft)		Flow Area (sq ft)	1994.57	1739.40
Weir Submerg		Froude # Chl	0.21	0.29
Weir Max Depth (ft)		Specif Force (cu ft)	12494.82	10751.23
Min El Weir Flow (ft)	80.25	Hydr Depth (ft)	10.59	9.38
Min El Prs (ft)	77.64	W.P. Total (ft)	393.31	360.44
Delta EG (ft)	0.10	Conv. Total (cfs)	273474.8	201235.1
Delta WS (ft)	0.20	Top Width (ft)	188.30	185.43
BR Open Area (sq ft)	1852.59	Frctn Loss (ft)	0.06	0.00
BR Open Vel (ft/s)	5.17	C & E Loss (ft)	0.01	0.02
Coef of Q		Shear Total (lb/sq ft)	0.34	0.57
Br Sel Method	Energy only	Power Total (lb/ft s)	-187.52	-81.64

Figure 17: HEC RAS Bridge Output Table for the Existing configuration, Using 9,000 cfs.

Bridge Output				
File Type Options Help				
River:	Dry Creek	Profile:	O&M	
Reach:	Hwy 65	RS:	7600	Plan: Dry Prop w Oakly
Plan: Dry Prop w Oakly Dry Creek Hwy 65 RS: 7600 Profile: O&M				
E.G. US. (ft)	77.45	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	77.23	E.G. Elev (ft)	77.45	77.39
Q Total (cfs)	9000.00	W.S. Elev (ft)	77.18	77.08
Q Bridge (cfs)	9000.00	Crit W.S. (ft)	69.00	68.98
Q Weir (cfs)		Max Chl Dpth (ft)	14.85	14.75
Weir Sta Lft (ft)		Vel Total (ft/s)	4.14	4.40
Weir Sta Rgt (ft)		Flow Area (sq ft)	2173.03	2046.38
Weir Submerg		Froude # Chl	0.19	0.22
Weir Max Depth (ft)		Specif Force (cu ft)	14639.81	14100.50
Min El Weir Flow (ft)	80.31	Hydr Depth (ft)	11.54	11.02
Min El Pts (ft)	77.64	W.P. Total (ft)	410.26	406.98
Delta EG (ft)	0.08	Conv. Total (cfs)	266536.9	243129.5
Delta WS (ft)	0.13	Top Width (ft)	188.30	185.70
BR Open Area (sq ft)	2150.02	Frctn Loss (ft)	0.06	0.00
BR Open Vel (ft/s)	4.40	C & E Loss (ft)	0.00	0.01
Coef of Q		Shear Total (lb/sq ft)	0.38	0.43
Br Sel Method	Energy only	Power Total (lb/ft s)	-162.75	-81.64

Figure 18: HEC RAS Bridge Output Table for the Proposed configuration, Using 9,000 cfs.

