Central California Traction Railroad Crossing Fish Passage Improvement Project – Completion Report

Executive Summary

The Stockton East Water District (District) undertook work to improve anadromous fish passage at the Central California Traction Railroad Crossing on the Stockton Diverting Canal in the Calaveras River watershed. The Central California Traction Railroad Crossing Fish Passage Improvement Project (Project) is a collaborative effort of the District, the United States Fish and Wildlife Service (USFWS), and the California Department of Water Resources (DWR) to improve upstream and downstream fish passage at the Central California Traction Railroad Crossing (CCTRC) on the river mile 1 of the Stockton Diverting Canal. Alleviating fish passage issues at CCTRC provides improved access to optimal spawning and rearing habitat upstream for both Chinook salmon and Central Valley steelhead. Additionally, the Project provides a more favorable downstream migration corridor for juvenile salmonids.

The goal achieved by the project is improved fish passage through the CCTRC when flows in the Stockton Diverting Canal are below 1,000 cubic feet per second. The improvements constructed to assist with achieving the goal include the installation of a second flume with upstream wing walls, two new notches, and a roughened channel (rock ramp) downstream of the crossing. The Project was constructed as designed and construction was completed on October 31, 2019.

Reports

Final Evaluation Report

The project was completed as designed, accepted by the Central Valley Flood Protection Board, and final evaluation of the existing CCTRC bridge has determined that the project resulted in no structural impacts to the bridge. Since completion, the Calaveras River watershed has received little runoff, with flows passing through the site peaking around 10 cubic feet per second. Figure 1 and Figure 2 below show the site flowing approximately 35 cubic feet per second. At the peak flow rate to date, the improvements appear to be functioning as intended.

Figure 1. Upstream

Figure 2. Downstream

Collected Data

After project completion, a final evaluation of the CCTRC bridge was performed by Ridgeline Engineering. A copy of Ridgeline Engineering's final report is included as Attachment A of this report. All other collected data was previously submitted.

As-Built Drawings

The project was constructed as designed with no notable deviation. The construction plan set provided by the DWR may be used as the as-built plan set.

Geodetic Survey Information

Survey information was provided by Sousa Land Surveys in PDF format and submitted electronically on December 13, 2019, to the DWR as Attachment B of this report.

Project Photos

All project photographs were uploaded to the District's cloud storage and the DWR was provided an access link on December 3, 2019.

Discussion of Problems

The District encountered several challenges throughout all phases of the Project. The first problem encountered was during the permitting stage, which subsequently led to a domino effect of problems during the later stages of the Project, such as construction scheduling. The Project also experienced problems with the construction equipment and theft.

The most arduous process of the Project was procurement of the required permits. Table 1 outlines the permits obtained for the Project, the application date, and the issuance date.

Agency	Permit	Application Date	Issuance Date
RWQCB	Section 401	04-15-13	08-06-18
CDFW	Section 1602	04-26-13	06-19-19
USACOE	Section 404	02-04-19	10-08-19
CVFPB	Encroachment	02-04-19	10-08-19
USACOE	Section 408	04-09-19	10-08-19

Table 1. Project Permits

The delays due to permitting were a result of slow regulatory agency processing and deferment of the USACOE permit applications by the District. For future projects, the District will apply for all permits early in the process and allow for a 12-18 month permit processing timeframe in the projects' schedule.

The Project was initially set for construction during the summer of 2018. Without having the necessary permits issues, the Project was postponed until the summer of 2019, with construction anticipated to commence upon receipt of required permits, but not later than mid-August. The permit delays resulted in several construction delays, with the construction commencement date being pushed back each time a regulatory agency could not meet their projected issuance date. To make up for lost time, the District contracted additional temporary labor resources, secured equipment prior to construction beginning, worked six days a week, and worked ten hour days. Although not recommended as a standard scheduling practice, the extra effort allowed the project to be completed on time.

The construction equipment was procured through a rental company before construction commenced to ensure the equipment was available. The equipment, consisting of two excavators, two loaders, one dozer, one backhoe, and one water truck was a mixture of old and new equipment. The District had several issues with breakdowns of the older excavators and a tire failure of a new loader. The downtime of excavators due to equipment failure was nearly significant enough to require replacement of the equipment; however the rental company provided prompt service to restore functionality of the machines. The excavators were also too light duty to move the large precast flume. The District rented a third excavator from a separate rental company for a short period to assist with the large precast flume installation.

The final issue with the Project was theft. The Project location was littered with transient inhabitants and provided little to no line of sight for law enforcement patrols. The District contracted with a security service company to provide continuous site security outside of the District's working hours. The security service prevented any major theft and vandalism, but inadvertently allowed for some minor theft to occur. Items stolen throughout the construction of the Project include a survey prism, two time lapse cameras, and several sheets of plywood. On future projects, the District would favor using a monitored security fencing service such as Electric Guard Dog.

Planned Progress

Line	Task	2009				2013				2014				2015				2016				2017				2018				2019			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	CEQA/NEPA																																
2	Grants																																
3	Design																																
4	Permitting																																
5	Contracting																																
6	Site Preparation																																
7	Construction																																
8	Project Close-Out																																

Actual Progress

Line	Task	2009				2013				2014				2015				2016				2017				2018				2019			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
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