

<b>Date:</b>	May 1, 2018
<b>To:</b>	Fred Pezeshk, Lake County Department of Public Works
<b>CC:</b>	
<b>From:</b>	Carolyn Davis, Quincy Engineering
<b>Subject:</b>	Water Quality Discussion and Dewatering Plan for the County of First Street Bridge Replacement over Clover Creek Project [BRLO-5914(079)]

## Introduction

The County of Lake (County), in cooperation with the California Department of Transportation – District 1 (Caltrans), is proposing to replace the First Street Bridge over Clover Creek, 0.1 miles east of Main Street in the community of Upper Lake, Lake County, California. The existing bridge span is 39-feet long by 31.5-feet wide.

The new structure being considered as the preferred replacement alternative would be a three cell (12'X8' cells) cast-in-place reinforced concrete box culvert. The culvert is preferred because it would perform better due to weak liquefiable soils at the site. It is also less expensive than a bridge alternative. The new structure will be 44'-10" wide to accommodate standard widths for lanes, shoulders, sidewalks and barrier rail. The road will be closed during construction, with traffic detoured onto existing roads. The new structure will be constructed on the existing alignment, resulting in a minimal impact to the stream.

## Water Quality and Dewatering Plan

Construction of the bridge will occur during summer months when the water volumes are lowest and storm flows are not likely to occur in Clover Creek. If there is water expected in the channel at the time of construction, a stream diversion will be required through the project site (from upstream of the new bridge construction to downstream of the low water crossing) for the duration of the box culvert construction. Falsework may also be placed in the creek bed, and diverting the channel will

facilitate placement/removal of the falsework.

Stream flows will be temporarily diverted around the work site, either through gravity flow culverts or with a combination of a pump and hoses.

Flow in Clover Creek is controlled upstream with a diversion structure. Most of the flow is diverted to Middle Creek as a flood control measure. The diversion system will be sized to accommodate the flow that would be anticipated during the construction months based on statistical rainfall data generated from the watershed below the diversion structure. If the County is required to maintain a minimum amount of flow from the diversion structure, this would also be considered for sizing the diversion system.

Upon award of the contract, the Contractor must submit plans for the creek diversion and, depending on the size of the area disturbed, either a Water Pollution Control Plan (WPCP) or a Storm Water Pollution Prevention Plan (SWPPP). The submittals shall be reviewed and approved by the County and the Resident Engineer. No work that has the potential to cause creek flow disturbance or decrease water quality will be performed until the diversion plans and WPCP or SWPPP have been approved by both the Engineer and the County. The creek diversion must comply with the contractor's WPCP or SWPPP. The contractor will also be responsible for water quality per the Regional Water Quality Control Board (RWQCB) 401 permit.

The proposed project will involve permanent modification of Clover Creek, by removing the existing concrete abutments and by re-grading the end slopes (up and down stream of the box culvert). The existing bridge will be completely removed before construction of the new structure begins. It is proposed to construct the bottom mat of the box culvert a minimum of 2' below the existing stream flowline to provide a natural bottom. Dewatering of groundwater for construction may be required. If water is encountered during excavation within Clover Creek, it would be dewatered in accordance with the approved WPCP or SWPPP and RWQCB 401 permit. During bridge construction, access to the creek (diverted/dewatered area) will be required to remove the existing abutments, to construct

the new abutments, and to place rock slope protection.

### **Avoidance and Minimization Measures Included in the Project**

Measures to minimize water quality impacts, as necessary, would be implemented in conformance with Section 13 of Caltrans Standard Specifications - Water Pollution Control and Caltrans Construction Manual, Section 4-21 - Erosion Control. The project would minimize the mobilization of sediments during construction by diverting the channel through the construction site and by dewatering. The project would implement Caltrans Best Management Practices (BMPs) for erosion control.

1. Any concrete structures (such as headwalls or abutments) below the tops of banks shall be placed in tightly sealed forms and shall not come in contact with surface waters until the concrete has fully cured.
2. No substances toxic to aquatic life shall be discharged into Clover Creek (e.g., diesel fuel, oil, hydraulic fluid, run-off from curing concrete, etc.).
3. ESA fencing would be placed along the upstream and downstream limits of the work area to prevent construction equipment and/or construction personnel from inadvertently impacting areas of the streambed outside the designated work area.
4. If hydroseed mixes are used to stabilize disturbed areas, such mixes shall not contain fertilizers.
5. If feasible, equipment maintenance and fueling areas shall be located at least 50 feet away from the creek bank. Fueling must be behind a containment barrier that shall prevent any spilled or leaked fuel from running into the creek. All equipment servicing must occur within designated areas. All motorized equipment used during construction or demolition activities shall be checked for oil, fuel, and coolant leaks prior to initiating work. Any equipment found to be leaking fluids shall not be used in or around aquatic habitat features in order to minimize the chances of contaminating the habitat.
6. The project's contractor shall prepare an emergency response and cleanup plan prior to beginning work at the site. The plan shall detail the methods to be used to contain and cleanup

spills of petroleum products or other hazardous materials in the work area.

7. The project design and water quality plan will comply with required work as stated in the Natural Environment Study to avoid and minimize impacts to Clear Lake hitch and Western pond turtle.

## Permits

The following permits will be required for construction of the project:

- US Army Corps of Engineers Section 404 Permit (Nationwide)
- State Water Resources Control Board Section 401 Water Quality Certification
- California Department of Fish and Wildlife (CDFW) 1602 Streambed Alteration Agreement
- State Water Resources Control Board NPDES Construction General Permit and MS4 permit

Each of these permits regulate water quality, and the project will conform to all requirements included in the permits. If water is flowing in the creek at the time of construction, the CDFW may require an incidental take permit for Clear Lake hitch, a California Threatened Species. Impacts to the hitch can be avoided if the creek bed is dry during construction.

## Wetlands and Other Waters Coordination Summary

Waters of the U.S. are present within the biological study area. A wetland delineation will be submitted to the Corps of Engineers for a Jurisdictional Determination and Nationwide Permit. No wetlands will be impacted by this project.

## Conclusion

The proposed project would result in the replacement of an existing bridge with a new box culvert. The project has been designed to minimize water quality impacts.