California Sportfishing Protection Alliance – Tuolumne River Trust - Trout Unlimited – American Rivers – American Whitewater - Merced River Conservation Committee – Friends of the River - Golden West Women Flyfishers – Central Sierra Environmental Resource Center – Tuolumne River Conservancy – American River Touring Association, Inc. – Sierra Mac River Trips, Inc. – O.A.R.S. West, Inc. – All-Outdoors California Whitewater Rafting, Inc.

April 12, 2019

By electronic filing

Kimberly Bose, Secretary
Federal Energy Regulatory Commission

Re: Draft Environmental Impact Statement
Don Pedro Hydroelectric Project, FERC Project No. 2299-082
La Grange Hydroelectric Project, FERC Project No. 14581-002

Dear Ms. Bose:

Attached for filing with the Federal Energy Regulatory Commission please find comments of the California Sportfishing Protection Alliance, Tuolumne River Trust, Trout Unlimited, American Rivers, American Whitewater, Merced River Conservation Committee, Friends of the River, Golden West Women Flyfishers, Central Sierra Environmental Resource Center, Tuolumne River Conservancy, American River Touring Association, Inc., Sierra Mac River Trips, Inc., O.A.R.S. West, Inc., and All-Outdoors California Whitewater Rafting, Inc. (collectively "Conservation Groups") on the *Draft Environmental Impact Statement for Hydropower Licenses, Don Pedro Hydroelectric Project, Project No. 2299-082—California, La Grange Hydroelectric Project, Project No. 14581-002—California* in the above-captioned proceedings.

Please contact me with any questions.

Respectfully submitted,

Chris Shutes
FERC Projects Director
California Sportfishing Protection Alliance

Cc: Service List, Project No. 2299-082
Service List, Project No. 14581-002

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Modesto Irrigation District	)	
Turlock Irrigation District	)	
Don Pedro Hydroelectric Project	)	P-2299-082
La Grange Hydroelectric Project	)	P-14581-002

CONSERVATION GROUPS' COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE RELICENSING OF THE DON PEDRO PROJECT AND THE ORIGINAL LICENSING OF THE LA GRANGE PROJECT

California Sportfishing Protection Alliance, Tuolumne River Trust, Trout Unlimited, American Rivers, American Whitewater, Merced River Conservation Committee, Friends of the River, Golden West Women Flyfishers, Central Sierra Environmental Resource Center, Tuolumne River Conservancy, American River Touring Association, Inc., Sierra Mac River Trips, Inc., O.A.R.S. West, Inc., and All-Outdoors California Whitewater Rafting, Inc. (hereinafter Conservation Groups) provide theses comment on the Draft Environmental Impact Statement (DEIS) for the relicensing of the Don Pedro Hydroelectric Project (P-2299) and the original relicensing for the La Grange Hydroelectric Project P-14581).[1] The Federal Energy Regulatory Commission (FERC or the Commission) issued the DEIS on February 11, 2019. Hereinafter, we refer to the Don Pedro Project as "the project," and to the La Grange Project as "the La Grange Project." Both projects are operated by Modesto Irrigation District and Turlock Irrigation District (MID and TID respectively; collectively, Districts or licensees).

I. BACKGROUND

The Projects' facilities are located on the mainstem of the Tuolumne River. The Project has a generating capacity of 203 megawatts (MW) and the La Grange Project has a generating capacity of 4.75 MW. The Tuolumne River is the largest tributary to the San Joaquin River, with a mean annual unimpaired flow of 1.946 million acre-feet.[2] The Tuolumne River was once one of the most prolific producers of fall-run Chinook salmon in California's Central Valley, with

[1] "*Draft Environmental Impact Statement for Hydropower Licenses, Don Pedro Hydroelectric Project, Project No. 2299-082—California, La Grange Hydroelectric Project, Project No. 14581-002—California,* eLibrary no. 20190211-3006, February 11, 2019.

[2] Districts, Amended Final License Application (AFLA), Exhibit E, p. 115/3-40. All references to the AFLA and the DEIS, and most other large Portable Document Format (pdf) documents cite to page numbers first in the pdf format and second to the page numbers as shown at the bottom of the page. For example, "DEIS p. 137/3-21" would cite to page 137 in pdf pagination and page 3-21 as shown at the bottom of the cited page.

runs as late as the 1940's exceeding 100,000 adults.[3] Since 2005, returns to the Tuolumne have ranged from 300 to 3800, with many years having less than 1000.[4]

The Conservation Groups have been active participants in the relicensing of the Project since before the formal commencement of the Integrated Licensing Process, with several of the groups participating in dozens of face-to-face relicensing and/or settlement meetings. Additionally, the Conservation Groups have been active participants in the licensing of the La Grange Project and participated extensively in the pre-licensing proceeding to determine whether the La Grange Project was subject to the Commission's licensing jurisdiction.

A. Key filings in the Don Pedro Project and La Grange Project dockets.

The Commission issued the Notice of Intent to File License Application [5] and Scoping Document 1[6] for the Don Pedro Project on April 8, 2011.

Individual members of Conservation Groups made oral scoping comments on May 11, 2011. Conservation Groups submitted written comments on Scoping Document 1 and recommendations for studies on June 10, 2011.[7]

The Commission issued Scoping Document 2 for the Don Pedro Project on July 25, 2011.[8]

The Commission found that the La Grange Project was subject to its licensing jurisdiction under Part 1 of the FPA on December 19, 2012.[9]

The licensees filed a Request for Rehearing and Motion for Stay Pending Judicial Review on January 18, 2013, arguing that the La Grange Project did not require licensing under the FPA.[10]

The Commission issued an Order on Rehearing, Clarifying Intervention Status and Denying Stay Pending Judicial Review on July 19, 2013.[11] As part of the Order, the Commission upheld its earlier finding that the La Grange Project was subject to its licensing jurisdiction and declined to determine that the La Grange Project required licensing as part of the Don Pedro Project.

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[3] Yoshiyama, et al., *Historical and present distribution of Chinook salmon in the Central Valley of California*., p. 32/102. Available at: https://www.fws.gov/cno/fisheries/CAMP/Documents/Final_Restoration_Plan_for_the_AFRP.pdf

[4] CDFW, 2018 Grand Tab, p. 21. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=84381.

[5] *See* eLibrary no. 20110408-3038.

[6] *See* eLibrary no. 20110408-3053.

[7] *See* eLibrary no. 20110610-5198.

[8] *See* eLibrary no. 20110725-3020.

[9] *See* eLibrary no.20121221-5131; 141 FERC ¶ 62,211 (2012).

[10] *See* eLibrary no. 20121219-3106.

[11] *See* eLibrary no. 20130719-3031.

The Commission issued the Notice of Proceeding[12] and Scoping Document 1[13] for the La Grange Project on May 23, 2014.

The Commission issued Scoping Document 2[14] for the La Grange Project on May 23, 2014. Scoping Document 2 for the La Grange Project announced FERC's intent to issue a "single environmental impact statement (EIS) for licensing the La Grange Project and relicensing the Don Pedro Project."[15]

The licensees filed a Draft License Application for the Don Pedro Project on November 26, 2013.[16] They filed a Final License Application for the Don Pedro Project on April 28, 2014,[17] and then filed an Amended Final License Application (AFLA) for the Don Pedro Hydroelectric Project on October 11, 2017.[18]

The licensees filed a Final License Application (FLA) for the LaGrange Hydroelectric Project on October 11, 2017.[19]

The Commission issued the "Notice of Application Accepted for Filing, Soliciting Motions to Intervene and Protests, Ready for Environmental Analysis, and Soliciting Comments, Recommendations, Preliminary Terms and Conditions, and Preliminary Fishway Prescriptions" for each project on November 30, 2017.[20]

Conservation Groups intervened in the Don Pedro Project licensing proceeding and in the La Grange licensing proceeding on January 23, 2018.[21]

Conservation Groups filed "Conservation Groups' Comments and Recommendations Ready for Environmental Analysis" (hereinafter "Conservation Groups' REA comments") on January 29, 2018, a single document that made comments and recommendations in response to the REA notices for both projects.[22]

[12] *See* eLibrary no. 20140523-3003.
[13] *See* eLibrary no. 20140523-3004.
[14] *See* eLibrary no. 20140905-3012.
[15] *Id.*, p. 2.
[16] *See* eLibrary no. 20131126-5015.
[17] *See* eLibrary no. 20140428-5069.
[18] *See* eLibrary no. 20171011-5064.
[19] *See* eLibrary no. 20171011-5063.
[20] The Commission issued the "Notice of Application Accepted for Filing, Soliciting Motions to Intervene and Protests, Ready for Environmental Analysis, and Soliciting Comments, Recommendations, Preliminary Terms and Conditions, and Preliminary Fishway Prescriptions" for the Don Pedro Hydroelectric Project (eLibrary no. 20171130-3002) on November 30, 2017. The Commission issued the "Notice of Application Accepted for Filing, Soliciting Motions to Intervene and Protests, Ready for Environmental Analysis, and Soliciting Comments, Recommendations, Preliminary Terms and Conditions, and Preliminary Fishway Prescriptions" for the La Grange Hydroelectric Project (eLibrary no. 20171130-3003) on November 30, 2017.
[21] *See* eLibrary no. 20180123-5010 (Don Pedro) and 20180123-5013 (La Grange).
[22] *See* eLibrary no. 20180129-5200.

Districts issued Reply Comments to REA filings by various parties in both the Don Pedro and La Grange dockets on March 15, 2018[23] and additionally on May 14, 2018.[24] These comments are voluminous, and in both cases consist of multiple files.

The City and County of San Francisco (CCSF) issued Reply Comments to REA filings by various parties in both the Don Pedro and La Grange dockets on March 15, 2018[25] and Supplemental Reply Comments on May 22, 2018.[26]

The Bay Area Water Supply and Conservation Agency (BAWSCA) issued Reply Comments to REA filings by various parties in both the Don Pedro and La Grange dockets (but in separate filings) on March 15, 2018[27] and Supplemental Reply Comments on May 22, 2018.[28]

The U.S. Fish and Wildlife Service (USFWS) revised its preliminary Federal Power Act (FPA) § 10(j) recommendations on October 1, 2018.[29] Notably, USFWS modified its flow recommendations for the lower Tuolumne River to conform to those of the Districts, with the addition of a "spill management plan."

The Districts' filed a letter of support for USFWS's proposed agreement with the AFLA flows and other for USFWS's proposed revisions to several measures in Districts' AFLA on October 17, 2018.[30] On November 14, 2018, the Districts amended their "preferred plan" as proposed in the AFLA to reflect changes agreed to by the Districts and USFWS.[31] On November 16, 2018 and November 19, 2018, respectively, CCSF[32] and BAWSCA[33] filed letters of support to the Districts' proposed amendments to their "preferred plan."

Conservation Groups filed an objection to USFWS's revisions to its preliminary 10(j) recommendations on December 4, 2018, stating that the revisions were arbitrary and capricious, and an abuse of agency discretion.[34]

B. Key landmarks in the update of the Bay-Delta Plan and related negotiations affecting the Tuolumne River

On December 12, 2018, the directors of the California Department of Fish and Wildlife (CDFW) and the California Department of Water Resources (DWR) presented to the California State Water Resources Control Board (State Water Board) a series of outlines of voluntary agreements (VA's) that would substitute for the flow objectives that the State Board is preparing

[23] *See* eLibrary no. 20180315-5006.
[24] *See* eLibrary no. 20180514-5981.
[25] *See* eLibrary no.20180315-5138.
[26] *See* eLibrary no. 20180522-5204.
[27] *See* eLibrary no. 20180315-5064 (Don Pedro) and 20180315-5065 (La Grange).
[28] *See* eLibrary no. 20180522-5243 (Don Pedro) and 20180522-5281 (La Grange).
[29] *See* eLibrary no. 20181002-5009.
[30] *See* eLibrary no. 20181017-5141.
[31] *See* eLibrary no. 20181114-5145.
[32] *See* eLibrary no. 20181116-5215.
[33] *See* eLibrary no. 20181119-5188.
[34] *See* eLibrary no. 20181204-5158.

to adopt in the update of the Bay-Delta Water Quality Control Plan (Bay-Delta Plan).[35] These outlines of agreements included the outline of an agreement for the Tuolumne River that would include flows and non-flow conditions proposed by the Districts in the AFLA (as updated on November 14, 2018), slightly modified, with the addition of blocks of water earmarked for "floodplain inundation flows" in spring. CCSF and the Districts spoke in support of the Tuolumne agreement outline. No nonprofit organizations, environmental organizations, conservation groups, or citizens' organizations participated in the development of this outline of an agreement, or supported it. The California Natural Resources Agency (CNRA) submitted to the State Water Board a somewhat more detailed description of the outline of the voluntary agreements on March 1, 2019.[36] This outline included further description of the proposed voluntary agreement for the Tuolumne River.

The State Water Board adopted an update to Lower San Joaquin River flow objectives, and the supporting Substitute Environmental Document (hereinafter, "SED"), on December 12, 2018.[37] The adopted objectives did not include the outline of the voluntary agreement for the Tuolumne River, but the order adopting it did express the Board's willingness to evaluate a voluntary agreement for the Tuolumne River in the future.[38]

C. Summary of Conservation Groups' key comments and recommendations in REA Comments and Disposition in the DEIS

In their January 29, 2018 *Comments and Recommendations, Ready for Environmental Analysis*, Conservation Groups recommended that the Districts and the Commission consider a series of measures to ensure the legal sufficiency of the Commission's NEPA analysis (*see* 18 C.F.R. § 380.3) and to ensure that the new license is in the public interest and best suited to a comprehensive plan of development for the river consistent with Sections 10(a) and 15 of the FPA (*see* 16 U.S.C. §§ 803(a)(1) and 808). These measures included:

1) Implementation of Conservation Groups' Flow Proposal as a comprehensive mechanism to address impacts to instream resources, strategically and flexibly manage reservoir storage levels and minimize effects to water deliveries.
2) Reservation of the National Marine Fisheries Services' (NMFS) FPA § 18 authority to prescribe fish passage for spring-run Chinook salmon, with a re-evaluation in 2026.
3) Establishment of the Tuolumne River Technical Advisory Committee (TAC) as the primary forum to conduct post-licensing monitoring, research and consultation.
4) Creation of new floodplain habitat along the lower Tuolumne River.

