

# Final Report

Pinole Creek Fish Passage Improvements Project  
P1530411 00

Prepared for US Army Corps of Engineers  
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Prepared by  
Sandra Guldman  
Toyon Environmental Consultants, Inc.

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# 1. Overview

The project site is located in a portion of Pinole Creek that passes beneath I-80 via dual concrete box culvert bays. The box culvert bays are each 12 feet wide by 10 feet tall and approximately 320 feet in length. Concrete aprons at the inlet and outlet increase the overall length of the concrete culvert system to 393 feet.

Downstream (north) of the culverts, the site is bordered to the east by AMF Pinole Valley Lanes (a bowling alley) and a Caltrans right-of-way, and to the west by an undeveloped hillside containing non-native grass species. The culvert outlet discharges into a rock-lined trapezoidal flood control channel that is maintained by the Flood Control District. The creek banks downstream of the culverts are also in a highly altered condition, with the east creek bank having a moderate slope and the west creek bank having a steep slope.

Upstream of the culvert, the channel is in a more natural condition, with a pool-riffle morphology and riparian vegetation canopy covering the active channel. This portion of the channel is highly entrenched and both commercial and residential development is located along the top of bank. The middle portion of the Pinole Creek watershed is located in the protected EBMUD watershed and most of the upper third is in the Briones Agricultural Preserve. Habitat assessments for steelhead and resident rainbow trout (*Oncorhynchus mykiss*) were conducted on Pinole Creek in June of 2009. Most of Pinole Creek's main stem is salmonid habitat, with the I-80 culverts the only significant barrier limiting access.

# 2. Work Accomplished and Timing

The project improves access to upstream spawning and rearing habitat by constructing a baffled fishway notch, training walls and a notched sill in the western culvert bay, and a roughened rock chute in the exiting flood control channel downstream of the culvert to raise water levels and improve fish access to the culvert. To protect the integrity of the culvert under Interstate 80, the work began in the middle of the culvert and then the upper section was done, and finally the lower section.

**Table 1: Work Accomplished**

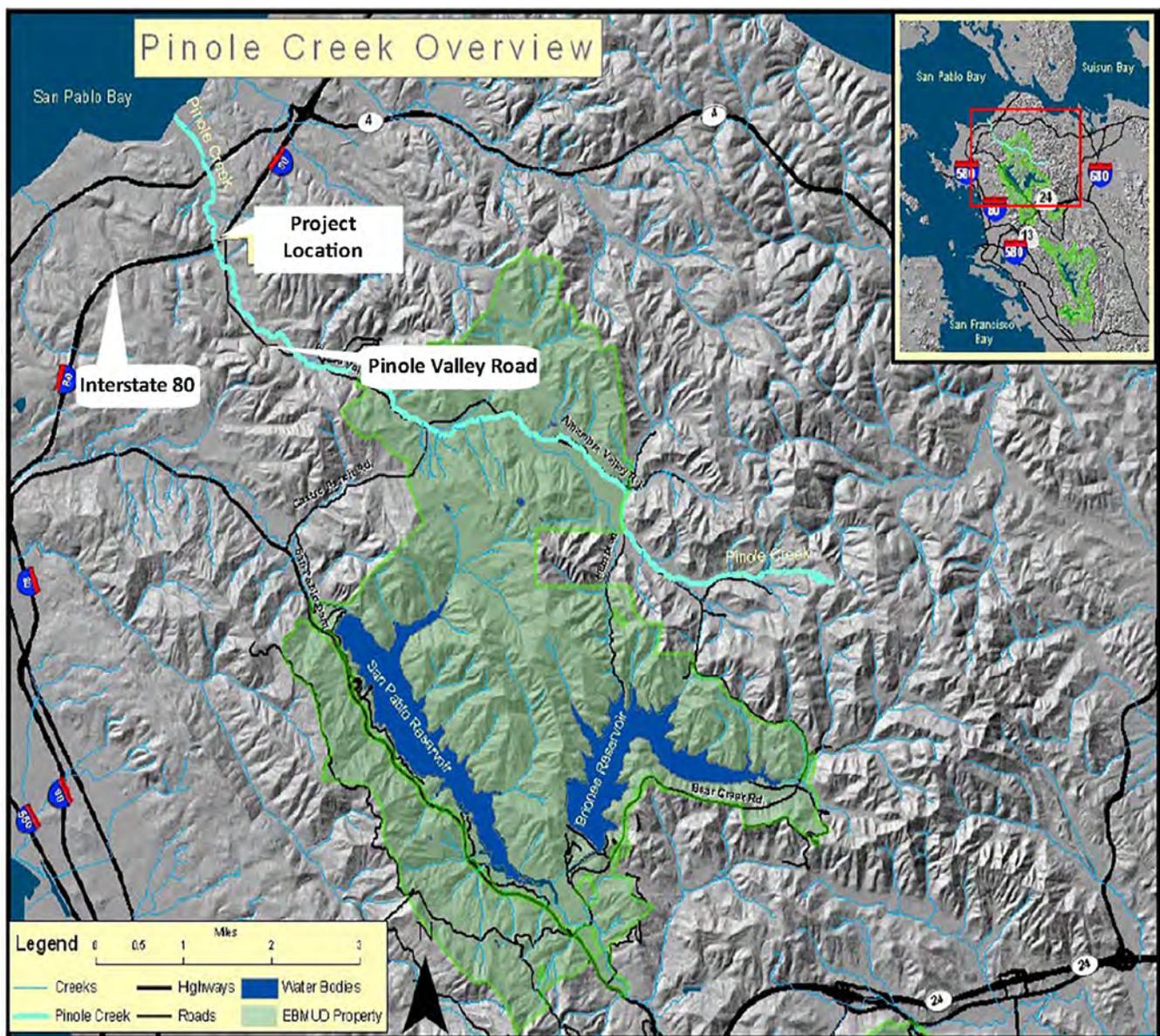
Date	Work Accomplished
7/20 – 9/2/2016	Construction of a 184-foot long concrete fishway notch through the 36-foot long inlet apron and within the upper 148-feet of the western culvert bay
7/20 – 8/15/2016	Formation and installation of 13 concrete angled fish baffles within the upstream most 125 of the fishway notch
7/29 - 8/1/2016	Construction of a 34-foot long concrete training wall on the inlet (upstream) apron to control flow distribution between the baffled and unbaffled culvert bays
8/26 – 9/2/2016	Construction of a 30-foot-long concrete training wall on the outlet (downstream) apron to control flow distribution between the baffled and unbaffled culvert bays and placement of a notched sill on the downstream end of the outlet apron to pond water within the lower half of the western culvert bay during low flows

