

Section 3

Water and Wastewater Energy Management Goals and Objectives for El Dorado County

Multiple public water purveyors treat and deliver water to customers in El Dorado County. Additional hydroelectric development within the County would provide many water and energy management benefits to those purveyors as well as to their customers. The potential benefits, as well as related interregional planning efforts and their goals and objectives, are explained below.

3.1 Hydroelectric Revenue Support of Water Systems and Operations

El Dorado Irrigation District (EID), Georgetown Divide Public Utility District (GDPUD), Grizzly Flats Community Services District (GFCSO), South Tahoe Public Utility District (STPUD), Tahoe City Public Utility District (TCPUD), and the U.S. Bureau of Reclamation make up the public water purveyors delivering water to customers in El Dorado County. These water purveyors have a continuing obligation to provide water to meet the demand in their service areas in an efficient and affordable manner. Each have long histories of providing high quality water in a fiscally responsible manner, and in the case of EID and GDPUD, also have a history of developing hydroelectric power.

Hydroelectric generation produces revenue to help offset purveyor operational costs. Revenue associated with hydroelectric facilities can not only be used to assist with financing hydroelectric facilities, but also for other purveyor project operations and infrastructure needs such as water conveyance, treatment facilities, other infrastructure, and operation and maintenance requirements associated with the treatment and delivery of water to customers.

3.2 Water Supply Reliability and Drought Protection for El Dorado County

In addition to revenues, hydroelectric facilities can contribute other benefits including increased water supply, drought protection, water supply reliability, and operational flexibility. Hydroelectric developments providing water storage can serve the dual purposes of providing water for hydroelectric generation as well as making storage available to provide consumptive water to purveyors, which is especially important during times of drought. Integrating hydroelectric developments into existing and planned water infrastructure can have added purposes such as dissipating energy to facility conveyance of water, especially in the topography seen in El Dorado County.

The future of hydroelectric development in El Dorado County will be affected by water supply policies and plans both within and beyond the County's boundaries. These include 'foreseeable future' water demands and deliveries per the County's 2004 General Plan, the need for drought protection for municipal, agricultural, public safety (fire fighting), and environmental beneficial uses, and Folsom Lake's storage constraints for flood control that also limit coldwater pool management and flows for the Lower

American River fisheries. Additional considerations include the State's renewed interest in a Delta Conveyance Facility (formerly known as a "Peripheral Canal") or other conveyance for San Joaquin Valley and southern California water deliveries, and more stringent drinking water quality standards that are making the treatment of Central Valley groundwater supplies more costly.

Several current planning and policy documents address the above issues including: the EDCWA's December 2007 Final Water Resources Development and Management Plan; the County purveyors' drought plans; the Cosumnes, American, Bear and Yuba Integrated Regional Water Management Plan (IRWMP); and, the American River Basin IRWMP. The goals and objectives of these and other purveyor- and stakeholder-driven planning efforts are addressed in the following sections.

3.3 Interregional Stakeholder Interest in Water Supply-Related Hydroelectric Development in El Dorado County

Benefits of hydroelectric development to water purveyors and the people of El Dorado County are not constrained to the County borders. Benefits can cross county boundaries and extend to the larger region. Hydroelectric development goals and objectives are consistent with many ongoing local, regional, and interregional planning initiatives. Some of these complementary interregional planning initiatives and their goals are identified below.

Mountain Counties Water Resources Association (MCWRA)

- Enhance Mountain County water resources
- Support MCWRA member project initiatives

Cosumnes American Bear Yuba (CABY)

- Achieve sustainable surface water supply
- Provide benefits from management of water resources, diversions and infrastructure
- Improve storage capacity
- Promote management strategies to alleviate potential impacts of drought and climate change
- Improve operation (reduce degradation and optimize benefits) of inter-basin transfers of water
- Maintain and promote recreational and environmental values associated with water infrastructure
- Evaluate and modify water infrastructure to improve efficiency
- Manage rivers, tributaries and infrastructure to provide flow regimes that benefit ecosystem function

Lower Cosumnes River Interests (including Southeast Sacramento County Agricultural Water Authority, The Nature Conservancy, the Sacramento County Water Agency and the Anadromous Fish Restoration Program)

