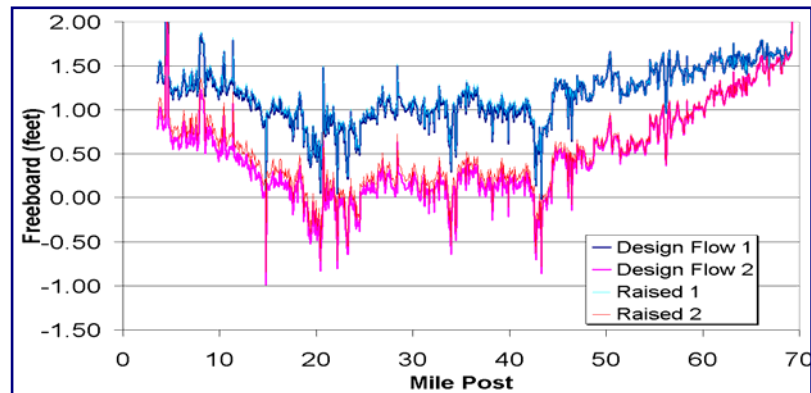


## Delta-Mendota Canal

Working with Jonas & Associates, WEST Consultants, Inc. was contracted by the U.S. Bureau of Reclamation (USBR) to develop a numerical hydraulic model of the Delta-Mendota Canal near Tracy, CA, in the southern part of the Central Valley. The flow capacity of the Delta-Mendota Canal from the San Francisco Bay Delta to the O'Neill Forebay is restricted due to the original telescoping design flow requirements, freeboard, and changes in water delivery patterns, and possible ground subsidence over the past 50 years. The Bureau of Reclamation is considering various alternatives including the construction of an Intertie between the DMC and the California Aqueduct. To determine the feasibility of these alternatives, the capacity of the existing conveyance system and the areas where conveyance restrictions occur needs to be determined. A one-dimensional hydraulic model, HEC-RAS, was development and calibrated to the upper 70 miles of the canal. The model has about 1,000 cross sections, and includes 13 check structures, 9 inverted siphons or inline culverts, and numerous bridges and other crossings. As the canal was designed and built in sections using "template" cross sections for each reach, a spreadsheet was developed to automatically create the HEC-RAS geometry file from the template sections and individual station invert elevations. The model was calibrated to nearly 600 observed water surface elevations surveyed during August and September 2003. The calibration was complicated because of the extremely flat slope of the canal (0.00005) and water surface, which meant that small changes in flow (which may occur daily) resulted in significant changes in water surface elevations.



### **Project Owner:**

U.S. Bureau of Reclamation  
Central Pacific Division  
Sacramento, CA  
Contact: Mark Jonas (Jonas & Associates)  
(925) 374-0020

### **Completion Date:**

Ongoing