March 2026

FREEMAN DIVERSION
Improved Denil Project

Overview



The Freeman Diversion on the Santa Clara River allows United Water Conservation District (United Water) to capture and store water for Ventura County communities. To support fish migration, the diversion has long included a Denil fish ladder: a channel-based structure that gives fish a manageable current to pass through the diversion upstream and downstream. The existing ladder works, passes fish, and is storm proven, but like all infrastructure there is opportunity for improvement.

United Water is proposing to upgrade the existing Denil ladder with a series of targeted enhancements to the fish passage system. These include redesigned entry and exit gates, resized ladder plates, the addition of a smaller gate within the roller gate and an auxiliary water system size increase to enhance attraction flows, modernized fish screens, an upgraded water delivery system, and an expanded fish relocation facility. Together, these changes are designed to make the ladder work better across a wider range of river conditions, reduce maintenance demands, and meet current federal fish passage standards, all while minimizing construction impacts.

Estimated construction cost is $52 million, of which $23 million is already secured through grant funding.

BENEFITS: The upgraded facility delivers meaningful gains for both fish and operations.

- Better fish access across a wider range of river conditions, including higher flows when water is abundant and fish are on the move
- Stronger performance through storms and high-flow events that can knock out other types of fish passage facilities
- Increased attraction flows, encouraging additional fish passage
- Reduced turbulence at key entry points, exit pathways, and turning pools within the ladder, making it easier for fish to navigate the ladder
- Longer usable periods during low-water conditions, giving fish more time to find refuge as the river recedes
- Five times greater capacity at the fish relocation facility, handling flows up to 6 cfs
- More reliable fish screens that sit on a curb above the floor of the screen bay to stay operational with the ingestion of bedload into the system
- Meets federal fish passage standards (NMFS 2022) and the objectives of the expert Fish Panel (VFDFPP 2010)

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PROGRESS

Design work is well underway:

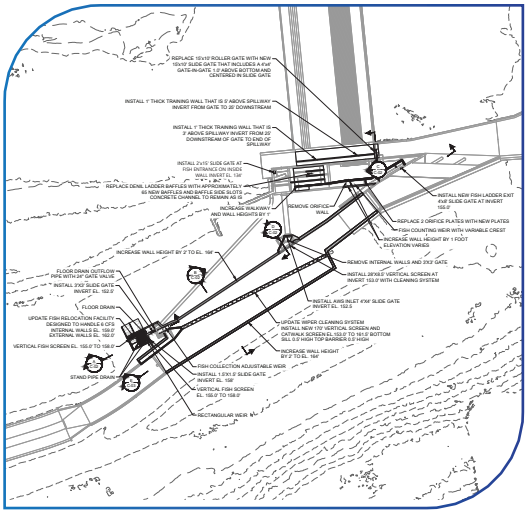
- 30% design completed ***February 2026***
- 60% design on track ***August 2026***

Construction is planned over two consecutive dry seasons, keeping in-river work to a minimum and avoiding disruption to fish during critical migration periods.

KEY CONSIDERATIONS: A few factors worth keeping in mind as the project moves forward.

- The project increases the maximum water diversion rate from 375 cfs to 540 cfs, capturing more water during very high flow events while ensuring ample bypass flows remain available for fish
- The existing Denil structure serves as the foundation of the project, reducing risk and construction complexity compared to building something new
- Since the Denil structure is off-river, the project has a minimal footprint without significant habitat or species impacts from construction
- Funding gaps remain: the $23 million in grants covers roughly 44% of estimated costs, and United Water continues to pursue additional sources
- Coordination with regulatory agencies and fish experts remains ongoing throughout design and permitting

The Better Option



The Improved Denil isn't just the better option, it's the smarter one. Compared to the Hardened Ramp alternative, it achieves the required fish passage objective at roughly 17% of the cost. It requires far less in-river construction, meaning ***less habitat disturbance, less risk to fish during the build, and a smaller overall footprint.***

The Denil design has a demonstrated track record of withstanding storm flows that have destroyed other local ladder designs and would likely render the unproven Hardened Ramp concept inoperable. The Hardened Ramp would cost significantly more, disturb more, and deliver negligible added benefit for fish. The Improved Denil offers ***a timely, optimized fish passage solution at a fraction of the cost.***

United Water CONSERVATION DISTRICT
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