TUOLUMNE RIVER MANAGEMENT PLAN

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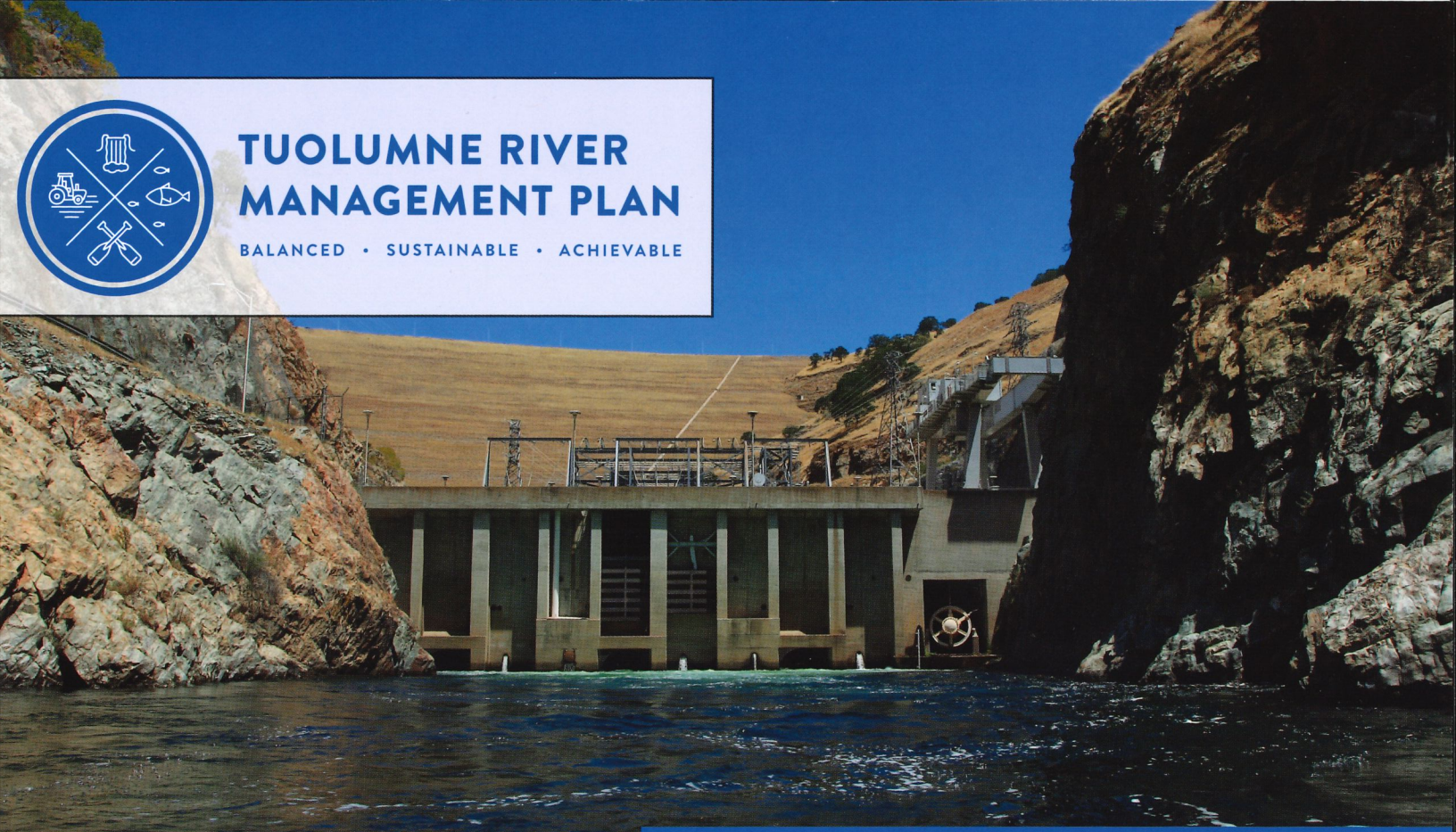

Don Pedro Powerhouse and Dam, built in 1971

Don Pedro Relicensing

The Don Pedro Hydroelectric Project, located on the Tuolumne River, is owned jointly by the Turlock Irrigation District (TID) and the Modesto Irrigation District (MID).