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[35] *See* https://water.ca.gov/-/media/DWR-Website/Web-Pages/Blogs/Voluntary-Settlement-Agreement-Meeting-Materials-Dec-12-2018-DWR-CDFW-CNRA.pdf, pdf p. 56.

[36] *See* Complete CNRA VA Submittal to State Water Board, March 1, 2019. Available at: http://resources.ca.gov/docs/voluntary-agreements/2019/Complete_March_1_VA_Submission_to_SWRCB.pdf.

[37] *FINAL Substitute Environmental Document in Support of Potential Changes to the Water Quality Control Plan for the San Francisco Bay-Sacramento San Joaquin Delta Estuary San Joaquin River Flows and Southern Delta Water Quality.* The changes to the Bay-Delta Plan are included as Appendix K. *See* https://www.waterboards.ca.gov/plans_policies/docs/2018wqcp.pdf

[38] *Id.*, pdf p. 6 (Resolution p. 5): "If a voluntary agreement is reached after the adoption of the Plan Amendments, the State Water Board will consider the voluntary agreement and determine what, if any, actions are necessary to consider the agreement as a means of implementing the Bay-Delta Plan objectives, including a public process."

5) Addition of gravel to fill in Special Run Pools in the lower Tuolumne River and to maintain spawning habitat.
6) Addition of large woody debris to provide salmonid habitat in the lower Tuolumne River.
7) Installation of a fish counting weir annually at river mile (RM) 24, and installation of a temporary weir to capture piscivorous fish in Critically Dry and Super Critically Dry years.
8) Construction of a safe and efficient whitewater boating takeout facility and day-use facilities at Ward's Ferry Bridge.
9) Consideration of an alternative that analyzes changes to Project operations and the condition of aquatic resources in response to Conservation Groups' Flow Proposal and recommendations for non-flow measures.
10) Consideration of an alternative that analyzes changes to Project operations and condition of aquatic resources in response to limiting Delta exports.
11) Consideration of the cumulative effects of the revised Bay-Delta Water Quality Control Plan, the San Joaquin River Restoration Program, and new Merced River operations on Tuolumne River fisheries and on the Tuolumne River's hydrological resources.

The following list describes how the DEIS addresses each of the issues raised in Conservation Groups' key points as enumerated directly above. The DEIS:

1) Analyzes some aspects of Conservation Groups' recommendations, but does not explain why the staff alternative as a whole is better suited as a comprehensive mechanism to address impacts to instream resources, strategically and flexibly manage reservoir storage levels and minimize effects to water deliveries.
2) Supports NMFS' reservation of its FPA § 18 authority.
3) Opposes creation of a Tuolumne River Technical Advisory Committee or similar.
4) Discounts the need for additional floodplain habitat along the lower Tuolumne River as necessary to mitigate project effects.
5) Proposes limited gravel additions to the lower Tuolumne River for the sole purpose of increasing spawning habitat improvements and not in order to reduce habitat for predatory fish.
6) Proposes addition of large wood to the lower Tuolumne River, but only in volumes equivalent to wood captured by project reservoirs in the future.
7) Opposes construction of a weir to reduce migration of predatory fish and opposes annual installation of a weir to count fish.
8) Discounts the need for a whitewater takeout facility at Ward's Ferry Bridge, on the grounds that such a facility would mitigate for conditions that are not project effects.
9) Analyzes as alternatives under NEPA only the No Action Alternative, the licensees Proposed Alternative, the Staff Alternative, and the Staff Alternative with Mandatory Conditions.
10) Does not analyze how alternative Delta export operations would affect the efficacy of mitigation and protection measures being proposed for the new FERC licenses for the Don Pedro and La Grange projects.

11) Mentions but does not analyze how cumulative effects such as the revised Bay-Delta Water Quality Control Plan, the San Joaquin River Restoration Program, and present and future Merced River operations would affect Tuolumne River fisheries and operations, or how they would affect the efficacy of mitigation and protection measures under evaluation for inclusion in the new FERC licenses for the Don Pedro and La Grange projects.

II. STRUCTURE OF THIS DOCUMENT

This document comments on the legal and substantive sufficiency of the DEIS to meet the Commission's obligations under the National Environmental Policy Act (NEPA), the Administrative Procedure Act (APA), the Endangered Species Act (ESA), and the FPA. We identify deficiencies in the DEIS, which if not corrected prior to publication in the Final EIS may result in non-compliance with the Commission's obligations under the relevant statutes.

This document evaluates the sufficiency of the DEIS in its treatment of the following under NEPA, sequenced as stated:

1) Baseline conditions: whether description of baseline conditions is accurate.
2) Project alternatives: whether the alternatives that the DEIS analyzes under NEPA are sufficient to inform reasoned analysis and whether they are sufficiently distinct from one another.
3) Cumulative effects: whether the DEIS improperly treats project effects as non-project cumulative effects; whether the DEIS declines to require mitigation of project effects on the grounds that they are categorized as cumulative effects, or for other reasons.
4) Project description: whether the DEIS's description of the proposed action is sufficiently detailed to analyze and whether the DEIS analyzes measures actually proposed as license conditions.
5) Evidentiary basis: whether the DEIS has made the necessary analyses, supports findings with evidence in the record and reasoned analysis, and considers appropriate mitigation measures.

This document evaluates the sufficiency of the DEIS under the APA, examining primarily whether the analysis is supported by substantial evidence.

This document evaluates the sufficiency of the DEIS under the FPA, examining primarily whether staff's findings represent a proper and reasoned balancing of resources under the Comprehensive Planning clause § 10(a)(1) and demonstrate equal consideration of Power and Non-Power values under § 4(e).

The analysis of adequacy under the APA and FPA is distributed throughout the document.

III. THE DEIS IS LEGALLY AND SUBSTANTIVELY DEFICIENT UNDER NEPA.

A. The DEIS inaccurately and incompletely describes and analyzes the baseline conditions of the projects and affected areas.

The FPA, the Endangered Species Act (ESA),[39] and NEPA all mandate that the Commission establish baseline environmental conditions before it moves forward with the relicensing of hydroelectric facilities. The Commission must establish a "baseline" in order to allow policymakers and the public to compare the environmental consequences of the status quo to the consequences of the proposed relicensing and other alternatives.[40]

Under the FPA, the Commission's baseline assessment must identify existing conditions of the waters and lands in the project area at the time of the licensing proceeding.[41] In addition to the FPA's requirements, the ESA mandates that the environmental baseline include "the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process."[42]

Furthermore, in order to comply with NEPA, the Commission must establish baseline conditions based on "accurate information and defensible reasoning."[43] The Commission must either directly measure baseline conditions in affected areas (both the project site and surrounding areas) or estimate baseline conditions using data from a similar area, computer modeling, or another reasonable method.[44]

Establishing appropriate baseline conditions is critical in an agency's preparation of an EIS.[45] In order to determine the environmental impact of a proposed action, agencies must add future direct and indirect impacts of the proposed action to the environmental baseline. [46] Therefore, a reasoned environmental baseline is a prerequisite to an adequate EIS, which: (1)

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[39] The Commission's baseline determination must also meet ESA requirements due to the potential impact of the projects on threatened steelhead trout. *See Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 185 (1978). "One would be hard pressed to find a statutory provision whose terms were any plainer than those in § 7 of the Endangered Species Act. Its very words affirmatively command all federal agencies 'to *insure* that actions *authorized*, *funded*, or *carried out* by them do not *jeopardize* the continued existence' of an endangered species or '*result* in the destruction or modification of habitat of such species ….'" This language admits of no exception." *Id*. at 173; 16 U.S.C. § 1531(c), 1532(3).

[40] *See Ctr. For Biological Diversity v. U.S. Dep't of Interior*, 623 F.3d 633, 642 (9th Cir. 2010); *Am. Rivers v. FERC*, 201 F.3d 1186, 1195-97 (9th Cir. 1999).

[41] *See* Federal Power Act, §§ 1 *et seq*., 321, *as amended*, 16 U.S.C.. § 792 *et seq*.,791a; *see Am. Rivers*, 201 F.3d at 1195-97

[42] *Am. Rivers v. FERC*, 895 F.3d 32, 45 (D.C. Cir. 2018).

[43] *See Great Basin Res. Watch v. BLM*, 844 F.3d 1095, 1101 (9th Cir. 2016).

[44] *Id*; *see Ohio Valley Envtl. Coalition, Inc. v. United StatesArmy Corps of Eng'rs*, 716 F.3d 119, 127 (4th Cir. 2013) (finding that the agency reached an informed judgment as to the baseline conditions by considering the "relevant factors, evaluating both the impact site and the entire watershed,").

[45] *Great Basin Res. Watch* , 844 F.3d at 1101.

[46] *Id*.

provides thorough analysis of potential environmental impacts, (2) provides full and fair discussion of significant environmental impacts, and (3) informs decisionmakers and the public of the reasonable alternatives and mitigation measures which would avoid or minimize adverse impacts or enhance the quality of the human environment.[47]

A reasoned baseline serves as a jumping off point from which agencies assess environmental impacts, reasonable alternatives, and mitigation measures. Without establishing baseline conditions which exist before a project begins, there is "simply no way to determine what effect the [project] will have on the environment and, consequently, no way to comply with NEPA."[48] In other words, without reasoned baseline data, "an agency cannot carefully consider information about significant environment impacts," resulting in an arbitrary and capricious decision.[49] Courts not infrequently find NEPA violations when an agency miscalculates the baseline.[50]

The DEIS does not accurately establish baseline conditions or identify appropriate mitigation measures based on its baseline conditions. It fails to provide "accurate information" for its description of baseline consumptive use and consumptive demand for Tuolumne River water and fails to provide "defensible reasoning" for its decision not to analyze the overappropriation of the Tuolumne River watershed. In order to comply with NEPA, the FEIS should supplement the analysis of the proposed action's baseline. The FEIS should provide an accurate evaluation of the appropriation of the Tuolumne River's water resources, including the general condition of the overappropriation of the water resources of the Tuolumne River and adjacent groundwater basins.

1. The DEIS overstates consumptive demand for Tuolumne River water generally and inaccurately describes the baseline consumptive use Tuolumne River water by the City and County of San Francisco.

The DEIS states: "Total demand for Tuolumne River water during normal water years is about 1.5 million acre-feet."[51] Conservation Groups find no basis for this figure. Conservation Groups believe that the working figure of 1.2 MAF is more accurate based on modeling analysis, and use this as a working value.[52]

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[47] *Id.*
[48] *Id.*
[49] *N. Plains Res. Council, Inc. v. Surface Transp. Bd*, 668 F.3d 1067, 1085 (9th Cir. 2011).
[50] *Friends of Back Bay v. U.S. Army Corps of Eng'rs*, 681 F.3d 581, 588 (4th Cir. 2012).
[51] DEIS, p. 137/3-21.
[52] The Don Pedro Operations Model shows an average diversion to San Francisco through the San Joaquin Pipeline of 230 TAF (under a 238 mgd base case demand scenario), and a maximum modeled base case diversion in 1972 of 270 TAF (User Input tab, cells AF270 and AF229). The model shows an average full demand to TID of 568 TAF and a maximum TID demand in 1972 of 639 TAF (User Input tab, cells AG154 and AG113). The model shows an average MID demand of 299 TAF and a maximum MID demand of 333 TAF in 1972 (User Input tab, cells AG106 and AG65). The average modeled San Francisco diversion plus the average MID and TID demands add up to 1070 TAF. The maximum modeled San Francisco diversion plus the maximum MID and TID demands add up to 1240 TAF. Accounting for small riparian demands along the river, 1200 TAF per year appear to be a much more reasonable working number for annual demand that 1500 TAF. The 300 TAF difference in these estimates is about the same as the total annual required flow in the wetter years of the Districts' proposed flow requirements, shown as 290 TAF in DEIS Figure 3.3.2-26.

The DEIS further states: "The Hetch Hetchy System delivers an average of 265,000 acre-feet of water each year …."[53] The DEIS does not cite to a specific basis for this statement, which is contrary to information in the record, as described below.

Under a 238 million gallons per day (mgd) demand scenario, the average modeled combined demand for the San Francisco Public Utilities Commission (SFPUC) and its Bay Area Water Supply and Conservation Agency (BAWSCA) customers from the Tuolumne River is 230,831 thousand acre-feet (TAF). This is the figure shown in the Base Case model run performed for the Districts (Don Pedro Operations Model version 3.10, User Input tab, Cell AF270). In addition, actual SFPUC/BAWSCA total demand (including from local Bay Area sources) in the past 3 years has been below 200 mgd. In fiscal year 2018, it was 196 mgd.[54]

Accordingly, the California Sportfishing Protection Alliance (CSPA, one of the Conservation Groups) requested that SFPUC provide a Don Pedro Operations Model base case model run that showed San Joaquin Pipeline deliveries under a 200 mgd SFPUC/BAWSCA total demand scenario.[55] That would allow CSPA to model different scenarios using actual baseline demand. SFPUC declined to provide this modified base case. Instead, the Districts provided to CSPA a model run representing the Districts' interpretation of the State Water Board's Lower San Joaquin River flow objectives, combined with a 265 mgd SFPUC/BAWSCA total demand scenario. In order to perform its own analysis, CSPA compared modeled San Joaquin Pipeline deliveries under the 238 and 265 mgd scenarios, and, accounting for deficiencies, synthesized San Joaquin Pipeline deliveries under a 200 mgd base case scenario. CSPA is in the process of documenting this process of synthesis and evaluating what this differential could mean under various flow scenarios. CSPA was unable to complete this work prior to the deadline for these comments, but plans to file a follow-up memo that discusses the results of this technical work.

