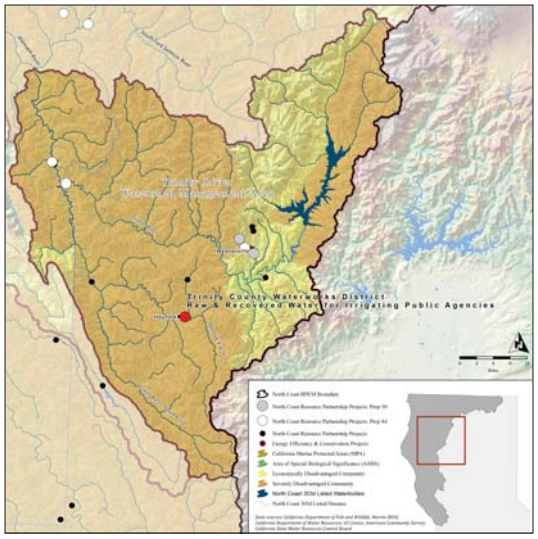
Raw and Recovered Water for Irrigating Public Agencies

TRINITY COUNTY WATERWORKS DISTRICT #1



STATEMENT OF THE PROBLEM

During summer months, irrigation use in Hayfork increases, requiring the water treatment plant to operate at 85–90% capacity. Use of treated drinking water for irrigation increased operational costs and restricted the District's ability to serve new customers. Additionally, several large users of irrigation water pumped directly from Hayfork Creek, impacting creek flow during dry summer months.

PROJECT GOALS

Short-term Goals:

- Lower demand for potable water use in irrigation in Hayfork Valley
- Reuse normally wasted filter backwash water

Long-term Goals:

- Cost-effectively solve irrigation needs of facilities using large amounts of irrigation water
- Add to the life expectancy of the current water plant
- Increase summer flows in Hayfork Creek
- Stable water supply near Hayfork airport for fire suppression activities

THE SOLUTION

The water treatment plant used nearly 150,000 gallons of water per day (gpd) to backwash the filtering system, which treated nearly 1.2 million gpd for the Town of Hayfork. The project recovered this backwash water to provide to large irrigation users who previously purchased potable water for irrigation. Pipeline and meters have been installed, with some using the system while others are first making needed conversions to onsite plumbing.

PROJECT IMPLEMENTATION AND ACCOMPLISHMENTS

A separate tie-in to the District's raw water source was constructed and new metered pipeline was installed. Six hundred feet of pipe and a control system was installed to feed raw-water from the holding pond to the new recycled pipeline to augment the recycled water supply. Fourteen thousand feet of pipeline was installed to distribute the recycled water and meters were installed at customer sites.

The backwash recycling portion of the project has been fully functional for several months and is functioning as designed. In July 2010, one customer alone had used about 2.3 million gallons of non-potable water.

COMPLETION DATE

July 2010

PROJECT BUDGET

IRWM funds:	*$ 990,347*
Leveraged funds:	*$ 45,000*
Total cost:	**$ 1,035,347**

BENEFITS

Economic

- The estimated economic benefit of increased instream flow is $3,846,430[1]
- Increase in amount of potable water available for new commercial and residential development

Water Quality

- Reduced power consumption and chemical costs for treatment of water formerly used for irrigation
- Instream temperature reduction due to increased flows
- Avoided costs of projects to improve water quality due to low flows

Habitat and Ecosystem Function

- Increased instream flows improve salmonid habitat

Cultural and Social

- Environmental justice: habitat improvement will ultimately assist in increasing salmonid populations in the Hayfork Creek/South Fork Trinity River system for harvest by tribes downstream

Jobs and Local Economy

- $1,035,347 was spent locally when possible, using local supplies and local labor, contributing toward State goals of environmental justice and social equity

NEXT STEPS & RECOMMENDATIONS

One customer was unable to connect to the recycled water pipes because it has a very old and difficult system of plumbing. Obtaining funding for a capital improvement project that will include new piping throughout that facility should be a high priority.

CONTACT
Craig J. Hair, Jr.
Trinity County Waterworks
Hayfork, CA
chair@hayfork.net

CITATIONS
[1] Brown, T.C. 2007. "The Marginal Economic Value of Streamflow from National Forests: Evidence from Western Water Markets." In: M. Furniss, C. Clifton, and K. Ronnenberg, eds. Advancing the Fundamental Sciences: Proceedings of the Forest Service National Earth Sciences Conference, San Diego, CA, 18-22 October 2004. Gen. Tech. Rep. PNW-GTR-689. Portland, OR: U.S. Forest Service, Pacific Northwest Research Station. p. 458-466

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