Construction on the new Don Pedro Dam began in fall 1967 and was completed in 1971 at a cost of $105 million. Built primarily for irrigation water storage, the reservoir has a capacity of 2,030,000 acre-feet and has many additional benefits including power generation, flood control and recreation.

The Project received its initial authorization for construction and operation from the Federal Energy Regulatory Commission (FERC). This initial license to operate the dam and hydroelectric powerhouse was issued for 50 years and expired on April 30, 2016.

The Districts intend to obtain a new license from FERC to continue operating and managing the Project. In 2011, TID and MID began the relicensing process and as part of this process, the Districts have hosted numerous public meetings, workshops and written comment opportunities for parties interested in the relicensing process. The Districts have conducted more than 35 studies including water quality, fish and wildlife, recreation, tribal resources, and many others. The purpose of the studies is to assess the effects of the project so a range of potential protection, mitigation and enhancement measures can be explored.

Based on the results of these studies, the Districts developed a comprehensive management plan for the Tuolumne River, known as the Tuolumne River Management Plan; this Plan is balanced, sustainable and achievable. Implementation of the Plan will lead to solutions that benefit all: the Tuolumne River, the Don Pedro Project, MID and TID, various stakeholder agencies and, most importantly, our MID and TID customers and their communities.

The Districts filed the Amended Final License Application with FERC on October 11, 2017.

Don Pedro Relicensing Timeline

Milestone	Date
Districts meet with public agencies and host three public information meetings to seek out additional sources of information, familiarize interested parties with the Don Pedro Project facilities, features, and operations, and review the Districts' relicensing plans and the overall relicensing schedule.	Fall 2010
Districts file Notice of Intent and Pre-Application Document - Approximate Pre-Application Document page total: Nearly 1,000 pages - After filing Pre-Application document, Districts host nine Resource Work Group meetings to solicit input on relicensing study plans.	February 11, 2011
FERC issues Scoping Document 1	April 8, 2011
FERC staff conducts site visit at the Don Pedro Project	May 10, 2011
FERC staff conducts public scoping meetings	May 11, 2011
Districts file Proposed Study Plan - Included 30 draft study plans - Between July 25 and October 24, Districts host 13 Resource Work Group meetings	July 25, 2011
FERC issues Scoping Document 2	July 25, 2011
Districts file Revised Study Plan - Included 35 study plans	November 22, 2011
FERC issues Study Plan Determination	December 22, 2011
Districts conduct a total of 17 workshops to provide an opportunity for Relicensing Participants and the Districts to discuss relevant data sources, methods of data use and development, and/or modeling parameters related to six resource studies.	2012, 2013, and 2014
Districts file Initial Study Report - Approximate page total: Over 6,000 pages	January 17, 2013
Districts hold Initial Study Report meeting	January 30 and 31, 2013
FERC issues Determination on Requests for Study Modifications and New Studies	May 21, 2013
Districts file Draft License Application	November 26, 2013
Districts file Updated Study Report	January 6, 2014
Districts hold Updated Study Report meeting	January 16, 2014
Districts file Final License Application	April 28, 2014
Districts file Amended Final License Application	October 11, 2017