This is work staff should have done. The FEIS should re-evaluate its analysis of the effects to SFPUC and BAWSCA of water no longer available for water supply due to increased flow requirement using a 200 mgd demand scenario for these entities.

2. The DEIS does not analyze the overappropriation of the Tuolumne River watershed, including groundwater resources, as a baseline condition. Therefore, it improperly presents incremental improvements as substantive improvements.

a. Surface water resources are overappropriated.

The surface water and groundwater resources of the Tuolumne River are overappropriated. The DEIS reports that the Tuolumne River watershed has a mean annual

[53] DEIS, p. 132/3-16. The use of 238 mgd as baseline demand is overstated, as discussed *infra*. A more representative baseline quantity for the diversions by the City and County of San Francisco would be based on a system demand of 196 mgd, the demand of SFPUC and BAWSCA in fiscal year 2018. Source: SFPUC Annual Report, https://sfwater.org/modules/showdocument.aspx?documentid=13473.
[54] SFPUC Annual Report, *Id*.
[56] DEIS, p. 115/3-1.

runoff of 1.9 million acre-feet (MAF).[56] Usable storage in Don Pedro Reservoir is 1.721 MAF.[57] "The Districts annually supply about 850,000 acre-feet of irrigation water and 67,500 acre-feet of municipal and industrial water to meet consumptive water demands."[58]

As described above, Conservation Groups believe that the working figure of 1.2 MAF is an accurate statement of consumptive demand for the Tuolumne River based on modeling analysis, and use this as a working value. Nonetheless, 1.2 MAF, greater than 60% of the average annual runoff, is sustainable only at the expense of instream flow. Water deliveries from the project are currently maintained by starving the lower Tuolumne River of flow. As described in Conservation Groups' REA comments, actual February-June release from La Grange was equal to or less than 10% of the unimpaired February-June flow in 18 of the 45 water years from 1971 through 2015; equal to or less than 20% of the unimpaired February-June flow in 29 of the 45 water years from 1971 through 2015. In only 8 of the 45 water years from 1971 through 2015 did actual February-June flow at the La Grange gage equal or exceed 50% of the February-June unimpaired flow.[59]

The Districts' Amended Final License Application (AFLA) compares its proposed flows to this extremely degraded baseline condition in AFLA Appendix E-1, Attachment G (Operations Modeling Summary), Table 5. Table 5 shows that resulting flows from the AFLA requirements would result in an average of 114%, 128%, and 111% of the baseline February-June required flow in Critically Dry (CD), Dry (D), and Below Normal (BN) water years respectively. However, when compared to the unimpaired flow in these months, the resulting flow still ends up at average of 13% of the February-June unimpaired flow in CD years and 20% in D and BN years. In Above Normal years, no change in the average volume of water released would result; in Wet years, the average resulting flow from the AFLA proposal would increase flows would increase by 4%, almost all in water year 1993.[60]

The DEIS balances the effects of different flow proposals against this degraded baseline, with the apparent metric of not reducing water supply deliveries beyond those proposed by the Districts and supported by CCSF. The DEIS thus regards the benefits of incremental improvements to flow as comparable to the benefits of flow recommendations that would address the underlying degradation.

> While returning the flow regime in the lower Tuolumne River to a condition that more closely mimics the magnitude, duration, and timing of the unimpaired hydrograph would be expected to provide multiple benefits to aquatic resources, the Districts' proposed flow regime would also improve aquatic habitat conditions downstream of the La Grange Diversion Dam compared to the base case, and would continue to meet existing and projected water demands in the region.[61]

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[56] DEIS, p. 115/3-1.
[57] DEIS, p. 131/3-15. The SED states the median unimpaired runoff for the Tuolumne basin as 1514 TAF and the mean as 1851 TAF, over a longer though less up to date record.
[58] DEIS, p. 137/3-21.
[59] Conservation Groups' REA comments, p. 10. Data derived from SFPUC document distributed at stakeholder meeting, February 10, 2017.
[60] AFLA Appendix E-1, Attachment G (Operations Modeling Summary), Table 5.
[61] DEIS, p. 262/3-146.

We address *infra* the substantive claim of adequacy of the Districts' recommended flows and comparison to those of other stakeholders.

b. Groundwater resources that are dependent on extensive recharge from flood irrigation are part of a baseline overappropriation of combined surface water and groundwater resources.

The DEIS does not describe the reliance of the groundwater basins underlying the MID and TID surface areas on recharge based on over-application of water in normal and wet water years through flood irrigation. See Conservation Groups' REA comments, pp. 23-26, and the Agricultural Water Management Plans of MID and TID cited therein.[62] The DEIS does not describe the general condition of the groundwater basins underlying MID and TID's service areas at all. DWR has identified these Modesto and Turlock basins as "high-priority" basins under the Sustainable Groundwater Management Act (SGMA) of 2014.[63] The DEIS describes groundwater resources in limited and passing topic areas: the interaction of surface water and groundwater in the water balance of the lower Tuolumne River;[64] the costs of pumping groundwater and the modeled cost of $143/AF of pumping groundwater;[65] the fact the Districts assume 15% of irrigation water in their service areas comes from groundwater.[66]

The absence in the DEIS of a baseline description of the overappropriation of combined groundwater and surface water resources in the MID and TID service areas thus fails to disclose the basis of comparison for analysis of impacts of different proposed flow regimes on groundwater. For example, the DEIS ascribes the costs of potential water shortages to the City of Modesto as a function of flow increases proposed by various relicensing parties.[67] Flow increases could be the proximate cause of shortages to the City of Modesto. However, these shortages take place in a context in which existing uses of water leave a combined deficit of water resources in meeting all beneficial uses.

The ascription of increased groundwater pumping to flow increases is comparable to having two bank accounts that in combination are inadequate to meet financial obligations. One cannot blame the overall deficit on one account or the other. One cannot resolve the deficit by not paying obligations out of the surface water account in order to have resources available to backfill the groundwater account when it is called upon for payment.

In the instant case, one cannot fairly ascribe to flow increases the responsibility for the City of Modesto's prospective costs for increased groundwater pumping. If surface water

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[62] *2015 TID Agricultural Water Management Plan*: http://www.tid.org/sites/default/files/documents/tidweb_content/TID%20AWMP%202015-FINAL_12_09_15_w-attachments.pdf; MID, *Agricultural Water Management Plan 2015 Update:* http://www.water.ca.gov/wateruseefficiency/sb7/docs/2015/plans/Modesto%20ID%202015%20AWMP.pdf

[63] See for example the SGMA Dashboard, https://gis.water.ca.gov/app/bp2018-dashboard/p1/

[64] *E.g.*, DEIS, p. 136/3-20.

[65] DEIS, p. 530/5-414.

[66] *Id.*

[67] DEIS, pp. 530-533/3-414 to 3-417.

resources were not constantly bolstered by the unrepaid equity line of public trust resources, the sources of the deficit would be transparent.

The FEIS should include a description of the overappropriation of water resources in the area of the projects as a baseline condition. The FEIS should re-evaluate the balancing of resources in consideration of this more complete description of baseline conditions.

B. The DEIS fails to analyze a reasonable range of alternatives.

The Commission is required under the FPA and NEPA to analyze reasonable alternatives to the proposed Project.

The Commission has substantive obligations under FPA § 10(a)(1), 16 U.S.C. § 803(a), and § 15(a)(2), 16 U.S.C. § 808(a)(2), to undertake a thorough study of alternatives as the basis for its required finding that a new license is best adapted to a comprehensive plan of development and to serve the public interest.[68] Section 10(a) establishes a "broad public interest standard, requiring consideration of all factors affecting the public interest."[69] Section 15(a)(2) requires "that FERC rigorously scrutinize[] any application for a new license for an existing hydroelectric project, so that it can determine that the existing project is 'best adapted to serve the public interest.'"[70]

In addition to the substantive obligations to analyze alternatives under the FPA, the Commission is subject to parallel, procedural obligations under NEPA to analyze a reasonable range of alternatives. It is critical that the Commission's NEPA document contain a robust and diverse alternatives analysis -- the "heart" of NEPA -- to provide "a clear basis for choice among options by the decision-maker and the public."[71] Federal agencies must "study, develop, and describe appropriate alternatives to recommend courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources."[72] NEPA also requires agencies to "describe the environment of the areas to be affected . . . by the alternatives under consideration" and identify a "no action alternative."[73] The Commission's NEPA document is intended to support its final licensing decision as well as the decisions of other jurisdictional agencies, including FWS, NMFS and the State Board. While the State Water Board has traditionally prepared its own environmental document under the California Environmental Quality Act, its practice is to rely as appropriate on the Commission's NEPA document.[74]

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[68] *See Scenic Hudson Pres. Conf. v. Fed. Power Comm'n*, 354 F.2d 608, 612 (2d Cir. 1965); *Green Island Power Auth. v. F.E.R.C.*, 577 F.3d 148, 168 (2d Cir. 2009) ("*Green Island*").

[69] *Green Island*, 577 F.3d at 167 (quoting H.R. Rep. No. 99–507, at 12 (1986)). Section 10(a) also requires that "the project adopted . . . will be best adapted to a comprehensive plan for improving or developing a waterway." 16 U.S.C. § 803(a)(1).

[70] *Green Island*, 577 F.3d at 167.

[71] *See, e.g., Simmons v. United States Army Corps of Eng'rs*, 120 F.3d 664 (7th Cir. 1997).
(10th Cir. 2002); *see also* 40 C.F.R. § 1502.14.

[72] 42 U.S.C. § 4332(2)(E); *see also* 40 C.F.R. § 1502.14(a) (an EIS must "[r]igorously explore and objectively evaluate all reasonable alternatives" to a proposed action); *id.* § 1508.9(b) (an EA must include a discussion "of alternatives as required by section 102(2)(E)").

[73] 40 C.F.R. §§ 1502.14(d), 1502.15

[74] *See* Initial Study and Mitigated Negative Declaration for the Poe Project *available at*

Accordingly, the DEIS should consider a diverse range of operational alternatives that the State Water Board will likely to consider in making its CWA section 401 decision. This includes the Conservation Groups' alternatives, which are reasonable means to meet the objectives of the State Board's Bay-Delta Plan and the purpose and need of the Projects.

For purposes of NEPA, "[t]he scope of an alternatives analysis depends on the underlying purpose and need specified by the agency for the proposed action."[75] The Commission "need only evaluate alternatives that are reasonably related to the purposes of the project."[76] However, the Commission may not define the purpose and need of the project so narrowly as to curtail a full assessment of reasonable alternatives.[77] Only a sufficiently broad statement allows the full analysis of an adequate range of alternatives to enable the EIS to provide "a clear basis for choice among options by the decisionmaker and the public."[78]

In determining an appropriately broad range of alternatives:

> the emphasis is on what is "reasonable" rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant. …
>
> An alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable. A potential conflict with local or federal law does not necessarily render an alternative unreasonable, although such conflicts must be considered.[79]

Unlike the DEIS as issued, the FEIS must consider a reasonable range of alternatives, including alternative flow scenarios that better protect fish and wildlife resources. This obligation applies regardless of whether the dams serve multiple purposes; regardless of whether the Commission has exclusive authority to authorize the alternatives; to satisfy the requirement

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https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/docs/poe_ferc2107/poe_final_mnd_stamped.pdf, noting that: "CEQA Guidelines section 15221 states that when a project requires compliance with both CEQA and NEPA, state agencies should use the Environmental Impact Statement (EIS) or Finding of No Significant Impact (FONSI) rather than preparing an Environmental Impact Report or Negative Declaration if the EIS or FONSI complies with the provisions of CEQA. Consistent with this section, this IS refers to appropriate sections of the final EA to avoid repetition of information. This IS was prepared in compliance with CEQA and assesses the environmental effects of the Proposed Project. To the extent that the Proposed Project incorporates conditions to ensure that potential impacts have been mitigated to insignificance, the applicant agreed to incorporate the conditions into the Proposed Project. The IS includes information necessary to comply with CEQA not included in the final EA."

[75] *League of Wilderness Defs.-Blue Mountains Biodiversity Project v. U.S. Forest Serv.*, 689 F.3d 1060, 1069 (9th Cir. 2012) ("*League of Wilderness*").

[76] *Id.* (internal citation omitted).

[77] *See City of Carmel-By-The-Sea v. U.S. Dep't of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997) ("The stated goal of a project necessarily dictates the range of 'reasonable' alternatives and an agency cannot define its objectives in unreasonably narrow terms").

[78] 40 C.F.R. § 1502.14.

[79] Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18026, 18027 (Mar. 23, 1981) (hereafter, "Forty Questions"), Questions 2a, 2b.

that cumulative effects be taken into account; and to satisfy the requirement that environmental consequences and mitigation measures be considered.

1. The alternatives in the DEIS are not sufficiently distinct from one another to allow reasoned analysis.

NEPA requires that the Commission offer and analyze a *variety* of project alternatives, and *consider* a reasonable amount of meaningful alternatives.[80] Within the alternatives, mitigation measures need to be described with a high level of specificity so all impacts, including intended or unintended consequences, are evaluated.