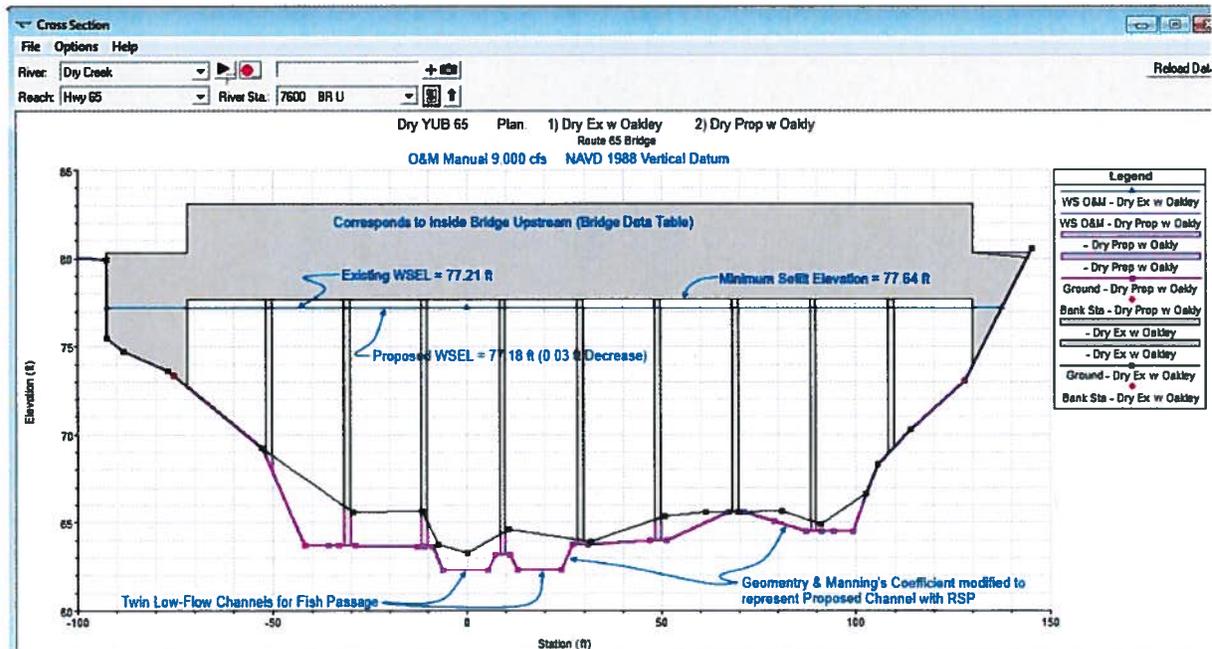


Figure 19: HEC RAS Cross Section Bridge 7600 Upstream, showing Existing & Proposed Geometry, Using 9,000 cfs.

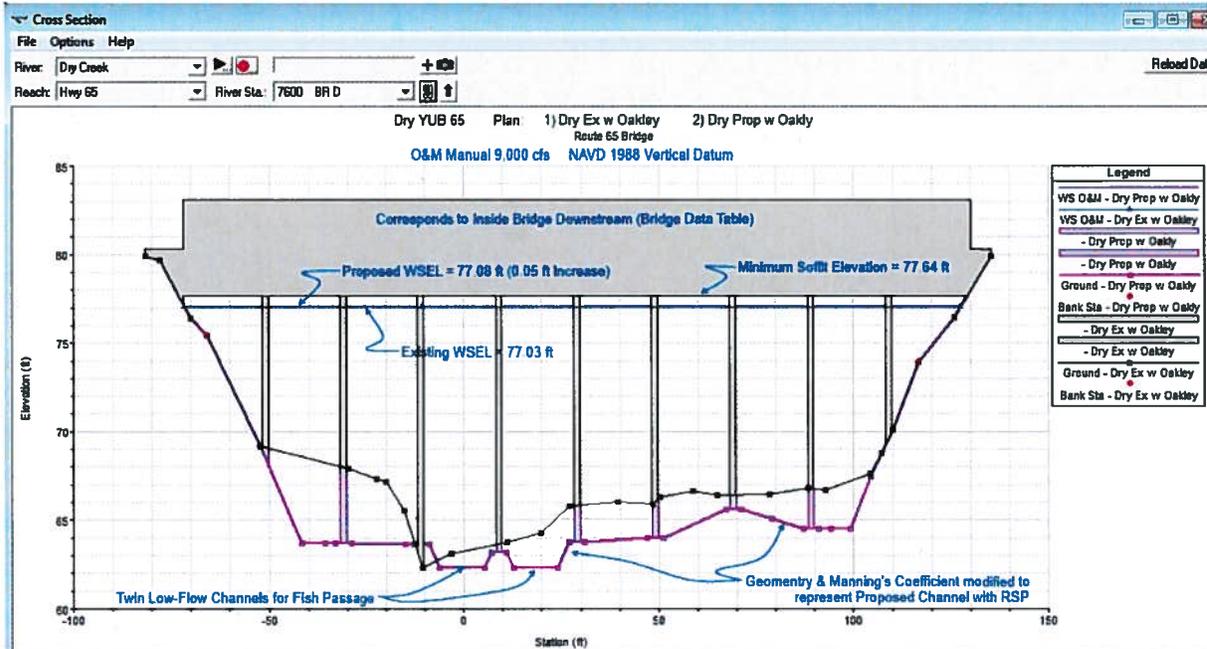


Figure 20: HEC RAS Cross Section Bridge 7600 Downstream, showing Existing & Proposed Geometry, Using 9,000 cfs.