- Contribute to the fish doubling goals of the Central Valley Project Improvement Act
- Provide fish habitat restoration via flow modification to improve passage and spawning habitat for fall-run chinook salmon
- Increase ground water recharge for improved management and opportunities for conjunctive use projects

SMUD

- Increase peaking electrical generation
- Increase renewable energy sources

PG&E

- Increase peaking electrical generation
- Increase renewable energy sources (20 percent RPS required by 2010 and 33 percent RPS required by 2020)

Sempra Energy Services (Project No. 184 Power Purchaser)

- Purchase additional dependable energy
- Increase renewable energy sources (20 percent RPS required by 2010 and 33 percent RPS required by 2020)

American River Basin IRWMP

- Increase water supply reliability
- Identify and develop specific integrated facilities and operations that will enhance regional and individual drinking water supply availability
- Identify, cultivate and promote multi-jurisdictional infrastructure and joint operational partnerships to enhance water supply system capacity/capability and reliability to the region
- Recognize the importance of reliable and affordable water supplies for disadvantaged, self-supplied and agricultural groundwater users, which are all noted as goals and objectives consistent with new hydroelectric development in El Dorado County

Sacramento Area Water Forum (Water Forum)

- Provide a reliable and safe water supply for the region's economic health
- Preserve the fishery, wildlife, recreational, and aesthetic values of the lower American River

State of California

- Provide water supply benefits
- Control flooding and integrate with water supply benefits
- Improve operational efficiency and reliability

- Redistribute water
- Augment water supplies
- Improve system flexibility
- Provide environmental benefits
- Increase energy generation benefits
- Reduce energy consumption
- Increase energy resources to operate the State Water Project more economically and reliably
- Reduce per capita water use by 20% by 2020 (per Governor Schwarzenegger, February 2008 Executive Order No. S-14-08)

Regional Environmental Interests [including State Water Resources Control Board (SWRCB), Regional Water Quality Control Board (RWQCB), California Department of Fish and Game (CDFG), U.S. Fish & Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA) Fisheries, Sierra Nevada Conservancy (SNC), American River Conservancy, Sierra Club, Sierra Nevada Alliance, Friends of the River, et al.]

- Augment South Fork and Lower American River summer/fall flows
- Reduce Folsom Reservoir pumping (protection of cold water pool and energy conservation)
- Increase retention and use of the Folsom cold water pool for the lower American River
- Reduce size and cost of Folsom Reservoir proposed temperature control device
- Augment North Fork and Lower Cosumnes River summer/fall flows
- Augment Cosumnes River basin ground water recharge

Outside County Water Purveyors

- Develop drought protection measures
- Increase water supply

3.4 Energy and Water Management Efficiency Improvements

The purveyors are continuously looking for methods to increase efficiency and reduce costs to capture, convey, treat and deliver water to customers. One significant cost, in the case of EID, is the energy required to pump water from Folsom Reservoir. EID currently has the right to pump about 10,000 acre-feet per year of water from Folsom Reservoir and is working toward securing the right to pump an additional 47,000 acre-feet per year. The energy cost to pump this amount of water and associated infrastructure requirements, such as the new temperature control device, is significant. There could be significant energy and cost savings found by developing methods to take advantage of gravity flow to reduce pumping requirements from Folsom Reservoir, especially when considering beneficial uses pending new water supplies. Projects like the Bass Lake/Folsom Pumped Storage Project could also offset pumping costs for supplies taken out of Folsom.

3.5 Other Benefits Afforded By Hydroelectric Development

The primary benefits of the development and operation of hydroelectric facilities are the energy production, associated revenue, and displacement of energy generated from fossil fuels. In addition, there are other important benefits to consider such as socioeconomic and non-use attributes of new hydroelectric development that are provided to the host community. These consequential types of benefits are important to local entities, such as El Dorado County, that are concerned with the community's overall wellbeing beyond that of just efficient and affordable water purveying.

Socioeconomic values occur both within and beyond project boundaries related to the multi-purpose functioning of hydroelectric projects and their associated facilities (such as water supply, flood control, and recreation when considering reservoirs). This type of benefit also includes the economic stimuli that projects provide to the host community during both construction and operation.

Non-use attributes are values that accrue to those entities that do not directly or currently participate, and might not intend to participate, in the benefits of the project. These can include the existence values (knowledge of the continued existence of a resource), heritage value (preserving the resource for future generations), and option value (having the option to use the resource in the future).