The alternatives the DEIS analyzes are: 1) No Action, 2) Licensees' Proposed Action, 3) Staff Alternative, and 4) Staff Alternative with Mandatory Conditions. Distinguishing the last two (3 and 4) does little to improve decision making: it just allows FERC staff to present its view of how it would condition the license in the absence of mandatory conditions that the license must include. There is little difference between 2 and 3: staff largely adopts the Districts' proposed action as staff's recommended action. The treatment of alternatives in this DEIS is consistent with FERC staff's pattern and practice of perfunctory selection and analysis of alternatives.[81]

This range of alternatives is not sufficiently varied. It contains no alternatives that would adequately mitigate project effects to the lower Tuolumne River and its river corridor. Important actions related to the project suggest at least two additional alternatives: the FEIS should include as alternatives a Conservation Groups' Flow, Habitat and River Management Alternative and a Low Exports Alternative, as recommended in Conservation Groups' REA Comments.[82]

The FEIS should also revise the Staff Alternative with Mandatory Conditions to include an alternative more specifically tailored to meet the objectives of the State Water Board's Bay-Delta Water Quality Control Plan (Bay-Delta Plan). Recent developments in the State Board's proceeding make this Plan more specific and feasible to analyze.[83]

2. The Staff Alternative with Mandatory Conditions is not a complete alternative.

A license incorporates those articles or conditions submitted by agencies other than FERC prescribed under various authorities, including FPA section 4(e) or 18, ESA section 7, CWA section 401(a). When timely submitted in the course of a licensing proceeding, these conditions are to be incorporated verbatim into the license, even if FERC might have established a different condition if left to its own discretion. In other words, a community of regulatory agencies shares the licensing decision.

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[80] *See Vt. Yankee Nuclear Power v. NRDC*, 435 U.S. 519 (1978) (emphasis added).
[81] *See, e.g.* FEIS for Merced River Project (eLibrary no. 20151204-4003), FEIS for the Yuba River Development Project (eLibrary no. 20190102-3000). The titles of the alternatives in these FEIS's are identical to those in the instant DEIS.
[82] Conservation Groups' REA Comments, pp 96-97; 98-105, p. 111.
[83] See discussion in Background section of these comments, *supra*.

The DEIS does not analyze the implementation of the State Water Board's adopted Lower San Joaquin flow objectives as an alternative, or consider the ramifications of what would change if the San Joaquin flow objectives adopted by the State Water Board on December 12, 2018 are implemented. Rather, the DEIS simply punts on flow requirements altogether if what it terms the preliminary § 401 conditions are incorporated in a certification, stating:

> Incorporation of these mandatory conditions into a new license would cause us to eliminate the following environmental measures that we include in the staff alternative: (1) implement the Districts' proposed interim minimum flows, spring pulse flows, flushing flows, and boating flows for the duration of any license ….[84]

The State Water Board's adopted lower San Joaquin flow objectives have flow requirements for the months of February through June and for the month of October. These flow objectives contain no requirements for the months of July-September and November-January**.** In its modeling of the lower San Joaquin flow objectives, State Water Board staff assumed existing FERC flow requirements in months not covered by the objectives. The elimination of all flow requirements from the Don Pedro license would leave six months with no required flows. This would not protect instream beneficial uses.

The FEIS must specify flows requirements for the months of July-September and November-January in an alternative that analyzes the State Water Board's preliminary § 401 conditions. It must also analyze how such flows would act with flows required by the State Water Board and with other measures to affect the environment and all beneficial uses.

3. The DEIS does not analyze alternatives to mitigate impacts to water supply of increased flow requirements for the lower Tuolumne River.

In scoping comments for the Don Pedro relicensing, Conservation Groups called out the need to evaluate groundwater in the Project area and opportunities to improve groundwater management:

> We request that Commission Staff study, develop and describe an alternative which provides for more efficient usage of groundwater by the Districts. The Districts previously stated that increased instream flow requirements could result in increased calls on groundwater. This alternative should be developed based on a baseline analysis of groundwater in the Districts' service areas, and the use of water from the project for groundwater recharge. *See* Section 1, *supra*, regarding to insufficient description of groundwater in the PAD and request for additional information relating to groundwater. This analysis would allow the parties to better understand the potential impacts of increased instream flow requirements, and to understand opportunities to improve groundwater management and water quality in order to reduce the potential effects of changes in project operations.[85]

[84] DEIS, p. 113/2-32.

[85] *Conservations Groups' Comments Regarding Pre-Application Document and Scoping Document 1, and Study Requests for the Don Pedro Project*, June 10, 2011, p. 16. eLibrary no. 20110610-5198.

In addition, Conservation Groups called out additional alternatives, summarized in the Commission's Scoping Document 2 (SD2) for the Don Pedro relicensing as follows:

- Districts complete the Gallery Project to supply water south of the Tuolumne River through a partially completed takeout at river mile 26.
- Commission staff study, develop, and describe an alternative which provides for more efficient usage of groundwater by the Districts.
- Commission staff study, develop, and describe an alternative that provides for reduced exports or reduced exports during critical lifestages for salmonids. This alternative also should include different methods of export diversion.
- Commission staff study, develop, and describe an alternative whereby the Districts implement measures to reduce agricultural diversions and increase agricultural efficiency.
- Commission staff study, develop, and describe an alternative whereby the Districts are paid by City of Modesto in lieu of reduced city diversions.
- Commission staff study, develop, and describe an alternative whereby the CCSF reduces its diversions from the Tuolumne River, replacing part of San Francisco's supplies with water diverted through the Contra Costa Canal for storage at an expanded Los Vaqueros Reservoir, or through new facilities to a new, alternative west-of-Delta storage reservoir.[86]

Staff dismissed any analysis of alternative water supply opportunities from inclusion in the DEIS by stating:

> The preceding recommended alternatives, that address the consumptive use of water in the Tuolumne River through construction of new structures or methods designed to alter or reduce consumptive use of water (bullets 2 through 6), are alternative mitigation strategies that could not replace the Don Pedro hydroelectric project. As such, these recommended alternatives do not satisfy the NEPA purpose and need for the proposed project and are not reasonable alternatives for the NEPA analysis.[87]

The Districts and CCSF equally opposed analysis and any examination of alternative water supply opportunities in the DEIS. The Districts made this section of SD2 a repeated theme in their AFLA,[88] and reiterated it in their March 15, 2018 Reply Comments to the REA Comments.[89] In its own March 15, 2018 Reply Comments to REA comments, CCSF devoted a section to arguing that the Commission should not evaluate opportunities to mitigate the impacts of increased flow requirements to surface water supply with groundwater improved groundwater management.[90]

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[86] Scoping Document 2 for the Don Pedro relicensing, July 25, 2011, p. 16.
[87] *Id*., pp. 16-17.
[88] See, for example, AFLA Exhibit E, Environmental Report, p. 3-1.
[89] *Reply Comments of Turlock Irrigation District and Modesto Irrigation District in Response to Comments, Recommendations, and Preliminary Terms and Conditions*, March 15, 2018, p. 15, eLibrary no. 20180315-5006. Citation to this section of SD2 became a preamble to multiple attachments to the Districts' Reply Comments as well.
[90] *Reply Comments of the City and County of San Francisco*, March 15, 2018, p. 20 ff. eLibrary no. 20180315-5318.

Scoping Document 2 and staff's consistently narrow view of the "NEPA purpose and need for the proposed project" treat license issuance solely according to its developmental purposes. This is squarely in conflict with the 1986 revision of § 4(e) of the FPA, which added the following sentence:

> In deciding whether to issue any license under this subchapter for any project, the Commission, in addition to the power and development purposes for which licenses are issued, shall give equal consideration to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of, fish and wildlife (including related spawning grounds and habitat), the protection of recreational opportunities, and the preservation of other aspects of environmental quality.[91]

Staff's view that a "reasonable" NEPA alternative would need to "replace the Don Pedro Project" does not give equal consideration to non-power and non-developmental purposes. Conservation Groups' "alternative mitigation strategies" are based on such equal consideration. Conservation Groups' alternative strategies are designed to allow instream flows sufficient to meet the project purposes of "the protection, mitigation of damage to, and enhancement of, fish and wildlife" while limiting the impacts to the purposes met by water supply (thus giving equal consideration to developmental and non-developmental uses).[92]

The DEIS's failure to give equal consideration to non-developmental purposes is explicit. The DEIS states:

> Under the resource agencies/stakeholders' recommendations, aquatic habitat conditions would be similar to those under the Districts' proposal; however, the Districts' proposal would continue to meet both the Districts' irrigation demands and CCSF's domestic water supply needs. Within these constraints, implementing the Districts' proposal would likely further benefit juvenile salmonids through the reestablishment of riparian vegetation and its associated increase in prey availability, which appears to be a major limiting factor in the lower Tuolumne River. Conversely, implementing any of the resource agency's base flow recommendations would result in extreme water supply reductions. Therefore, the Districts' proposed flow regime represents an equitable compromise between these competing beneficial uses, and would best meet FERC's mandate to balance both developmental and non-developmental resources.[93]

In fact, the ***only*** alternatives the DEIS considers are "within these constraints" of "continu[ing] to meet both the Districts' irrigation demands and CCSF's domestic water supply needs,"[94] as those demands have been defined by the Districts and CCSF. We disagree that any reduction in supply would result in a failure to meet demand. Based on Table 3.3.8-12, the Districts' (and staff's) proposed flows have no impact to water supply except in Critically Dry

[91] 16 U.S.C. § 797(e).
[92] "Before issuing a license, the FERC must consider not only the power and development issues involved with a project but also issues related to the project's impact on environmental quality." *Abenaki Nation of Mississquoi v. Hughes*, 805 F. Supp. 234, 237 (D. Vt. 1992), *aff'd*, 990 F.2d 729 (2d Cir. 1993)
[93] DEIS, p. 262/3-146.
[94] *Id.*

years, in which on average the irrigation deficiency would be 12% as opposed to 8% in the Base Case.[95] Based on Table 3.3.8-8, CCSF would have "some level of supply rationing" in 10 years out of the period of record, the same as in the Base Case, but in 5 of those years, the level of rationing would increase from 10% to between 11% and 20%.[96]

This is not "an equitable compromise." It is a continuation of the previous 50 years of project operation in which water supply and power generation have thrived while fisheries and other instream resources have drastically declined, relegated to what is left over once water supply needs are met.[97] The "Spill Management Plan" that was agreed to following a "dialogue" between the Districts and the USFWS is the perfect expression of this vision of balancing, in which "the Service proposes to focus on flow beyond the License Applicants [sic] needs."[98]

Conservation Groups' REA Comments extensively answered this incorrect interpretation of the requirements for analysis of alternatives under NEPA.[99] Despite this, the DEIS does not provide a reasonable range of alternatives, specifically, alternative flow scenarios that better protect fish and wildlife resources while still meeting actual water supply needs.

The FEIS needs to include a reasonable range of alternatives sufficiently distinct from one another. The Commission must evaluate reasonable alternatives that differ in their allocation of flow releases in an effort to better resolve the unresolved conflicts under the licensees' proposal and staff's recommendation. The DEIS does not meet this standard.[100]

4. The DEIS does not analyze a reduced exports alternative.

Conservation Groups' REA Comments, as in previous comments on scoping, recommended that the EIS evaluate a "Limited Delta Exports alternative" developed based on hypotheses from various specified sources. As stated in REA Comments,

> Since at least 2009, the Districts and CCSF have argued that flow increases in the Tuolumne River are relatively futile because the benefits in the river will be overwhelmed by conditions in the Delta downstream. A Limited Delta Exports

[95] DEIS, p. 337/3-421.
[96] DEIS, p. 531/3-415.
[97] We contest the alleged benefits to fisheries of the Districts' proposals, *infra*.
[98] Letter from Paul Souza, USFWS, to Kimberly Bose, Commission Secretary, October 1, 2018, changing USFWS preliminary 10(j) recommendations, p. 6, eLibrary no. 20181002-5009. The "Spill Management" descriptor is inapt. To our knowledge, Don Pedro Reservoir has spilled only twice, in 1997 and 2017, in each case degrading the unlined spill channel. The so-called "Spill Management Plan" is primarily a plan for managing flood flow releases, release of water to maintain Don Pedro Reservoir below the flood curve required by the Army Corps of Engineers, though USFWS defines it thus: "Flows released to the river in excess of required flows are referred to as 'Spill'". *Id.*, p. 8.
[99] Conservation Groups' REA Comments, "Legal Basis for Conservation Groups' Recommendations," esp. pp. 99-104.
[100] "It is not enough that the alternatives it considered are consistent with the need for the proposed action. Rather, FWS […] improperly excluded from consideration additional reasonable alternatives that would also meet the agency's objectives." *Pub. Emps. for Envtl. Responsibility v. U.S. Fish & Wildlife Serv*., 177 F. Supp. 3d 146, 154 (D.D.C. 2016)

alternative will break through this blame-the-other-guy paradigm and answer the question: what if downstream conditions were not a limiting factor?[101]

Alternative mitigations to improve the successful passage of salmonids from the Tuolumne River through the Delta are squarely within the scope of equal consideration for "the purposes of … the protection, mitigation of damage to, and enhancement of, fish and wildlife" under § 4(e) of the FPA, as quoted and cited above. The fact that FERC does not have the authority to require Delta operations does not absolve FERC of the responsibility to evaluate feasible alternatives.[102]

The FEIS should include a Limited Delta Exports alternative.

5. The FEIS should evaluate Conservation Groups' REA recommendations as a complete alternative under NEPA.

The DEIS analyzes many of the constituent elements that Conservation Groups recommended in REA Comments. But the DEIS conducts this analysis piecemeal, rather than as a complete alternative that balances developmental and non-developmental values in a way that is different than all the alternatives evaluated in the DEIS as alternatives under NEPA.

As written, the DEIS does not contain any alternatives that:

- adequately protect instream beneficial uses and public trust resources from project effects;
- consider an allocation of responsibility between the Districts and CCSF for meeting increased instream flow other than that described in the Fourth Agreement between those entities;[103]
- consider groundwater banking as part of a solution to water supply limitations of both the Districts and the City.[104]

The FEIS should include the Conservation Groups' combined recommendations as an alternative under NEPA in the FEIS, recommended in REA Comments as a "Conservation Groups' Flow, Habitat and River Management Alternative."[105] It should include such alternative in its Developmental Analysis. Such inclusion would help to cure the present flaw that the alternatives in the DEIS are not sufficiently distinct from one another.