Don Pedro Relicensing Studies

Study Name	Summary
Historic Properties Study	A study of how TID and MID's continued operation and maintenance of Don Pedro may affect historic properties listed or eligible for listing on the National Register of Historic Places.
Native American Traditional Cultural Properties Study	A study of how TID and MID's continued operation and maintenance of Don Pedro may affect Traditional Cultural Properties.
Recreation Facility and Public Accessibility Assessment	Description of existing and proposed measures and facilities to enhance recreational opportunities at the Project.
Whitewater Boating Take Out Improvement Feasibility	Feasibility assessment of physical improvements to the existing take out location for continued use by whitewater boaters on the upstream end of Don Pedro.
Lower Tuolumne River Boatable Flow Study	A study of how the District's continued operation and maintenance of Don Pedro may contribute to cumulative effects of non-motorized, recreational river boating opportunities in the Tuolumne River.
Special-Status Plants	Potential direct, indirect, or cumulative effects to special-status plants.
ESA- and CESA-Listed Plants Study	Potential effects to plants listed under the federal Endangered Species Act (ESA).
Wetland Habitats Associated with Don Pedro Reservoir	Effects of Project operations on hydrologic function in a manner that alters wetland habitats.
Noxious Weed Survey	Survey of Don Pedro operation, maintenance and recreation activities to assess the potential to spread noxious weeds.
ESA-Listed Wildlife- Valley Elderberry Longhorn Beetle	Project's potential effects on valley elderberry longhorn beetle populations.
Special-Status Amphibians and Aquatic Reptiles	Project's potential effects on special-status amphibians and aquatic turtles.
ESA-Listed Amphibians and Aquatic Reptiles	Project's potential effects on the California red-legged frog, a federally threatened species listed under the ESA.
ESA-Listed Amphibians - California Tiger Salamander	Project's potential effects on the terrestrial and aquatic habitat of the California tiger salamander, which is listed as threatened under ESA.
Special Status Bats	Project's potential effects on special-status bats.
Bald Eagle Study	Provide information regarding bald eagle activity at or adjacent to the Don Pedro reservoir, Project-affected stream reaches and related Project recreation facilities.
Water Quality Assessment	Project's potential direct, indirect or cumulative effects on water quality.
Project Operations/Water Balance Model	The potential effects on reservoir storage levels, releases and stream flow in the Tuolumne River through continued operation and maintenance of Don Pedro.
Reservoir Temperature Model	Potential effects continued operation and maintenance will have on temperature regime of waters in the Don Pedro Reservoir.
Spawning Gravel Study	Potential effects continued operation and maintenance may contribute to the supply and recruitment of spawning-sized gravels downstream of La Grange, which may potentially affect spawning gravel availability and use by Chinook salmon and O. mykiss.
Salmonid Populations Information Integration	Potential effects Project may contribute to habitat availability and production of in-river life stages of Central Valley fall run Chinook salmon and O. mykiss in the lower Tuolumne River.
Tuolumne River Chinook Salmon Population Model	Potential effects the Project may have to habitat availability and production of in-river life stages of Chinook salmon in the lower Tuolumne River.
Predation Study	Current effects of predation to rearing and out-migrating juvenile Chinook salmon and O. mykiss in the lower Tuolumne River.
Salmonid Redd Mapping	Potential cumulative effects to the supply and recruitment of spawning-sized gravels downstream of La Grange Dam, which may potentially affect spawning gravel availability and redistribution of Chinook salmon and O. mykiss.
Oncorhynchus mykiss Population Study	Potential effects the Project may have on habitat availability and production of in-river life stages of O. mykiss.
Chinook Salmon Otolith Study	Study identified the geographic origin and early life history rearing and emigration patterns of differing rearing environments and temperatures of Tuolumne River juvenile salmon.
Oncorhynchus mykiss Habitat Assessment	Potential cumulative effects on fish habitat in the lower Tuolumne River.
Fish Assemblage and Population Study	Fish assemblage and fish populations between Don Pedro Dam and La Grange Diversion Dam.
Swim Tunnel Study	Study of the thermal performance of juvenile O. mykiss in the lower Tuolumne River.
Socioeconomics Study	Potential socioeconomic effects of any proposed changes to Don Pedro operations that may be considered in the relicensing process.
Lower Tuolumne River Temperature Model	Study developed a river temperature model that simulates current and potential future water temperature conditions in the Tuolumne River.
Don Pedro Reservoir Fish Population Study	The goal of this study was to collect baseline information concerning the distribution and occurrence of fish resources in Don Pedro Reservoir.
Sturgeon	Potential effects on habitat availability for in-river life stages of green sturgeon in the lower Tuolumne River.
Riparian Information Synthesis	Identify and describe potential factors contributing to cumulative effects on riparian resources in the Tuolumne River downstream of the La Grange Dam.
O. mykiss Scale and Age	Estimate the age-at-length relationship of O. mykiss in the lower Tuolumne River.
Lower Tuolumne Instream Flow (IFIM)	Study to determine instream flows necessary to maximize fall-run Chinook salmon and O. mykiss production and survival throughout their various life stages.
Floodplain Hydraulic Assessment	Analysis of floodplain inundation and frequency for portions of the lower Tuolumne River.

