Fish Passage Improvement Project at Red Bluff Diversion Dam

Tehama-Colusa Canal Authority, Red Bluff, California

The Red Bluff Diversion Dam (RBDD), located on the Sacramento River, features a series of 11 large gates that, when lowered (gates in), form Lake Red Bluff and provide for gravity diversion of irrigation water from the Sacramento River into the Tehama-Colusa and Corning Canals. Although the RBDD was initially operated to provide continuous diversion, the annual gates-in diversion period has been reduced over the years to less than three months to improve fish passage of several salmonid species and now green sturgeon, recently listed under the Endangered Species Act.

The construction of a screened pumping plant will improve fish passage conditions while ensuring continued water deliveries to 150,000 acres of high-value cropland. New features of the project will include construction of a flat-plate fish screen, intake channel, 2,500 cubic feet per second (cfs) capacity pumping plant, access bridge and discharge conduit to divert water from the Sacramento River into the Tehama-Colusa and Corning Canals.

The RBDD and the Tehama-Colusa Canal were built in the early 1960s by the Bureau of Reclamation, which owns the facilities. The Tehama-Colusa Canal Authority operates and maintains the delivery system, providing water to its 17 member water districts throughout a four county service area, providing an economic benefit of over one billion dollars to the region annually.
Project Features
Joint design, permitting and construction management effort by Reclamation, CH2M HILL, and NewFields
Total project cost estimated at $230 million
Project was awarded $109.8 million of American Recovery and Reinvestment Act stimulus funding through Reclamation for Project construction
Second largest diversion on the Sacramento River
1,118-foot-long flat-plate fish screen structure with 60 screen bays, 7 fish refuge bays, 4 automated travelling screen cleaning mechanisms, and sediment removal jetting system
Pumping plant with 2,000-cfs initial capacity, expandable to 2,500 cfs
Forebay allows sediments to settle before water enters pumping plant
Open channel and siphon convey water from pumping plant across Red Bank Creek to settling basin that feeds the T-C Canal and Corning Canal
660-foot-long access bridge across Red Bank Creek allows access to all Project facilities
Automated control and monitoring systems

Project Participants
United States Department of the Interior, Bureau of Reclamation
Donald R. Glaser, Regional Director
Brian L. Person, Northern California Area Office Manager

Tehama-Colusa Canal Authority
Kenneth LaGrande, Chairman, Board of Directors
Jeffrey P. Sutton, General Manager

Design and Construction Engineering
Bureau of Reclamation
CH2M HILL, Inc.

Permitting Consultant
NewFields

Key Participating Resource Agencies
United States Fish and Wildlife Service
NOAA – Fisheries
California Department of Fish and Game
California Department of Water Resources
California Regional Water Quality Control Board

Project Highlights and Benefits
• Improved fish protection and passage past the RBDD for migrating fish
• More flexible and reliable irrigation water supply and delivery infrastructure
• No interruptions to water deliveries during construction
• Minimal disturbances to Sacramento River water quality and aquatic ecosystems during construction