[101] Conservation Groups' REA Comments, p. 115.
[102] *Id.*, esp. pp. 98-104 and 113-115.
[103] Contrast the SED, Appendix L, which assumes that the City will find alternative supplies. https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/2018_sed/docs/appx_l.pdf. This is just one of many possible options.
[104] The Complete CNRA VA Submittal to State Water Board, March 1, 2019, *op. cit.*, pdf p. 222, "Groundwater 'Banking'" describes the general concept of using groundwater banking to increase water available for instream flows in Dry and Critically Dry water years.
[105] Conservation Groups' REA Comments, p. 111.

C. The DEIS does not adequately consider and analyze cumulative effects and mitigation measures.

The FPA requires that the Commission consider cumulative impacts before licenses are issued.[106] Likewise, NEPA requires agencies to take a "hard look" at the environmental consequences of proposed actions, including their direct, indirect, and cumulative effects.[107] The required hard look encompasses effects that are "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative."[108] Ultimately, an EIS is, "by its very nature, a cumulative impacts analysis document."[109]

The Council on Environmental Quality defines cumulative effects as the impacts on the environment which result from "the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. ***Cumulative*** impacts can result from individually minor but collectively significant actions taking place over a period of time."[110]

In order to conduct a meaningful cumulative effects analysis, agencies must identify: "(1) the area in which the effects of the proposed project will be felt; (2) the impacts that are expected in that area from the proposed project; (3) other actions — past, present, and proposed, and reasonably foreseeable — that have had or are expected to have impacts in the same area; (4) the impacts or expected impacts from these other actions; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate."[111] The actions and impacts that agencies assess in the cumulative effects analysis include both those caused/controlled by the agency and those beyond the agency's control.[112]

Furthermore, an adequate cumulative effects analysis consists of more than "conclusory" statements that past, present, and future actions are not expected to significantly contribute to cumulative impacts in the project area.[113] Instead, in order to fulfill NEPA's goal of guiding informed decisionmaking, an EIS should give the public and agency decisionmakers the "qualitative and quantitative tools" needed to make an informed choice.[114]

Implicit in NEPA's demand that an agency prepare a detailed statement of cumulative effects of a proposed project is an understanding that the EIS will also discuss the extent to which such adverse effects can be avoided.[115] Accordingly, an EIS must discuss appropriate

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[106] *LaFlamme v. FERC*, 852 F.2d 389, 401 (9th Cir. 1986).
[107] *Robertson*, 490 U.S. 332, 348–50; *Fuel Safe Wash. v. FERC*, 389 F.3d 1313, 1327 (10th Cir. 2004); 42 U.S.C. § 4332(2)(c); 40 C.F.R. §§ 1502.16, 1508.7, 1508.8.
[108] 40 C.F.R. § 1508.8.
[109] *Resources Ltd. v. Robertson*, 35 F.3d 1300, 1306 (9th Cir. 1993).
[110] 40 C.F.R. § 1508.7; *LaFlamme*, 852 F.2d at 401; *Del. Riverkeeper Network v. FERC*, 753 F.3d 1304, 1319 (D.C. Cir. 2014); *Fuel Safe Wash. v. FERC*, 389 F.3d 1313, 1329-30 (10th Cir. 2004).
[111] *Del. Riverkeeper Network v. FERC*, 753 F.3d 1304, 1319 (D.C. Cir. 2014) (citing *Grand Canyon Trust v. FAA*, 290 F.3d 339, 345 (D.C. Cir. 2002)).
[112] *Resources Ltd.*, 35 F.3d at 1306.
[113] *See Del. Riverkeeper Network v. FERC*, 753 F.3d 1304, 1319-20 (D.C. Cir. 2014).
[114] *See Sierra Club v. FERC*, 867 F.3d 1357, 1371 (D.C. Cir. 2017).
[115] *See Robertson*, 490 U.S. at 351-52 (quoting 42 U.S.C. § 4332(2)(c)(ii)).

alternatives and mitigation measures.[116] Those measures "must be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated."[117] As one court noted, the Commission must not "cast significant environmental impacts aside in reliance on some sort of mitigation measures" which are anticipated but not evaluated.[118]

The DEIS fails to take a "hard look" at the cumulative effects of the projects and fails to discuss mitigation measures in sufficient detail to ensure that environmental consequences have been fairly evaluated.

The DEIS fails to include mitigation for project effects that it misidentifies as water supply effects, according to an incorrect separation of project effects from water supply and power generation. The DEIS fails to require monitoring of salmonids because there are effects on salmonids by factors other than the project. The DEIS fails to recommend flow and non-flow measures to address predation, in part because it follows the Districts' assertions regarding predation as the cause and not the consequence of environmental conditions. The staff alternative does not recognize the project effects on whitewater boating that could be mitigated by the BLM 4(e) condition relating to Ward's Ferry Bridge.

1. The analysis in the DEIS of project effects on floodplain inundation improperly excludes the water supply operation of project works from project effects and makes other assumptions that understate cumulative effects.

The DEIS contains an analysis of the days of floodplain inundation lost because of project diversions to storage in Don Pedro Reservoir. The DEIS explains the methodology: "To estimate the effect of Don Pedro Reservoir storage during spring runoff under proposed operations,**127** using the output from the Districts' operations model, we estimated the amount of storage (in acre-feet) retained in the months of March and April**128."**[119] Footnote 127 explains: "Note that this only estimates the effect of reservoir storage and not for any other consumptive uses." Footnote 128 states: "March and April are important months for fall Chinook rearing and are the months when floodplain inundation typically occurs."[120] Table 3.3.2-45 in the DEIS shows the results of this analysis.

This analysis significantly lowballs the effect of the project on floodplain inundation. Project effects on floodplain inundation are due to both storage and to diversion of water for

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[116] *See Sierra Club*, 867 F.3d at 1371; 40 C.F.R. §§ 1502.14(f), 1502.16(h), 1508.25(b). 40 C.F.R. § 1508.20 defines mitigation to include:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

[117] *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1380 (9th Cir. 1998) (citation omitted).

[118] *Am. Rivers v. FERC*, 895 F.3d 32, 53 (2018).

[119] DEIS, p. 318/3-202.

[120] *Id.*

consumptive uses. The full cumulative effect is significantly reduced inundation timing, frequency, magnitude, and duration of floodplain surfaces.

First, this analysis excludes project releases diverted into irrigation canals. Thus, Table 3.3.2-45 shows almost no effect on floodplain inundation in April, because diversions on the order of 3000 cfs have been taken off the top of the analysis. This analysis improperly and artificially truncates power and consumptive diversions and operations and discounts a month of substantial project effect. As Conservation Groups stated in REA Comments, "[r]egardless of the impetus for operational decisions, the effects that result from the operation of project works are by definition project effects, and are thus relevant for an analysis of environmental impacts. The disassociation of power and water supply functions is a fiction that cannot used to circumvent NEPA requirements."[121]

Second, this analysis excludes the months of February, May, and June. The fry lifestage of fall-run Chinook salmon is prevalent during February and has fewer food sources and less low velocity rearing area without access to floodplain habitat. Parr and smolts benefit from floodplain habitat in May and June, particularly in the downstream reaches of the Tuolumne River and in the San Joaquin River downstream of Tuolumne River confluence. Floodplain inundation also is critical to a variety of other non-salmonid fish and wildlife species. For example, the peak seed release period for Fremont cottonwood (Populus fremontii S. Watson ssp. fremontii) is May 15 (range April 23-June 10); for Goodding's black willow (Salix gooddingii C. Ball) is May 30 (range May 19-June 30); and for narrow-leaved willow (Salix exigua Nutt.) is May 31 (range May 8-June 30).[122] The peak seed release for these three common Central Valley riparian species coincides with floodplain inundation. More specifically, peak seed release for Fremont cottonwood coincides with unimpaired peak runoff, and peek seed release for Goodding's black willow and narrow-leafed willow coincides with the unimpaired spring flood recession.[123] Notably, riparian forests along rivers in the San Joaquin Basin, including the Tuolumne River, have experienced a decline, in part because under regulated regimes the timing of seed release no longer coincides with a spring snowmelt pulse that inundates floodplains.[124] These are but three examples of how highly altered and diminished floodplain inundation affects species in addition to salmon; there are likely a number of other species impacted by ongoing project operations. By omitting the months of May and June, staff is neglecting the need for mitigation of project effects on floodplain inundation.

This raises a third issue with this analysis. The analysis appears to discount the value of floodplain habitat in the river downstream of the spawning reaches of the river, and incorrectly concludes: "The loss of inundated area in the more upstream gravel-bedded reach is about half of the total river loss, which indicates that the overall effect of reservoir storage on potential floodplain rearing habitat in the lower river is not substantial."[125] On the contrary, floodplain habitat is all the more important for those juvenile salmon that migrate downstream relatively

[121] Conservation Groups' REA Comments, p. 103.
[122] Stella, J.C., J.J. Battles, B.K. Orr, and J.R. McBride. 2006. Synchrony of seed dispersal, hydrology, and locate climate in a semi-arid river reach in California. Ecosystems 9: 1,200, p. 1206
[123] *Id*.
[124] *Id*.
[125] DEIS, p. 319/3-203.

early, especially during high flows. Lack of cover and habitat complexity, as well as riffle habitat that will generate food, is more common in the "sand-bedded reach" downstream of RM 25 than upstream in the "gravel-bedded reach" on which the DEIS focuses. And, as described above, other non-salmon species such as Fremont cottonwood, Goodding's black willow, and narrow-leaved willow, also depend upon and are important to riverine and riparian ecosystems in downstream reaches.

Finally, the analysis averages the results within water-year types and across water-year types, telescoping the years with the largest reductions into the average. This analysis based on averages does not show how often river conditions are inadequate to support the life stages that are present at a given time. Years with infrequent or limited inundation are the years that project operations have the largest effects and during which flow measures could have the largest benefits.

The FEIS should evaluate all project effects on floodplain habitats and species, including the effects of project releases to irrigation facilities, in at least the months of February through June.

2. The DEIS fails to require monitoring of salmonids based on the Districts' representations about voluntary monitoring and the DEIS's truncated approach to cumulative effects.

The Staff Alternative does not recommend any salmonid monitoring for the new license.

The DEIS justifies not recommending salmonid monitoring, in part, because "the Districts already perform snorkeling surveys, RST monitoring, and weir monitoring (as a component of the 1995 Settlement Agreement), and propose to continue these measures under any new licenses issued for the projects."[126] However, the term of the 1995 Settlement Agreement "shall correspond with the term of the license."[127] The term of the Settlement has thus already expired.[128] The Commission can rely neither on a condition in an expired settlement agreement nor on a voluntary representation by the Districts that it shall conduct certain actions, let alone on actions whose performance is assumed in the DEIS without an actual performance obligation as the basis for its analysis.[129] The draft license articles in Appendix A of the DEIS

[126] DEIS, p. 324/3-208.

[127] 1995 Settlement, Condition 4, eLibrary no 19960806-0262. If one interpreted expiration to be coincident with new license issuance, the non-applicability of Settlement terms under the new license would still hold.

[128] The FERC license for the Don Pedro Project expired on April 30, 2016. Scoping Document 2 for the relicensing of the Don Pedro Project, p. 6.

[129] All relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the lead agency or the cooperating agencies, and thus would not be committed as part of the RODs of these agencies. Sections 1502.16(h), 1505.2(c). This will serve to alert agencies or officials who can implement these extra measures, and will encourage them to do so. 46 FR 18032 Because the EIS is the most comprehensive environmental document, it is an ideal vehicle in which to lay out not only the full range of environmental impacts but also the full spectrum of appropriate mitigation. However, to ensure that environmental effects of a proposed action are fairly assessed, the probability of the mitigation measures being implemented must also be discussed. Thus the EIS and the Record of Decision should indicate the likelihood that such measures will be adopted or enforced by the responsible agencies. Sections 1502.16(h), 1505.2. If there is a history of nonenforcement or opposition to such measures, the EIS and Record of Decision should acknowledge such

do not contain the above-mentioned salmonid monitoring activities. To the extent staff intends to rely on these mitigation measures, its recommendations should specify inclusion of these activities as license conditions, with the appropriate specificity on performance and compliance.

In addition, the staff alternative does not recommend additional monitoring to collect information regarding such issues as "annual anadromous salmonid escapement, pre-spawning mortality, spawning success, juvenile outmigration and abundance, and other parameters," on the grounds that, "we do not see how this information would specifically relate to project operations or how these data could be used to inform any future changes in these operations."[130]

This analysis is incomplete and shortsighted. Pre-spawn mortality is a biological indicator of the water quality of project flow releases. Escapement and spawning success is useful in evaluating the success of gravel augmentation and in estimating the number of juveniles in the section of river that project operations will affect. The timing of outmigration is related to the timing of pulse flows and other proposed elements of the staff alternative. The actual use of floodplains is necessary to understand the success of floodplain modifications that the Districts have proposed, even if FERC staff has, for unfounded reasons, not yet done so.

At the next level, the DEIS states: "Resource management, however, is an agency responsibility and not the Districts [sic]."[131] On its face, this is an effort to pass licensee responsibility to the agencies for funding. However, there is not a corresponding transfer of decision-making authority for implementing the timing and magnitude of flow releases to implement "resource management." In fact, the draft license article on pulse flows places the responsibility for resource management squarely on the Districts: "[t]he licensees must develop the spring pulse flow release plan in consultation with the Bureau of Land Management, U.S. Fish and Wildlife Service, National Marine Fisheries Service, California State Water Resources Control Board, and California Department of Fish and Wildlife."[132] The resource agencies (without the NGO's or other affected stakeholders) have an advisory role. With no salmonid monitoring requirements, the Districts would not have data on which to base that plan.