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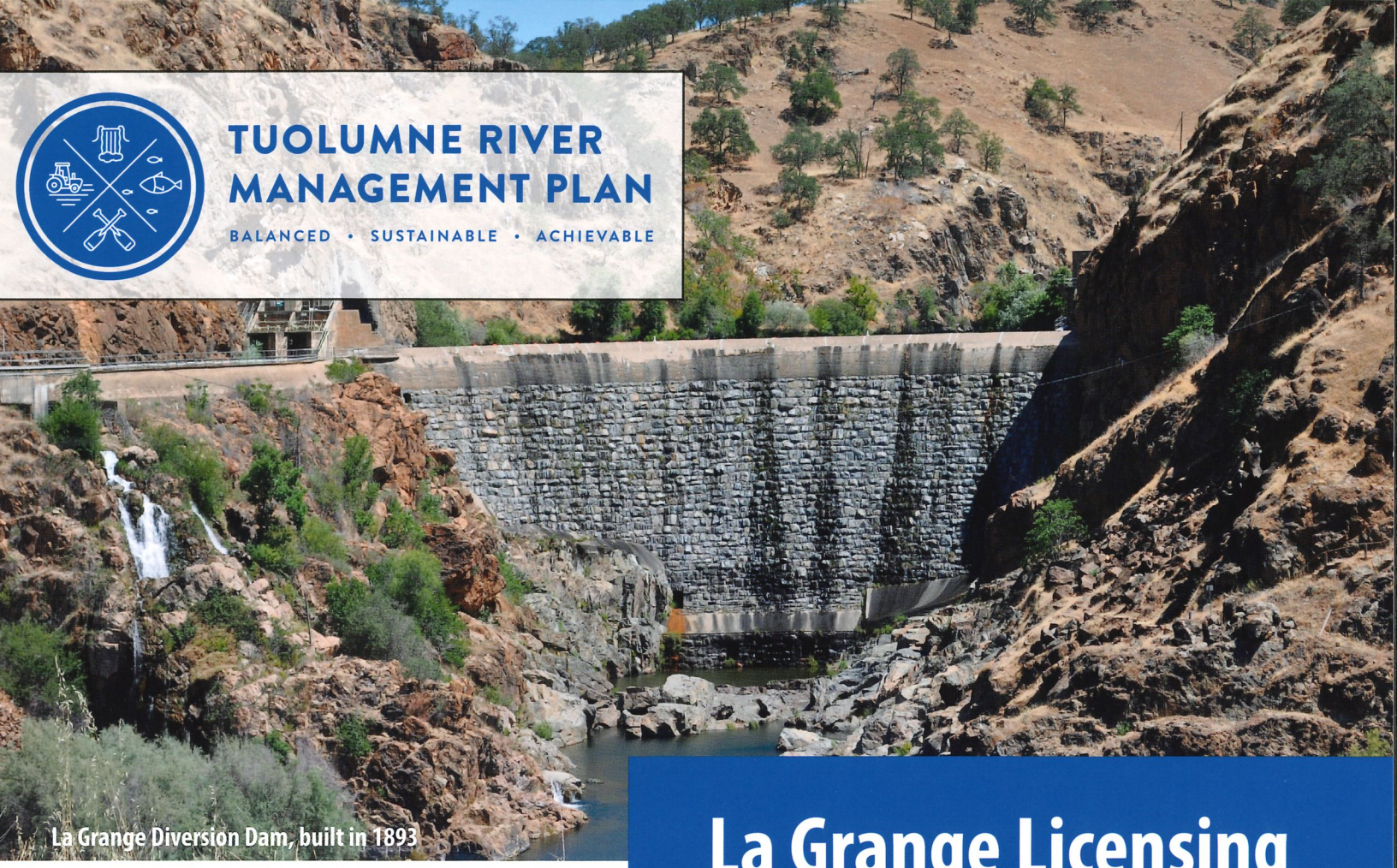


La Grange Diversion Dam, built in 1893

La Grange Licensing

Located approximately a mile and a half above the town of La Grange, on the Tuolumne River, the La Grange Diversion Dam is among the oldest dams still operating in California. When it was completed in 1893 it was the highest overflow dam in the United States, built at a cost of $550,000.

