



**PRUNUSKE CHATHAM, INC.**

## **MIRABEL FISH SCREEN RECONFIGURATION PROJECT, 2009**

*Client: Sonoma County Water Agency*

*Contact: Matt Vail, 707-526-5370*

The Sonoma County Water Agency (SCWA) manages the diversion of the Russian River at Mirabel as a critical water supply component for providing high-quality drinking water to over 600,000 people in Sonoma and northern Marin Counties. The Russian River Biological Opinion issued by National Marine Fisheries Service (NMFS) indicates that the fish screening facilities at the Mirabel diversion perform less than adequately for full protection of fish and downstream migration. PCI prepared a **feasibility analysis and alternatives study report** that presents results of PCI's assessment of potential solutions and provides recommendations.



PCI gathered technical data of existing conditions and developed alternative schematic designs for a new fish screen and an associated fishway. During conceptual planning, a **Technical Advisory Committee (TAC)** was formed with representatives from NMFS, the California Department of Fish and Game, and SCWA technical support personnel. With the project objectives in mind, the TAC reviewed the design alternatives and helped guide the conceptual designs toward a preferred alternative.



Technical services provided by PCI included **collection of existing channel and site topographic data**, preparation of **base maps, hydrology and hydraulics** review of the project site, preparation of **project alternatives**, and **technical design of the preferred concept alternative**. The components of this design include a new intake with an inclined flat plate fish screen system, an oversized screen for increased bypass flow control and capacity, and a bypass fishway in the form of a vertical slot fish ladder.

The conceptual plan can be used as a basis to complete a more detailed design. **Benefits** of reconfiguring the existing fish screen and pumping facility **include a reduction in fish mortality rates** as a result of pumping operations, a **significant improvement in downstream fish migration rates**, a **reduction in bypass flow rate fluctuations** as a result of the existing inflatable dam, and **increased water diversion ability during periods of summer low flow**.