But the ultimate basis for dismissal of salmonid monitoring in the DEIS is encapsulated in the shibboleth that lack of certainty about cause and responsibility justifies the absence of data gathering:

> However, these data must be robust enough to separate any project effects from non-project effects on the monitored resource. … It is well known that the annual abundance of adult salmon and steelhead entering any river system can be highly variable and is influenced by ocean and estuary conditions, annual hatchery augmentation, state and

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opposition or nonenforcement. If the necessary mitigation measures will not be ready for a long period of time, this fact, of course, should also be recognized. NEPA requires that a record of decision state whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not; and provide that a monitoring and enforcement program must be adopted and summarized where applicable for any mitigation. § 1505.2(c); CEQ Memorandum for Heads of Federal Departments and Agencies, January 14, 2011.

[130] DEIS, p. 324/3-208.

[131] DEIS, p. 324/3-208.

[132] DEIS, p. 732/A-9.

> federal fishery management, and the operation of other dams and diversions in the watershed. All of these factors are outside of the Districts control and they should not be held responsible for any impacts to the fishery that may occur outside of the Tuolumne River. [133]

The Districts are responsible for mitigating project effects on salmon that are present in the river when and where the projects control flow and non-flow conditions. The EIS is responsible for identifying those effects so that the Commission can determine whether there are measures or alternatives that would mitigate those effects. Prior to issuing a license, the Commission must find that the license will be in the public interest and that resource protection over the next 30 to 50 years will be effective.

Enormous amounts of data are collected and managed for fisheries and areas downstream of the Tuolumne River every year, in particular by the fisheries agencies. Those agencies do not abstain from data collection because factors in the Tuolumne River upstream of its confluence with the San Joaquin are controlled by the Districts. All anadromous fisheries are influenced by multiple factors in multiple geographic locations. The Districts overwhelmingly control the operation of the lower Tuolumne River. It is reasonable and appropriate that they should monitor the fish in that reach of river. They are not being asked to monitor how many fish from their sub-watershed make it even to Mossdale on the San Joaquin River, 16.5 miles downstream of Tuolumne River confluence.

It is difficult enough to make decisions about river and fisheries management based on data. But it is far worse to make such decisions based on ignorance.

Prior to issuing the FEIS, staff should consider what monitoring should be required in the licenses to ensure the effectiveness of proposed mitigation measures.

3. The DEIS's recommendations regarding measures to mitigate predation are based on an improper analysis of cumulative effects.

The Districts advocate for treating the consumption of juvenile salmonids by predatory fish as a direct effect. The big fish eat the little fish, the bass eat the salmon and trout, and that's bad. They propose to kill as many bass as they can to solve the problem.

The Districts argue that they should not be required to use water to solve a problem that someone else created. They lay the blame at the feet of CDFW (as cited in the DEIS without direct citation to the source document by the Districts):

> In response to California DFW's recommendation for annual sediment placement to minimize predation habitat hotspots, the Districts state that predation is not a project effect; in fact non-native predators were introduced into the San Joaquin watershed by California DFW to advance its interest in recreational fishing. It is unreasonable for the

[133] DEIS, p. 324/3-208.

> agency to now recommend that the Districts use their water supply and spend their customers' money to address an impact caused by California DFW.[134]

In effect, the Districts treat the presence of predatory fish in the lower Tuolumne River as the original sin that absolves them from responsibility for having, over the past half century (and prior), substantially created and maintained many of the habitat conditions that support these predatory fish. Equally, the Districts reject responsibility for having created conditions that make it difficult for salmonids to avoid these predatory fish. The solution is simply to eliminate the bad fish.

The DEIS correctly dismisses[135] the Districts' unsubstantiated argument that 1) the Districts can successfully kill a certain percentage of predators in the lower Tuolumne River and that 2) this would, in the Districts' words, "result in a significant increase in survival of fall-run Chinook outmigrants, and as a result a substantial positive contribution to cumulative effects in the lower Tuolumne River."[136]

However, the DEIS proposes no alternative measures to reduce the effects of a predatory gauntlet that salmonids in the lower Tuolumne River must run. NEPA requires consideration of feasible mitigation of significant effects.

Based on evidence in the record, the most effective mitigation for predation is flow. Increased flow in the lower Tuolumne River during the critical March-May juvenile lifestage of salmon maintains cold water temperatures, making thermal conditions less conducive to warm water bass species and delaying the onset of their increased activity and spawning in response to increased water temperature. Colder water later into the spring delays the migration of bass up the Tuolumne River. Increased flow also makes it easier for salmonids to avoid predatory fish. This was clearly demonstrated in the Districts' Predation Study. As Conservation Groups highlighted in REA Comments:

> The limited sampling the Districts conducted in their 2012 Predation Study found that outmigration of juvenile salmon was more rapid and more successful at 2100 cfs than it was at 415 cfs or 280 cfs. 37 of 75 tagged salmon released at Hickman Bridge (RM 31.6) at a flow of 2100 cfs were detected at Grayson (RM 5.2). Of 75 tagged salmon released at Hickman Bridge at a flow of 280 cfs, only 1 was detected at Grayson. None of the tagged salmon released at Hickman Bridge at a flow of 410 cfs was detected at Grayson.[137]

Flow at sufficient levels also maintains floodplain habitat, providing greater cover for salmonids, greater area into which salmonids can spread out, and in some circumstances less accessibility for bass, particularly striped bass.

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[134] DEIS p. 296/3-180.
[135] DEIS, pp. 667-668/5-64 to 5-65.
[136] AFLA, Ex. E, p. 573/4-117.
[137] Conservation Groups' REA Comments, citing to Predation Study Report (W&AR-07), Table 5.4-2. (Version included as Part of Attachment C, file 82 of AFLA).

Another potential mitigation for predation is the infill of the special run pools. While the Districts did not create these pools, their reservoirs have helped maintain them by capturing sediment and large woody material. In the absence or partial absence of flow sufficient to make thermal and habitat conditions less conducive to bass, particularly spawning of largemouth and smallmouth, infill of the special run pools is a "physical solution" that could partially mitigate for project impacts. Under NEPA, a DEIS is required to evaluate feasible alternatives that would mitigate for the effects of the proposed action.[138] The DEIS acknowledges: "Removal of predator habitat by filling in the SRPs to reduce predator hot spots could reduce predator abundance in the Tuolumne River (as these represent preferred habitat for these species) and would not require direct removal of fish."[139] However, the DEIS dismisses consideration of such a measure on the grounds that their origin is not a project effect.

Equally, the DEIS acknowledges that improvement of floodplain habitat, and making it more accessible to inundation at lower flows, is a prospective physical solution to mitigate project effects in reducing flow.[140] The DEIS reports the Districts' view that floodplain habitat is not beneficial for salmonids and is not needed, and that the agencies and Conservation Groups' analysis, based on the ESHE model and others, finds that accessible floodplain habitat is essential. But the DEIS offers no analysis of the conflicting arguments or opinion on the value of floodplain habitat, simply dismissing it because staff does not consider the general condition of the floodplain a project effect.[141]

Most of the salmonids that emerge in the lower Tuolumne River and migrate downstream are eaten by other fish. The Districts propose to reduce the numbers of bass that eat the salmonids. The DEIS correctly does not recommend the Districts' predator reduction measures, finding that the effectiveness of such measures is unknown. The FEIS should evaluate alternative measures to make the riverine habitat less suitable for bass and other predatory fish, such as infill of the special run pools, increased spring flows (which both reduce water temperature and expand the migration corridor), and floodplain enhancement and inundation.[142]

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[138] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351-52 (1989) ("Implicit in NEPA's demand that an agency prepare a detailed statement on 'any adverse environmental effects which cannot be avoided should the proposal be implemented,' is an understanding that the EIS will discuss the extent to which such adverse effects can be avoided.") (quoting 42 U.S.C. § 4332(2)(c)(ii)); *Neighbors of Cuddy Mountain*, 137 F.3d at 1380 (stating that an EIS must discuss appropriate mitigation measures); *See* 40 C.F.R. §§ 1502.14(f), 1502.16(h), 1508.25(b), 1508.20.

[139] DEIS, p. 290/3-174.

[140] *Id.*

[141] *Id.*

[142] An "agency must, at a minimum, support its conclusions with studies that the agency deems reliable." *Lands Council*, 537 F.3d at 994. The agency must "explain the conclusions it has drawn from its chosen methodology, and the reasons it considered the underlying evidence to be reliable." *Id.* The agency will have acted arbitrarily and capriciously when "the record plainly demonstrates that [the agency] made a clear error in judgment in concluding that a project meets the requirements" of NEPA. *The Lands Council v. McNair*, 537 F.3d 981, 993 (9th Cir. 2008); *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1075 (9th Cir. 2011), followed by *Idaho Wool Growers Ass'n v. Vilsack*, 7 F. Supp. 3d 1085, 1089 (D. Idaho 2014), aff'd, 816 F.3d 1095 (9th Cir. 2016). *Davis Mountains Trans-Pecos Heritage Ass'n v. Fed. Aviation Admin*., Nos. 02-60288, 03-10506, 03-10528, 2004 WL 2295986, at *18–19 (5th Cir. Oct. 12, 2004 at *11–13 (because the Air Force relied on documents that did not present "a reliable picture of the impact of wake vortices on surface structures," the EIS "misinform[ed] both public participation and the Air Force's conclusion" and "thus this portion of the EIS is inadequate")

4. The analysis of Ward's Ferry Bridge and associated whitewater facilities discounts project effects and fails to recommend appropriate mitigation measures.

a. The DEIS improperly severs cumulative effects from project effects.

Conservation Groups' REA comments highlighted the effects of the fluctuating water surface elevations of Don Pedro Reservoir on whitewater boaters taking out at Ward's Ferry Bridge, noting:

> The Don Pedro Project is a complete unit of development that impacts conditions at Ward's Ferry Bridge through reservoir level fluctuations that typically range from 30 to 80 vertical feet between 750 ft. and 830 ft. msl. The constant change in water level, at this location, contributes to the erosion of the Tuolumne River shoreline; the erosion of pedestrian trails; at higher levels the reduction of usable shoreline; and at lower levels necessitates a steep hike up to reach the Tuolumne County road.[143]

The poor condition of shoreline trails and absence of shoreline facilities have forced Tuolumne River outfitters and the public to use Ward's Ferry Road and the bridge itself to stage equipment, vehicles and paddlers. Additionally, day users at Ward's Ferry Bridge compete for the few available "flat" areas at the location, which are on and immediately adjacent to the existing primitive trails down to the reservoir, which may be riverine depending on the stage height of the reservoir. Boaters and day-users alike have extremely limited shoreline access when the reservoir level is high. The August 2018 Bureau of Land Management revised 4(e) Condition for the Ward's Ferry Bridge takeout will mitigate for these project effects to whitewater boaters. Conservation Groups support this revised 4(e) Condition that BLM developed with our input and to which the Districts have agreed.

The DEIS discounts project effects on whitewater boating at Ward's Ferry Bridge. It discounts these effects because the timing or quantity of flows released upstream, the management of river permits by the Forest Service, and the management of Ward's Ferry Road by Tuolumne County also affect the conditions for whitewater boaters at Ward's Ferry Bridge. However, the fact that effects on whitewater boaters are cumulative does not relieve the Districts of their responsibility for mitigating what they do control at the site. For the past 50 years, fluctuating water levels in Don Pedro Reservoir have scoured the trails and local shoreline. The filling of the reservoir has created conditions where shoreline access is steep and uneven. In its current condition, the takeout at this irreplaceable location is unsafe for the uses it supports.

b. The DEIS fails to identify ongoing project effects on whitewater boating based on the annual inundation of five miles of whitewater due to project operation

The DEIS states:

[143] Conservation Groups' REA Comments, pp. 84-85.

> The agency and whitewater boating interests contend their conditions and recommendations are necessary because they believe a direct relationship exists between the project and whitewater boating, but as discussed above, none of the rationale provided by these entities describes what aspects of the project or its operation are responsible for such relationship.[144]

As described in Conservation Groups' REA Comments, the town of Jacksonville provided a takeout for whitewater boaters prior to Don Pedro Reservoir. Jacksonville was located on the Tuolumne River approximately five miles downstream of Ward's Ferry Bridge.[145] The annual diversion of water to storage in Don Pedro Reservoir inundates this section of river formerly available to whitewater boaters.

In addition to reasons described elsewhere in these comments and in oral comments on the DEIS by whitewater boaters and outfitters on March 26, 2019, the construction of safe and functional takeout facilities for whitewater boaters at Ward's Ferry Bridge is a reasonable mitigation for 50 years of annual project operation during which all or part of these five miles of river have been inundated and thus rendered unusable for whitewater boating.

The FEIS should acknowledge the project's effects on whitewater boaters and other users of the location. The FEIS should also modify the staff alternative to include BLM's revised 4(e) condition, agreed to by the Districts, that requires construction of safe takeout facilities at Ward's Ferry Bridge. Since the 4(e) condition does not mitigate for project effects to day use at this location, Conservation Groups request that the FEIS evaluate and recommend improvements that would afford such mitigation.

5. The DEIS fails to provide appropriate mitigation measures to remedy project effects on sedimentation and floodplain inundation.