La Grange Diversion Dam has one basic purpose, diverting Tuolumne River water into the irrigation canal systems of the Turlock and Modesto Irrigation Districts.

Unlike most dams, very little water is stored behind La Grange Diversion Dam. Water is released upstream from the Don Pedro Dam Powerhouse, where it flows through a steep canyon to the La Grange Diversion Dam. Once it reaches the dam, the water flows three different ways. It can flow into either the Turlock or Modesto Irrigation District's canal system - or into the river. On rare occasions, when water is abundant, it flows over the top of the dam and directly into the river.

La Grange Diversion Dam is co-owned by the Turlock Irrigation District (TID) and Modesto Irrigation District (MID) and in 1924 TID constructed the La Grange Powerhouse which is capable of generating 5 megawatts.

In December 2012, the Federal Energy Regulatory Commission (FERC) issued an order finding that licensing of the La Grange Project is required under the Federal Power Act (FPA).

- Located on navigable waters of the United States
- Occupy U.S. lands (Bureau of Land Management)
- Project expansion or upgrade after 1935 (replaced worn out generation components in the '80s)

The Districts filed the Preliminary Application Document and FERC issued the Study Plan Determination that directed the Districts to undertake multiple studies focusing on areas such as: the suitability for fish reintroduction, recreation enhancements and cultural resources.

The Districts filed the Final License Application with FERC on October 11, 2017.

