

The Contra Costa Water District (CCWD) serves water to approximately 500,000 people throughout north, central and eastern Contra Costa County. Formed in 1936 to provide water for irrigation and industry, CCWD is now one of the largest urban water districts in California and a leader in drinking-water treatment technology and source water protection.

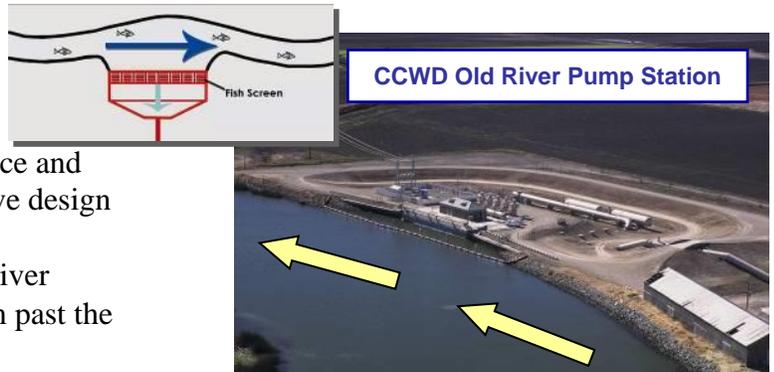
The mission of the Contra Costa Water District is **to strategically provide a reliable supply of high quality water at the lowest cost possible, in an environmentally responsible manner.**

CCWD relies on the Delta for 100% of our water supply, from both Central Valley Project (CVP) contract deliveries and diversions under CCWD's own water rights. Although a CVP contractor, CCWD does not receive any water from the large CVP export pumps in the south Delta. Instead, CCWD relies on diversions from four intakes placed throughout the western, central, and southern Delta. All four intakes have positive barrier fish screens to minimize direct impacts to fish. Furthermore, the redundancy in diversion facilities and use of local storage allow CCWD to provide additional benefits by adjusting the timing and location of diversion to benefit sensitive fish species.

## State-of-the-Art Positive Barrier Fish Screens

CCWD's intakes on Old River and Victoria Canal have positive barrier fish screens positioned on the side of the river channel. The National Marine Fisheries Service approved the screen design as required by the United States Fish and Wildlife Service and California Department of Fish and Wildlife. Protective design characteristics include:

- Intake and screen built along the side of the river
- River flows parallel to screens; fish can swim past the screens
- Fine Screen mesh: maximum of 3/32<sup>nd</sup> of an inch
- Low approach velocity (toward pumps) ~ 0.2 feet per second; high sweeping velocity (past pumps) ~ 1 feet per second



For comparison, the existing export facilities have much larger pumps at the end of channels, resulting in:

- Flow directly into the screens; creating the need for fish handling
- High approach velocity; no sweeping velocity
- Higher fish losses



## Operational Adaptations

CCWD's Los Vaqueros Reservoir provides water supply reliability for droughts and emergencies and allows for flexibility in timing of Delta diversions to meet CCWD's water quality goals and protect sensitive species in the Delta. By meeting customer demand with water stored in Los Vaqueros, CCWD is able to adapt our operations and reduce Delta diversions during sensitive fish periods.

- CCWD ceases diversions for 30 days in spring of each year.
- CCWD further reduces diversions for additional 45 to 60 days each year (total of 75 to 90 days of diversion reductions).
- Timing of diversion curtailments is flexible; default periods are adjusted by fisheries agencies when warranted.

## Monitoring

CCWD conducts regular monitoring to evaluate the performance of the fish screens and reports this information along with water quality and diversion information to the fishery agencies.

- Field data and research indicate screen and operations are highly efficient in protecting aquatic species.
- In over 16 years of operation since the construction of the Los Vaqueros Reservoir and Old River fish screens, CCWD has diverted over one million acre-feet of water from the Delta, yet CCWD has caught zero adult smelt and only 13 juvenile or larvae smelt at our intakes. For comparison, from 1997 to 2010, approximately one-half million adult and juvenile delta smelt have been caught at other south Delta diversions.

## Conservation Efforts

CCWD has a successful, ongoing conservation program, implementing a variety of programs to achieve long-term water savings, including education, technical advice, rebates and incentives. In the last twenty years, CCWD's demands have decreased 15 percent (from 140,000 acre-feet per year to less than 120,000 acre-feet per year in a normal year) despite a 40 percent increase in population. Recent economic conditions and ongoing conservation efforts have further reduced CCWD's demands to approximately 100,000 acre-feet per year. Water savings are on track to meet the conservation goal of 20% reduction in water use by the year 2020, which was enacted into California law in 2009.

In addition, the Central Contra Costa Sanitary District and Delta Diablo Sanitation District deliver approximately 10,000 acre-feet per year of recycled water within CCWD's service area, nearly 10% of CCWD's overall water demand. Reducing diversions through conservation and recycling also has a benefit for Delta fisheries.