The DEIS states that the staff alternative will require the Districts to "develop a plan to augment gravel annually for the term of any new license, because Don Pedro Reservoir would continue to capture gravel for the duration of the license."[146] Staff identifies the cause of the impact in this way:

> Under existing conditions, La Grange Diversion Dam (constructed in 1893), old Don Pedro Dam (completed in 1923), and new Don Pedro Dam (completed in 1971) trap all coarse sediment (>2 mm) and most fine sediment (<2 mm) originating from unregulated portions of the upper watershed. These projects also alter the frequency, magnitude, and duration of bed-mobilizing flows that influence bedload transport capacity in the lower Tuolumne River.[147]

However, the basis on which staff recommends the quantity of required mitigation gravel is convoluted. On the one hand, the DEIS states: "It is also apparent that the annual volume of

[144] DEIS, p. 468/3-352.
[145] Marty McDonnell, Sierra Mac River Trips, pers. comm. March 28, 2019.
[146] DEIS, p. 103/2-22.
[147] DEIS, p. 297/3-181.

gravel added to the river should be commensurate with the project's ongoing level of impact …."[148] On the other hand, staff arbitrarily limits the required mitigation to the amount of gravel required to maintain existing levels of salmon spawning habitat in only one 12.4 mile reach of the river: "[T]he coarse sediment management plan would focus on providing high quality spawning habitat for anadromous salmonids in those reaches that have the greatest potential to increase salmon and steelhead production (i.e., the first 12.4 miles downstream of the La Grange Diversion Dam)."[149]

Quantifying this already truncated mitigation, the DEIS explains:

> Although the 1,000 to 2,500 cubic yards per year estimate is well below the "unimpaired" annual bedload sediment delivery value described in McBain & Trush (2004) (approximately 18,800 cubic yards/year), the coarse sediment budget for RM 52.2 to RM 45.5 (Stillwater Sciences, 2013d), encompassing the primary salmon spawning reach immediately downstream of La Grange Diversion Dam, indicates that approximately 4,549–6,707 cubic yards (5,913–8,720 tons) of coarse bed material was lost from storage between 2005 and 2012 ….[150]

The DEIS thus arbitrarily and capriciously further reduces the required "coarse sediment" mitigation by about a factor of ten. In addition, the DEIS's accounting does not consider the fine sediment blocked by the projects, some of which would also, over time, contributed to the infill of the Special Run Pools. As described in Conservation Groups' REA Comments, annual capture of total sediment by project reservoirs is 233,728 cubic yards/year,[151] or 10 times the capture of coarse sediment alone.

The DEIS provides an apparent rationale for limiting mitigation to salmon spawning beds: "[R]iver channel impacts associated with gold and aggregate mining are not related to the projects and would not be required to fill the bedload traps/SRPs, as these impacts have no direct nexus to project operations." This discounts the fact that gravel capture by project reservoirs is an ongoing project effect in and of itself that requires mitigation in and of itself. The significantly reduced input of coarse and fine sediment and the significant reduction in bedload transport and related geomorphic processes is both a direct and cumulative project effect, regardless of the origin of the Special Run Pools. In addition, project facilities and their forebears have been blocking sediment from the lower Tuolumne River since La Grange Dam was constructed in 1897. It is also highly likely that gravel extracted from the gravel pits was used in the construction of Don Pedro Dam in the 1960's. The inability of the river to heal itself by transporting fine sediment and gravel is a project effect that should be mitigated.

Adding to the confusion of the DEIS regarding gravel is an opaque description of how actions by the Districts since 1995 have reduced the effects of the projects' gravel capture. The

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[148] DEIS, p. 300/3-184.
[149] DEIS, p. 299/3-183.
[150] DEIS, p. 299/3-183.
[151] Conservation Groups' REA comments, p. 72, citing to Att. C,, *Spawning Gravel in the Lower Tuolumne River Study Report*, W&AR-12, p. 6-2. Districts' study estimates 23,373 cubic yards/year of coarse sediment, over 4500 cubic yards greater than the figure from McBain and Trush (2004) cited in the DEIS.

DEIS appears to describe an "ongoing" gravel placement program by the Districts.[152] Yet to our knowledge, there has been no such placement since 2013, and that placement was implemented by CDFW and the Tuolumne River Conservancy. Although the Districts, Tuolumne River Technical Advisory Committee, USFWS Anadromous Fish Restoration Program, and California Bay-Delta Authority jointly developed the Coarse Sediment Management Plan, the Districts implemented no gravel augmentation projects in the Tuolumne River, despite a commitment to do so under the 1995 Settlement Agreement. The only link the Districts have to any gravel augmentation is that they acted as the Lead Agency for the purposes of complying with the California Environmental Quality Act for the River Mile 43 project, which was implemented by the Tuolumne River Conservancy.

Finally, the DEIS fails to account for the removal of large amounts of gravel from the lower Tuolumne River floodplain during the construction of Don Pedro Dam. As stated in Conservation Groups' REA comments, "In the 1960's, much of the tailings were excavated to provide construction aggregate for Don Pedro Dam. Much of this floodplain remains today as barren, unproductive surfaces, with exposed gravel/cobble and little or no soil layer and little or no native riparian vegetation."[153] The Tuolumne River Conservancy raised related issues of unmitigated effects of the construction of Don Pedro Dam in its comments in response to the REA Notice.[154] The reduced availability of coarse sediment along the lower river that could be mobilized in high flow events, and blockage of the lower river's ability to access coarse sediment at high flows, limits the supply of coarse sediment to the river: an *ongoing* project effect.

The FEIS should re-analyze project effects on the input and transport of both fine and coarse sediment and gravel. License conditions should specify amounts and timing of sediment replenishment, not simply leave those amounts to be determined. The FEIS should evaluate amounts that mitigate for past and ongoing, not just future, project effects.

In addition, the FEIS should evaluate license conditions to mitigate for the frequency and amount of floodplain inundation lost due to project operation. The FEIS should consider license conditions that include a calculated combination of instream flow and physical alteration of the streambed to restore the floodplain habitat lost caused by project operation. See Conservation Groups' REA Comments, pp. 55-67.

6. The analysis and proposed mitigations in the DEIS related to large woody material in the lower Tuolumne River are inadequate.

The DEIS describes project impacts on large woody material:

> [T]he projects remain a major impediment to the lower Tuolumne River developing properly functioning habitat related to LWM. When comparing the lower Tuolumne River with 19 other California salmonid-bearing streams, Albertson et al. (2013) found

[152] *Id.*
[153] Conservation Groups' REA comments, p. 73, citing to McBain and Trush (2000).
[154] REA Comments of Tuolumne River Conservancy, eLibrary no. 20180119-5142.

> that the lower Tuolumne River is limited in salmonid rearing habitat attributes, little to no LWM, no undercut banks, and only a thin riparian edge.[155]

Fisheries agencies recommended placement of specific quantities and sizes of large woody material in the lower Tuolumne River in order to restore that element of habitat to well-functioning condition. Conservation Groups and the State Water Board did not specify specific quantities and sizes, but described the goals in terms of function.

The staff alternative, however, proposes only to pass downstream some of the wood captured in Don Pedro Reservoir in the future:

> Rather than rely on these target densities, which are likely influenced by a variety of factors that may not be applicable to the Tuolumne River, it would be more appropriate to focus the LWM management plan on mitigating only the existing effects of the projects on wood recruitment. Consequently, LWM (meeting an agreed upon size criteria) should only be collected from Don Pedro Reservoir when it becomes available. It would not be appropriate for the Districts to either purchase or harvest LWM from other sources.[156]

The error of this construct is that the DEIS does not recognize that past project effects on wood recruitment contributed to the project's cumulative effects for which mitigation measures must be discussed. It is also wrong on a practical basis: it disregards the fact that wood that was previously blocked from the lower river would, if present, assist in capturing additional wood.

Don Pedro Reservoir, old Don Pedro Reservoir, and to a lesser extent La Grange Reservoir have impaired the recruitment of large wood to lower Tuolumne River for about 100 years. Because the condition of wood in the river absent these effects cannot be quantified, it is both appropriate and necessary to establish metrics by which to evaluate the effectiveness of large wood placement. While it is open to discussion what exactly the metrics should be, reliance on future placement of wood captured in Don Pedro Reservoir improperly disregards a century of ongoing project impacts.

The FEIS should evaluate a license condition to mitigate for past, present and future project effects on large wood that establishes target values and metrics to that would restore the large wood in the lower Tuolumne River to the desired functioning condition. Any license condition should require the Districts to obtain large wood to meet the volume of required pieces, appropriately sized.

D. The DEIS does not contain sufficient detail describing the proposed action.

NEPA requires agencies to take a good faith "hard look" at the potential consequences of a project, analyze its potential impact on the environment and identify unavoidable adverse consequences of the proposed action and of alternative actions.[157] In addition NEPA requires agencies to consider all substantial evidence when analyzing significant impacts and consider

[155] DEIS, pp. 305-306/3-189 to 3-190.
[156] DEIS, p. 307/3-191.
[157] *See* 42 U.S.C. § 4332(C).

impacts within the setting in which they occur.[158] NEPA's purpose is twofold: (1) to ensure that agencies carefully consider information about significant environmental impacts and (2) to guarantee relevant information is available to the public.[159]

NEPA emphasizes the importance of an open and public environmental assessment process.[160] The purpose of this requirement "is to make an agency consider the environmental effects of its actions; the impact statement requires the agency fully to disclose that evaluation, thus proving the evaluation has been made and warning interested parties of the probable environmental effects."[161] Given that NEPA is a procedural statute, and does not dictate agency decision, strict adherence to procedure is completely essential to ensuring the dual purposes of NEPA are properly carried out.

Without describing and discussing the project in sufficient detail, an agency cannot (1) carefully consider information about environmental impacts and (2) stakeholders cannot feasibly comment and participate in the public decision-making process. It is vital that proposed measures "be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated."[162] In this, this DEIS significantly lacks.

The very purpose of public issuance of an environmental impact statement is to "provid[e] a springboard for public comment."[163] The lack of information and detail in this DEIS has completely muted the opportunity for substantive and helpful public comment.

In sum, the DEIS fails to sufficiently analyze and offer enough detail on project impacts to allow public participation and comment. For these reasons, among others, Conservation Groups believe the required analysis, lacking in the DEIS, is defective under NEPA, thereby undermining reasoned judgment on the project and failing the required purposes of those environmental and information-gathering statutes.

1. The DEIS describes proposed flow conditions with insufficient detail to allow both understanding and analysis.

The DEIS, including Appendix A (draft license conditions for the Don Pedro Project), does not provide sufficient detail in describing proposed license articles for flow requirements in the lower Tuolumne River. The DEIS therefore lacks clarity in meaning, and its analysis lacks foundation, violating the purposes of NEPA. When relevant information "is not available during the [impact statement] process and is not available to the public for comment[,] ... the [impact

[158] *See* 40 C.F.R. § 1508.27(a)).
[159] *Robertson*, 490 U.S. at 349; *Ctr. for Biological Diversity*, 538 F.3d at 1185; *AquAlliance v. U.S. Bureau of Reclamation*, 287 F. Supp. 3d 969, 986 (E.D. Cal. 2018).
[160] *See Nat'l Audubon Soc'y*, 422 F.3d at 184; *N. C. Wildlife Fed'n v. N.C. Dep't of Transp.*, 677 F.3d 596, 604 (4th Cir. 2012)
[161] *State of La. v. Fed. Power Comm'n*, 503 F.2d 844, 875-76 (5th Cir.1974); *City of Ridgeland v. Nat'l Park Serv.*, 253 F. Supp. 2d 888, 895 (S.D. Miss. 2002)
[162] *Neighbors of Cuddy Mt. v. United States Forest Serv.*, 137 F.3d 1372, 1380 (9th Cir. 1998) (citation omitted).
[163] *DOT v. Pub. Citizen*, 541 U.S. 752, 768 (2004) (alteration in original); *N.C. Wildlife Fed'n*, 677 F.3d at 60.

statement] process cannot serve its larger informational role, and the public is deprived of [its] opportunity to play a role in the decision-making process."[164]

Appendix A describes the determination of water-year types in proposed article 409 ("Minimum Flows below La Grange Diversion Dams") as follows: "Table 1. Required minimum flows in cubic feet per second by water year type, as determined in accordance with the 60-20-20 San Joaquin River Index."[165] However, the proposed condition does not state when licensees shall determine the water-year type for any given time period. It is unclear if the water-year type is to be determined once a year (and if so, when), updated each month in the months of February through May based on DWR Bulletin 120, or whether the water-year type for October through January is to be updated based on the DWR's final water-year determination in October based on actual inflow. There can be significant month-to-month changes in the 60-20-20 Index in the February-May time period. There can be substantial divergence from the water-year type designation from the previous October or May to actual hydrological conditions in February and subsequent months, and certainly from April 10 (date of April Bulletin 210) through the following March.

The AFLA proposes: "The current method used by TID operators to determine the water year type and the required flow release schedule would remain unchanged."[166] The AFLA describes current water-year type determination as follows: "TID operators currently determine the water year type by early April and issue, upon direction provided by resource agencies, the schedule of releases for the subsequent April 15 to April 14 of the next calendar year."[167] The DEIS does not specify if this approach is proposed, or other.

Conservation Groups called out the inability to adjust water-year types in REA Comments, noting an earlier request to SFPUC and the Districts to update the model to allow monthly adjustment in February-May.[168] It makes no sense not to adjust the water-year type monthly once a year. Conservation Groups recommend monthly adjustment beginning with the February Bulletin 120 and setting the final water-year type based on the May Bulletin 120. Conservation Groups also recommend that the Commission order revision of the Don Pedro operations model to include this adjustment, in order to allow more accurate evaluation. The model already contains the data in the 60-20-20 tab that is necessary to support such modification. Operations models in the Merced River Project and Yuba River Development Project relicensings include the ability to adjust February-May water-year types.