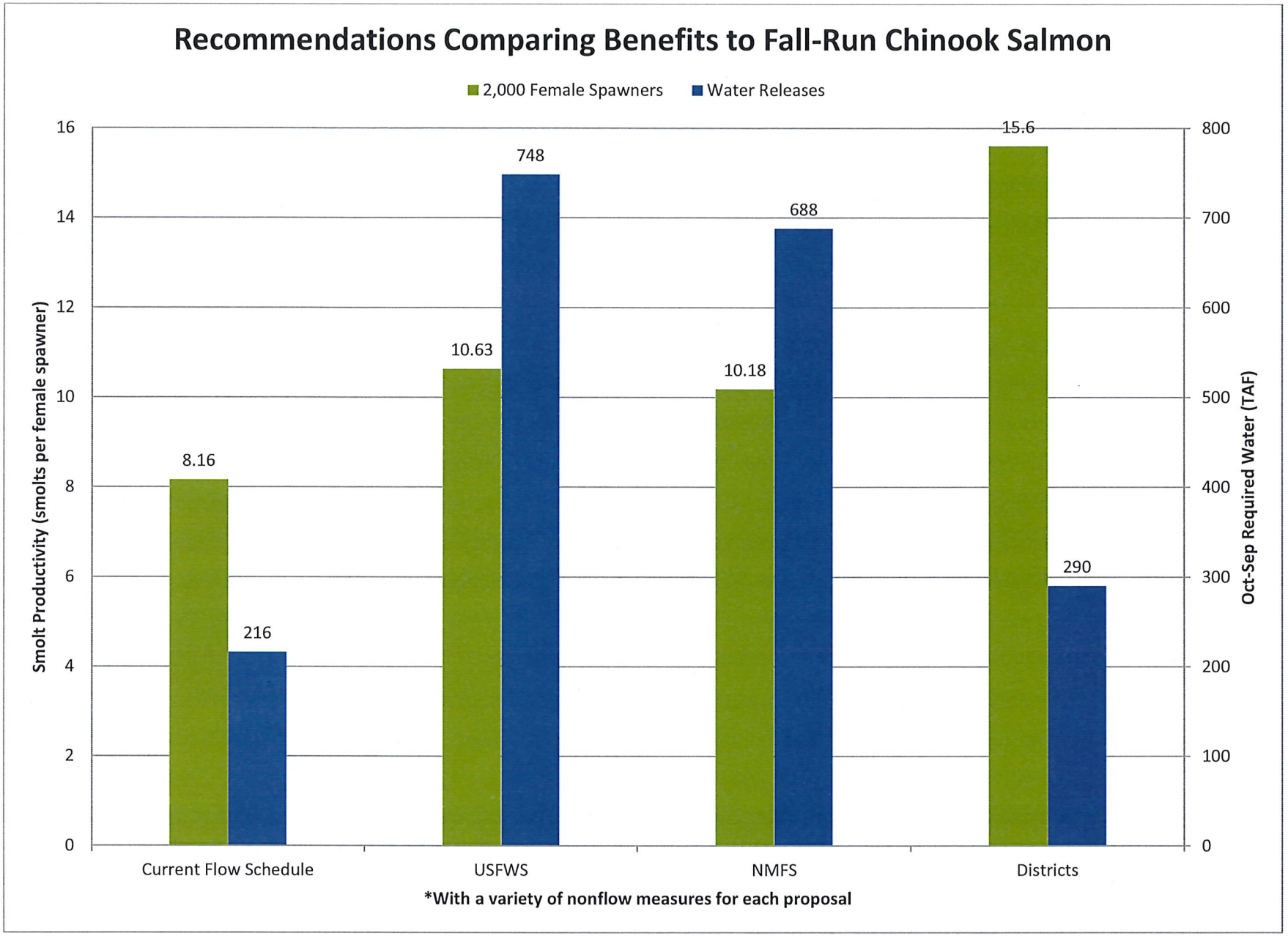
La Grange Licensing Timeline

Milestone	Date
Districts file Pre-Application Document - Approximate page total: 250 pages	January 29, 2014
FERC issues Scoping Document 1	May 23, 2014
FERC staff conducts public scoping meetings	June 18, 2014
FERC staff conducts site visit at the La Grange Project	June 19, 2014
Districts file Proposed Study Plan	September 5, 2014
FERC issues Scoping Document 2	September 5, 2014
Districts host Proposed Study Plan meeting	October 6, 2014
Districts file Revised Study Plan	January 5, 2015
FERC issues Study Plan Determination	February 2, 2015
Between May 2015 and April 4, 2016, Districts host four Workshops and two Technical Committee conference calls related to Fish Passage Facilities Alternatives Assessment	May 2015 - April 4, 2016
Districts file Initial Study Report - Approximate page total: 500 pages	February 2, 2016
Districts hold Initial Study Report meeting	February 25, 2016
FERC Issues Final Determination on Requests for Study Modifications and New Studies	May 27, 2016
Districts file Updated Study Report	February 1, 2017
Districts hold Updated Study Report meeting	February 16, 2017
Districts file Draft License Application	April 24, 2017
Districts file Amended Final License Application	October 11, 2017