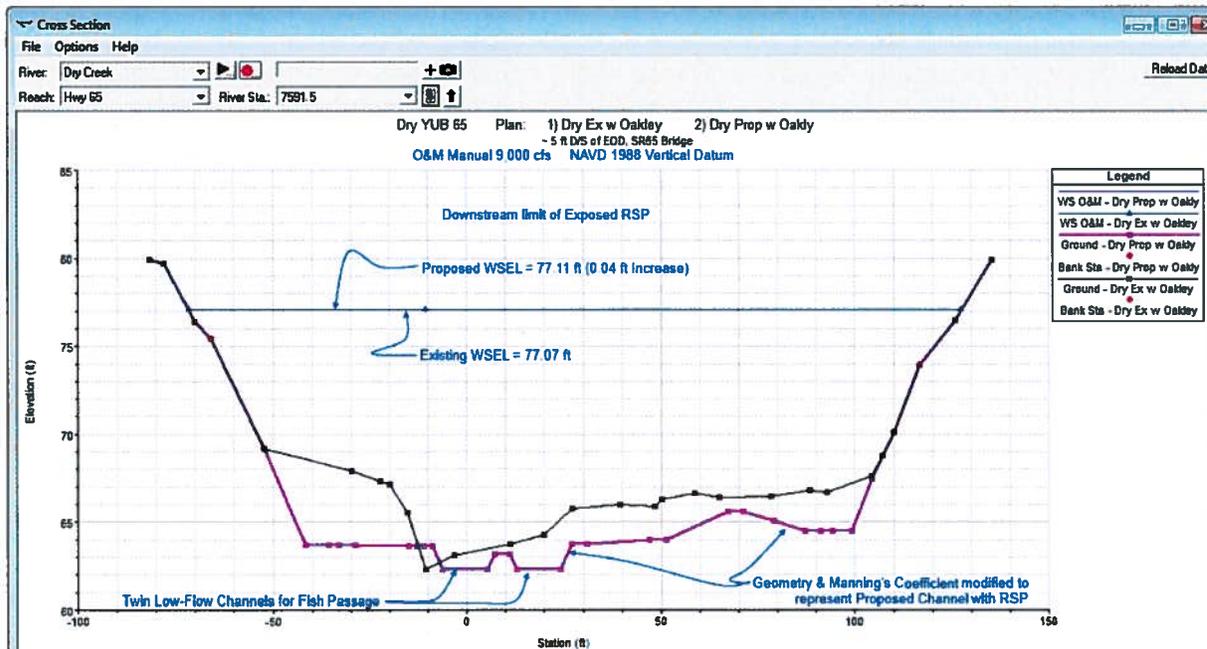


Figure 21: HEC RAS Cross Section RS 7591.5, showing Existing & Proposed Geometry, Using 9,000 cfs.

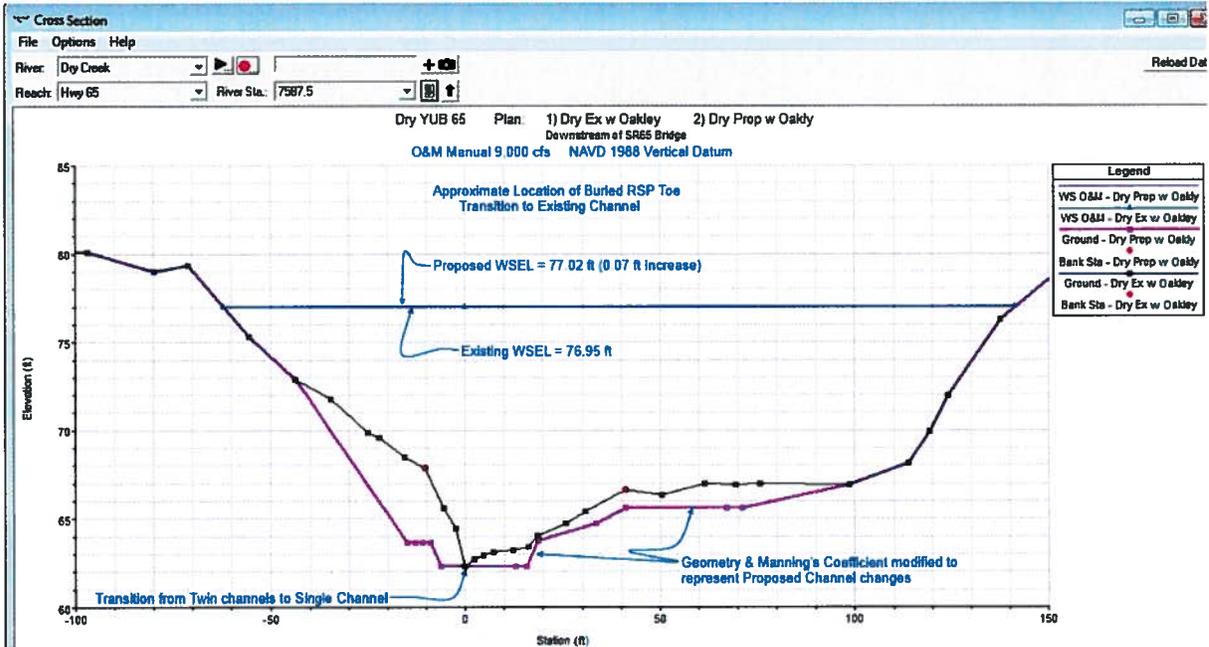


Figure 22: HEC RAS Cross Section RS 7587.5, showing Existing & Proposed Geometry, Using 9,000 cfs.