continued

**Table 1: Work Accomplished (concluded)**

Date	Work Accomplished
8/29 - 9/22/2016	Construction of a 60-foot long roughened rock chute in the exiting flood control channel downstream of the culvert outlet pool to raise water levels and improve fish access to the baffled culvert
9/23 – 27/2016	Remove channel access road, restore flow to channel, hydroseed.
10/2016 – 9/2017	/negotiate with Flood Control District on location of sign; design sign; install sign by 9/30/2017

### 3. Location Map



Source: EBMUD 20140S14(modified March 29, 2017)

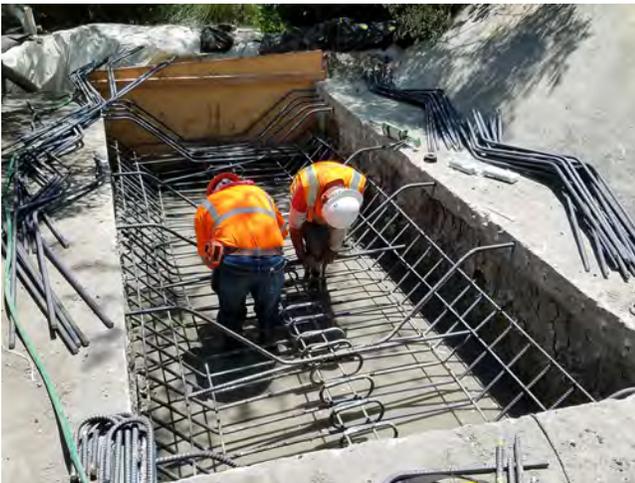
#### 4. Photos



Upstream entrance to box culverts (7/5/16)  
Viewed from left creek bed looking downstream



Cleaning up after sawcutting (7/20/16)  
Viewed looking downstream in left culvert



Installation of rebar (7/27/16)  
Viewed looking upstream in left culvert



Framing for sidewall (8/29/16)  
Viewed looking upstream



Preparation for rock placement (8/30/16)  
Viewed looking downstream



Placement of rock (9/13/16)  
Viewed looking downstream



Completed low-flow channel (8/30/16)  
Viewed looking upstream



Low-flow channel after removal of cofferdam (9/26/16)  
Viewed looking upstream



Completed in-stream channel (10/10/16)  
Viewed looking upstream in left culvert



Terminal weir (10/10/16)  
Viewed from right bank



Flow after heavy rainfall (12/5/16)  
Viewed looking upstream from right bank

All photos by Adrian Bartshire, Construction Manager for the Contra Costa RCD Pinole Creek Fish Passage Project, Nute Engineering, under contract to Michael Love Associates.