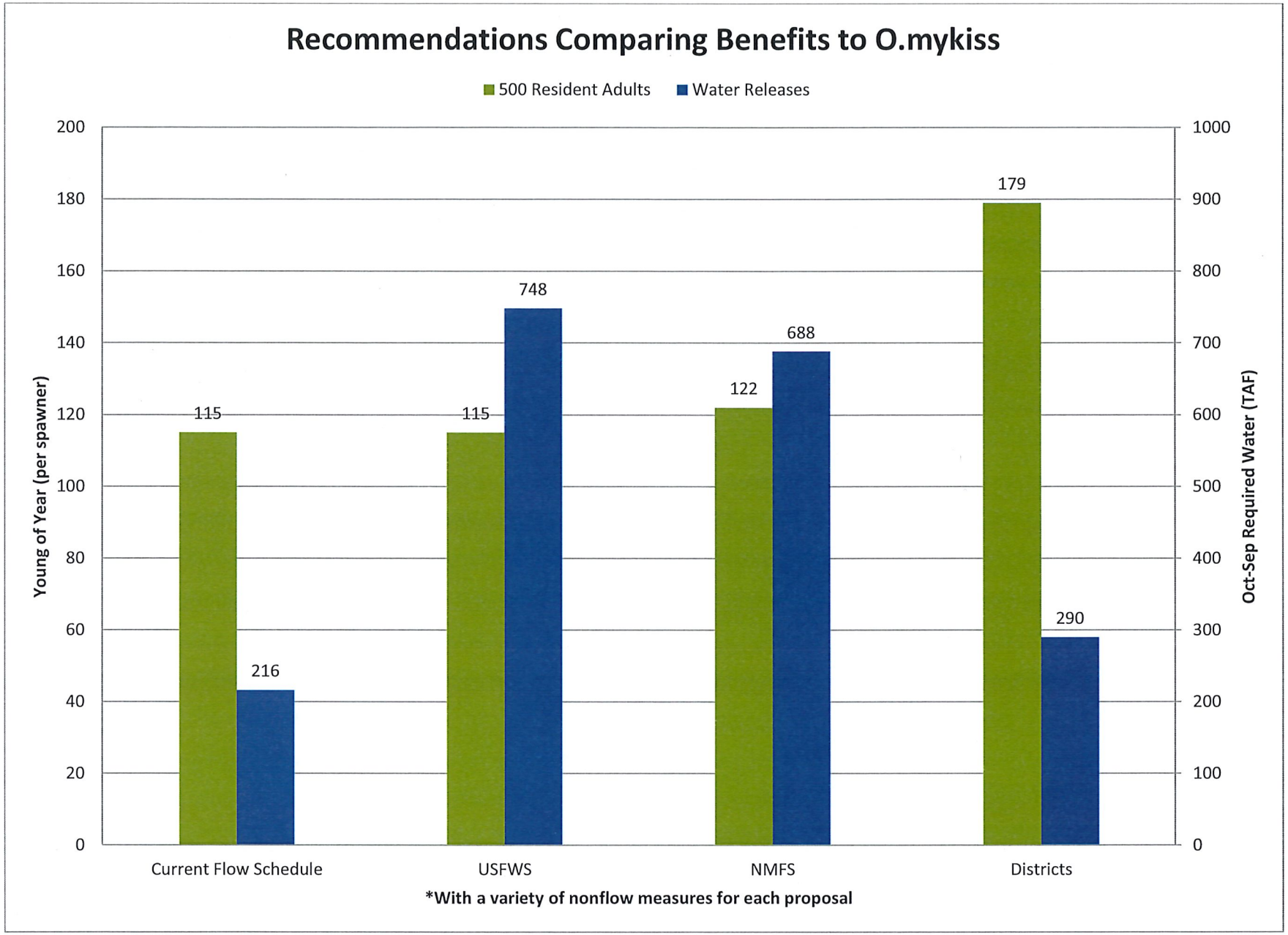
La Grange Licensing Studies

Study Name	Summary
Fish Passage Facilities Alternatives Assessment	Identify and design concept-level alternatives for upstream and downstream passage of salmon.
La Grange Project Fish Barrier Assessment	Evaluate the potential for La Grange Diversion Dam to act as a barrier to the upstream migration of salmon.
Topographic Survey	Collect information to evaluate effects of Project operations on stream flow and anadromous fish habitat.
Salmonid Habitat Mapping	Examine potential effects of project operations on anadromous fish habitat.
Fish Presence and Stranding Assessment	Document fish observations in the vicinity of La Grange Diversion Dam.
La Grange Project Flow Records Study	Summary of flow data for specific structures within the La Grange Project.
La Grange Powerhouse Draft Tubes Study	Evaluate the potential impact of La Grange powerhouse facilities on salmon.
Marine-Derived Nutrients Study	Evaluate the potential effects of the Project on the loss of nutrients in the upper Tuolumne River.
Cultural Resources Study	Identify cultural resources in the area and identify Project effects on those resources.
Recreation Access and Safety Assessment	Identify and characterize public use and risk to public safety of potential recreation opportunities.
Upper Tuolumne River Basin Fish Migration Barriers Study	Assess barriers to the upstream migration of salmon and steelhead in the upper Tuolumne River.
Hatchery and Stocking Practices Review	Assess historical and current hatchery stocking practices in the Tuolumne River Basin and identify potential interactions between stocking activities and the reintroduction of anadromous salmonids.
Water Temperature Monitoring and Modeling Study	Develop, test, and apply a computer model to simulate thermal conditions in the upper Tuolumne River.