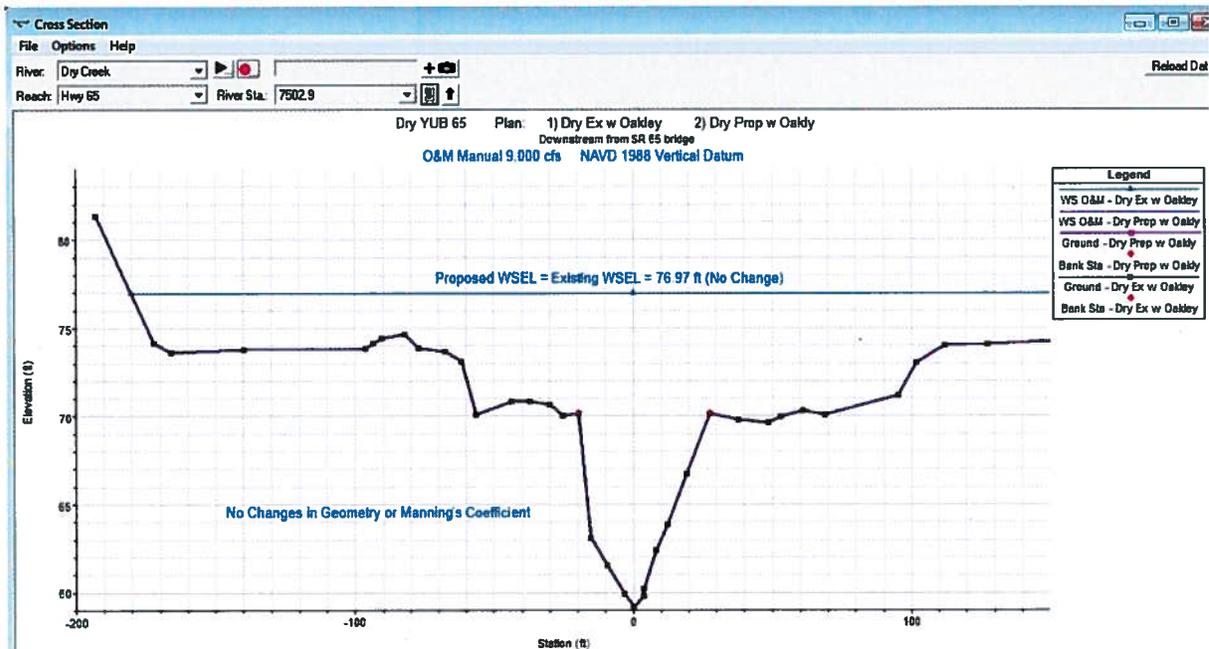


Figure 23: HEC RAS Cross Section RS 7502.5, showing Existing & Proposed Geometry, Using 9,000 cfs.

Manning's Roughness Coefficient Estimates

USGS WSP 2339 and Chow (1959)

Main Channel, Downstream

- $n_b = 0.020$ Chow Table 5.5, for "Earth" channel
- $n_1 = 0.004$ Channel irregularity, "minor" with slightly eroded side slopes (main channel)
- $n_2 = 0.001$ Variation in the cross-section, "Alternating Occasionally", but minor.
- $n_3 = 0.002$ Obstructions, "Negligible", occupying less than 5% of the cross-sectional area.
- $n_{4\text{ main}} = 0.005$ Vegetation, short grasses and minimal vegetation in main channel.
- $n_{4\text{ bank}} = 0.020$ Vegetation for the banks. A few trees and brush generally confined to the bank
- $m = 1.0$ Meandering, minor
- $n_{\text{main}} = 0.032$ Compare to Chow's Table 5-6, section C₆₄, n-value ranges from 0.022 to 0.033.
- $n_{\text{bank}} = 0.047$ Chow's Table 5-6, C₆₃, n-value ranges from 0.040 to 0.080 ("normal" = 0.050).
Brush, weeds and trees not consistent throughout the reach, minimal.

Floodplain, Downstream

- $n_b = 0.020$ Chow Table 5.5, for "Earth" channel
- $n_1 = 0.004$ Irregularity, "minor" with some dips, undulations and erosion at tributaries.
- $n_2 = 0.000$ Variation in the cross-section, minimal to negligible.
- $n_3 = 0.002$ Obstructions, "Negligible", occupying less than 5% of the cross-sectional area.
- $N_{3\text{ orch}} = 0.004$ Obstructions, walnut orchard, negligible but slightly higher than outside of orchard.
- $n_4 = 0.004$ Vegetation for the banks. A few trees and brush generally confined to the bank
- $m = 1.0$ Meandering, minor
- $n_{fp} = 0.030$ Chow's Table 5-6, section D-2₂₂, n-value ranges from 0.030 to 0.050, lighter than section D-2₂₁ or D-2₂₃.
- $n_{\text{walnut}} = 0.030$ Chow's Table 5-6, D-2₂₂, n-value ranges from 0.030 to 0.050 ("normal" = 0.040).
"Cleared land with tree stumps, no sprouts", Orchard is clean and smooth, short cut grass, no brush, with walnut branches above flood stage, trees widely spaced.

Figure 24: Estimate of Manning's roughness coefficient for downstream reach using USGS WSP 2339 & Chow (1959).