

**M&T / Llano Seco Fish Screen Facility
Long-Term Protection Project**

October 26, 2011

Purpose of Meeting

Examination of Further Analysis of Workshop #5
Technical Team Recommended Alternatives

On October 26, 2011, the M&T/Llano Seco Fish Screen Facility Long-Term Protection Project will hold an informational meeting to discuss the results and findings of the following Technical Studies that were recommended by the project Technical Team and approved by the Steering Committee in Workshop #5 held on September 30, 2008:

Phase III Two-Dimensional Modeling of M&T/Llano Seco Pumping Plant Reach, Sacramento River, RM 192.5

Tetra Tech updated the existing Two-Dimensional Model (2-D) Model) of the M&T/Llano Seco reach with new bathymetry and merged the model with the Army Corps of Engineers Hamilton City “J Levee” Model to evaluate hydrodynamic and sediment transport conditions within the wider reach of the Sacramento River project area; and, to provide boundary conditions for the reformulated physical model.

The two-dimensional hydraulic investigations of the M&T/Llano Seco Pumping Plant reach of the Sacramento River were to meet the following specific objectives:

- (1) Investigate the hydraulic impacts, if any, of the upstream Hamilton City Setback Levee project on the existing M&T Pumps and at the relocated City of Chico wastewater outfall;
- (2) Evaluate the hydrodynamic conditions over a range of flows at two potential alternative pumping sites located 2,200 and 3,500 feet downstream, respectively from the existing pumping site;
- (3) Investigate the hydraulic impacts, if any, of the Hamilton City Setback Levee project on the potential long-term solution alternatives at the M&T Pumps and the City of Chico outfall, and conversely, investigate the long-term solution alternatives impacts, if any, on the Hamilton City Setback Levee project; and
- (4) Investigate the hydrodynamic impacts of locating a gravel stockpile on the west overbank opposite the M&T Pumps and to investigate the mobility of the sediments in the stockpile.

Physical Model – Colorado State University Hydrology Lab

Colorado State University Hydrology Lab formulated an existing physical model to evaluate hydraulic conditions and long-term sedimentation patterns near the current M&T/Llano Seco pump intake location and two alternative relocation sites (approx. 2,200 feet and 3,500 feet downstream of the current pump intake) across a variety of discharges and river configurations. Workshop #5 recommendations to investigate the two above-described relocation alternatives for the pump/intake were outside the footprint of the existing physical model, and thus the model required reformulation to encompass the new

alternatives. The physical model was reformulated with the current topography and bathymetry of the river determined by new hydrographic surveys.

The following three (3) channel configurations were also modeled: (1) existing channel conditions; (2) current conditions with the inclusion of a gravel dredge material stockpile on the west bank; and, (3) realignment of a section of the east bank. The physical model included a rigid west bank as the previously migrating west bank has been stabilized by revetment.

West Bank Stabilization Project

Report on performance and condition of the temporary bank protection placed at River Mile 193R on the U.S. Fish & Wildlife Service Capay Unit to prevent further river migration and preserve options for the long-term solution to protect the M&T/Llano Seco pump intake and fish screens.