May 29, 2018


Recommendations Comparing Benefits to Fall-Run Chinook Salmon
2,000 Female Spawners
Water Releases
Smolt Productivity (smolts per female spawner)
Oct-Sep Required Water (TAF)
0
2
4
6
8
10
12
14
16
0
100
200
300
400
500
600
700
800
8.16
216
10.63
748
10.18
688
15.6
290
Current Flow Schedule
USFWS
NMFS
Districts
*With a variety of nonflow measures for each proposal

May 29, 2018


Recommendations Comparing Benefits to O.mykiss
500 Resident Adults
Water Releases
Young of Year (per spawner)
Oct-Sep Required Water (TAF)
200
180
160
140
120
100
80
60
40
20
0
1000
900
800
700
600
500
400
300
200
100
0
115
216
115
748
122
688
179
290
Current Flow Schedule
USFWS
NMFS
Districts
*With a variety of nonflow measures for each proposal


TUOLUMNE RIVER MANAGEMENT PLAN
BALANCED • SUSTAINABLE • ACHIEVABLE

The Modesto and Turlock Irrigation Districts have developed a comprehensive management plan for the Tuolumne River. The plan describes the Districts' proposed operations, improvements and resource protection measures under a new Federal Energy Regulatory Commission (FERC) license for the Don Pedro Project.

With historic water rights dating back to the late 1880s, MID and TID have confidently developed a plan based on the best-available science, which includes balanced solutions that benefit all: the Tuolumne River, the Don Pedro Project, various stakeholder agencies and, most importantly, MID and TID customers and their communities.

PLAN GOALS

- Maintain water supply reliability for Tuolumne River agricultural and municipal users, and promote the long-term prosperity of the communities served.
- Identify measures to protect and expand the fall-run Chinook salmon and O. mykiss populations.
- Support recreational opportunities and riparian resources on the lower Tuolumne River.
- Protect cultural, terrestrial and recreational resources at the Don Pedro and La Grange projects.

PREDATION MANAGEMENT

It's a known fact that non-native predation is a leading stressor in the decline of juvenile salmon in the Central Valley. To reduce the detrimental effects that non-native predators have on Chinook salmon and O. mykiss populations, proposed measures include a predation-reducing permanent counting and barrier weir to prohibit the upstream movement of striped bass and other bass species.

To further reduce the adverse impact of predation, non-native bass species would be targeted for active removal above and below the barrier weir.

Recommended removal measures may include derbies and bounties, season extensions, higher bag limits and smaller catchable size.

90% of juvenile salmon are eaten by predatory fish before they reach the San Joaquin River.

RECREATIONAL IMPROVEMENTS

Boating is a popular recreational activity on the Tuolumne River: whitewater boating above Wards Ferry Bridge and canoeing and kayaking in the lower river. Recreational improvements include construction of a raft take-out deck above Wards Ferry Bridge to accommodate rafting activities.

RESOURCES PROTECTION

The Districts will implement measures to protect cultural and natural resources associated with the Don Pedro Project. Recommended measures include management plans for historical properties, vegetation, bald eagle and wildlife monitoring, land and endangered species protection.

This plan is a necessary component to promote the long-term prosperity of the communities it serves and is the key to providing water security and reliability to the Modesto and Turlock regions for the next 50 years.

The Tuolumne River Management Plan is:

BALANCED. SUSTAINABLE. ACHIEVABLE.

For further information or to learn more about recreational improvements, cultural resource protection, Don Pedro Reservoir resource protection and program costs, please visit www.donpedro-relicensing.com

"WATER IS THE DRIVING FORCE OF ALL NATURE."

— Leonardo Da Vinci

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