In addition to lack of clarity about water-year types in proposed license Article 409, proposed Article 410 ("Spring Pulse Flow Release Plan") lacks clarity about how the required spring pulse flows intersect with any flood releases that may otherwise occur in the spring.[169] It is not clear whether the stated volumes for required spring pulse flows are reduced on a one-to-one basis by any flood flows, or if there are temporal limits on any flood flows that would allow

[164] *N. Plains Res. Council, Inc.*, 668 F.3d at 1085; *N.C.; Wildlife Fed'n v. N.C. Dep't of Transp*., 677 F.3d 596, 604-05 (4th Cir. 2012).
[165] DEIS, p. 730/A-7.
[166] AFLA Ex E, p. 599/5-20.
[167] *Id.*, n 125.
[168] *Conservation Groups' REA Comments*, p. 18.
[169] DEIS, pp. 731-2/A-8 to A-9.

reduction of the volume of required pulse flows. For example, suppose the required spring pulse flow release is 100,000 af, and there is a 100,000 af flood release in February. Would the volume of the spring pulse flow release be reduced due to that earlier flood release, and if so, by how much?

Unless the license specifies clearer rules that anticipate and address such potential overlap, the spring pulse flows in Wet and Above Normal years will generally telescope into flood flows, offering no actual increase in flows and likely little to no opportunity to shape the timing of flow pulses. The same may be true in some Below Normal years. The proposed license condition would punt this issue to a plan, which, moreover, would exclude the participation of stakeholders that are not part of a resource agency. This is exactly the type of open-ended planning that recent FERC policy has sought to avoid. It also thwarts the statutory purpose of the environmental impact assessment: the lack of clarity in this analysis is precisely the kind of decision-making NEPA seeks to avoid. "Clarity is at a premium in NEPA because the statute ... is a democratic decisionmaking tool...."[170]

The FEIS should clarify water-year types and consider Conservation Groups' recommendations regarding monthly updates. The FEIS should also define the rules by which the proposed spring pulse flows would be distinguished from flood flows.

2. The DEIS proposes future development of a drought plan for the projects, impermissibly deferring to the future a key element of the proposed action that affects the nature and extent of project effects.

The DEIS proposes license Article 406 ("Drought Management Plan"), which licensees are to develop in association with resource agencies and submit to FERC within 6 months of license issuance. The DEIS explains:

> The plan must include, at a minimum, the following:
>
> (1) a definition of drought conditions based on available data specific to the project (e.g., current storage in Don Pedro Reservoir, watershed snowpack and soil moisture conditions, current and projected operating requirements for instream flows and water supply deliveries, weather forecasts, and other project operation limitations);
> (2) which license requirements would be temporarily modified during drought conditions; and
> (3) how the project would be operated when drought conditions occur. [171]

Drought conditions would presumably occur in Critically Dry water years, or in sequential Dry and Critically Dry water years. As described in the discussion of alternatives,

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[170] *See N.M. ex rel. Richardson v. BLM* 565 F.3d 683, 708 (10th Cir.2009); *Native Ecosystems Council v. United StatesForest Serv.*, 418 F.3d 953, 964 (9th Cir.2005); *Sierra Club v. United States Army Corps of Eng'rs*, 701 F.2d 1011, 1030 (2d Cir.1983); *see also Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (holding that an agency acts arbitrarily and capriciously when it fails to "examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made"); *N.C. Wildlife Fed'n*, 677 F.3d at 603.

[171] DEIS, p. 728/A-5.

supra, the action as proposed by the Districts and largely accepted by staff has virtually no effects on water supply, even accounting for previous droughts. See tables 3.3.8-8 and 3.3.8-12. The proposed action was in fact framed to avoid loss of water supply in droughts, and was largely adopted by staff on this basis. Now staff proposes to allow the Districts and resource agencies to further erode already meager flow requirements with an as yet undefined drought plan.

The DEIS evaluates the effects on water supply of the proposed action and of the flows proposed by resources agencies and Conservation Groups without reference to a default off-ramp under a drought. Thus, in each case, the DEIS overstates the water supply effects of various proposals. Default deference to a plan that is yet to be developed invalidates the analysis under NEPA. "[A]fter-the-fact disclosures [do not] assuage the harms incurred during the NEPA process."[172] Any drought plan that would reduce flow requirements must be fully described and analyzed for its specifics, under NEPA. The FEIS would then need to then re-evaluate its balancing of developmental and non-developmental resources based on the flow conditions it actually proposes to include in the license.

In counterpoint, Conservation Groups propose a specific example of a draft drought measure that could be deployed to reduce the water supply impacts of the State Water Board's preliminary § 401 conditions, assuming implementation of the State Water Board's adopted lower San Joaquin River flow objectives. This would help to complete the incomplete "Staff Alternative with Mandatory Condition. We present this draft drought measure in Attachment 1 to these comments, and recommend that the FEIS consider this measure both substantively and as an example of the elements that a drought measure should contain.

3. **The DEIS fails to place any sideboards on the amount of gravel required as part of the Coarse Sediment Management Plan, improperly deferring a basic decision and precluding reasoned analysis.**

The DEIS proposes license condition Article 413 ("Coarse Sediment Management Plan") that makes absolutely no quantification of the proposed amount of coarse sediment the licensees must place in the lower Tuolumne River in order to comply. The condition states: "[T]he amount and locations for coarse sediment augmentation [are] to be developed in consultation with the agencies listed below."[173]

While development of some elements of a plan within a certain period of time may be legally defensible, a complete punt on the amount of gravel to be placed is not. It is not possible to evaluate whether the condition will achieve any outcome without this basic definition. In violation of NEPA, the DEIS omits the most basic detail on this Coarse Sediment Management Plan, much less "sufficient" detail to satisfy statutory obligations. The Commission cannot find that the license is in the public interest without such evaluation.

The estimated costs for such a program thus also lack foundation. It is completely upside down and contrary to NEPA to try to divine the appropriate amount of gravel required by reverse

[172] *N.C. Wildlife Fed'n,*, 677 F.3d at 605.
[173] DEIS, p. 733/A-10.

engineering it based on the cost estimated in the DEIS. In addition, it is unclear whether such costs would telescope into the mitigation fund proposed pursuant to the USFWS's revised 10(j) recommendation, potentially incentivizing the Districts to double-count mitigations by using one mitigation to pay for another.

The EIS needs to define the amount of gravel required for the Coarse Sediment Management Plan and put a realistic cost on it based on a description of the need and the reasonable expectation that the coarse sediment management plan will fill it. Licensees should not be allowed to finance it with funds from another mitigation. As noted *supra*, Conservation Groups dispute staff's understatement of the need.

4. **The DEIS fails to place any sideboards on the amount of large woody material required as part of the Large Woody Material Management Plan, improperly deferring a basic decision and precluding reasoned analysis.**

The DEIS proposes license Article 414 ("Large Woody Material Management Plan") that, like the Coarse Sediment Plan, makes absolutely no quantification of the proposed amount of large woody material the licensees must place in the lower Tuolumne River in order to comply.[174] The Large Wood Plan is worse than the Coarse Sediment Plan in the sense that it does not even specify the size or other characteristics of the wood. As with proposed License Article 13, the Coarse Sediment Plan simply leaves all detail to a future negotiation between licensees and resources agencies, with no opportunity for input from other stakeholders, providing no guidance or metrics for success.

Everything that is wrong with the Coarse Sediment Plan, as described in subsection 3 *supra*, is wrong with the Large Woody Material Management Plan.

The EIS needs to define the amount and characteristics of the wood required for the Large Woody Material Management Plan and put a realistic cost on it based on a description of the need and the reasonable expectation that the plan will fill it. Licensees should not be allowed to finance it with funds from another mitigation. As noted *supra*, Conservation Groups also dispute staff's understatement of this need.

As discussed *supra*, the harm NEPA attempts to prevent in requiring an EIS is that, without one, there would be little to no information about prospective environmental harms and potential mitigating measures available to decision-makers and the public.[175] For this reason, NEPA procedures emphasize clarity and transparency of process over particular substantive outcomes, guaranteeing that input will be solicited, voices will be heard, and reasoned decision-making will occur.[176] With the lack of information, detail, and proper description in this DEIS, that process has not occurred.

[174] DEIS pp. 734-5/A-11 to A-12.
[175] *Winter v. NRDC*, 555 U.S. 7, 23 (2008)
[176] *See Pub. Citizen*, 541 U.S. at 756-57,; *Robertson*, 490 U.S. at 350-51; *see also Or. Natural Desert Ass'n v. BLM*, 625 F.3d 1092, 1121 n.24 (9th Cir.2010); *N.C.Wildlife Fed'n*, 677 F.3d at 603.

5. The DEIS improperly relies on a vague commitment by the Districts to implement a spring flow recession following "spills" to find a benefit to riparian recruitment.

Conservation Groups, the Bay Institute, and several resource agencies recommended that the new license include requirements for gradually receding flows at the end of spring and/or beginning of summer, in order to promote recruitment of desirable riparian vegetation, especially cottonwood trees.

The DEIS describes the general benefits of spring recession flows to riparian vegetation.[177] The DEIS also describes the project effects of the absence of such flows: "The Don Pedro and La Grange Projects have historically operated without a flow recession that would allow riparian forests to regenerate, resulting in a degraded riparian system that is dominated by older trees and shrubs."[178] The DEIS describes a metric to evaluate recession rates: "In general, an ideal recession rate for seedling germination would be 2.5 cm per day drop in stage from April 1 to July 15 (Stillwater Sciences, 2006). Multiple studies suggest that a recession rate greater than 2.5 cm per day would prevent Fremont cottonwood seedling recruitment…"[179]

The DEIS acknowledges that the Don Pedro Operations Model does not do a good job of simulating the frequency of spring flow recession, noting: "We suspect that the poor performance of the recommended flow proposals for achieving recommended recession rates is due to the model's need to balance water supply and environmental resources among competing needs."[180] Nonetheless, the DEIS displays a comparative analysis of how various flow recommendations would perform in terms of spring flow recession based on output from the model (Table 3.3.3-5).[181]

Given these acknowledged limitations of the Don Pedro Operations Model, the only substantive basis for comparison of the merits of flow recessions in various flow recommendations is to evaluate what those recommendations actually propose to require, and to compare those requirements with the identified metric of a river stage drop of 2.5 centimeters per day. However, the Districts don't propose a recession rate, and the staff alternative does not propose to require one, or even to establish a metric, as a license condition. Nonetheless, the DEIS concludes that the Districts' flow regime and spill management plan would be beneficial:

> Given the relatively frequent (2–10 year) recurrence of inundation events lasting at least 30 days (HDR and Stillwater Sciences, 2017), and the Districts' commitment during spill years (60 percent of years during the 1971–2012 modeling period of record) to make reasonable efforts to shape the descending limb of the snowmelt runoff hydrograph to

[177] DEIS, p. 376/3-260.
[178] *Id.*
[179] *Id.*
[180] DEIS, p. 378/3-262.
[181] DEIS, p. 379/3-263.

mimic natural conditions, the Districts' proposed flow regime would benefit riparian resources.[182]

The DEIS adds that the Districts' efforts would be shaped by adaptive management by the Districts and agencies: "[A]n adaptive management approach to pulse-flow timing and duration, and recession rate management by the Districts, based on real-time knowledge of the project operation, would provide necessary flexibility for balancing resource needs and satisfying riparian restoration objectives."[183]

In sum, as cited above, the DEIS finds a "benefit" to riparian vegetation of the Districts' proposed flow measures based on an unenforceable "commitment," "flexibility," and no measurable objectives. One cannot base a finding on what the licensees at the advice of the agencies might do, will try to do, or will have the flexibility to do. This finding in the DEIS of benefit to riparian vegetation is thus not supported by substantial evidence.

The Districts' commitment is not backed up in a proposed license condition. Instead, the proposed spill management article would require future development of a plan by the agencies. It would also require annual proposal by the Districts to the agencies and the Commission, in February, of the Districts proposal for a spill flow schedule.[184] Such a framework is completely impractical given the breadth of variability surrounding future spring runoff as of February of any given year. In addition, such annual proposals are subject to change by the Districts, as explicitly acknowledged in the DEIS: "The Districts note that the spill management plan is intended as a discretionary plan, subjected to the primary project obligations and responsibilities."[185]

The FEIS should evaluate a license condition that would require spring recession flows in the lower Tuolumne River of a defined rate and volume, in defined water year types, as an enforceable license condition. The FEIS should base any findings regarding the effects of the proposed action on riparian resources based on the requirements in the recommended license condition.

IV. CONCLUSIONS IN THE DEIS VIOLATE NEPA BECAUSE THEY LACK EVIDENTIARY BASIS AND ARE THEREFORE ARBITRARY AND CAPRICIOUS.

The purpose of NEPA is to ensure an agency will have detailed information on significant environmental impacts when it makes its decisions and to guarantee that this information will be available to a larger audience[186] A DEIS must further be "concise, clear, and to the point" and supported by "evidence that the agency has made the necessary environmental analyses."[187]

[182] DEIS, p. 378/3-262.
[183] DEIS, p. 380/3-264.
[184] DEIS, pp. 732-733/A-9 to A-10.
[185] DEIS, p. 264/3-148.
[186] *Robertson*, 490 U.S. at 349. 40 C.F.R. §§ 1502.1, 1502.14.
[187] 40 C.F.R. §1502.1. *See also LaFlamme*, 945 F.2d at 1128.

"Implicit in NEPA's demand that an agency prepare a detailed statement on 'any adverse environmental effects which cannot be avoided should the proposal be implemented,' is an understanding that the EIS will discuss the extent to which such adverse effects can be avoided."[188] Accordingly, an EIS must discuss appropriate mitigation measures.[189] Mitigation is defined to include:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.[190]

Decisions made in a FERC licensing process must be supported by "substantial evidence" in the record of the licensing proceeding, including the DEIS.[191] The substantial evidence presented describes the impacts of the project (and any alternatives for facility design or operation) on the electricity system, environmental quality, recreation, and other beneficial uses of the lands and waters.[192] The record, based in evidence, must support a decision whether the project is best adapted to a comprehensive plan of development of the basin over the license term, which is 30 to 50 years.[193] This evidence must be written and subject to rebuttal (or support) by any participating party.

Applied in the context of FERC decision making, "substantial evidence" means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.[194] FERC must demonstrate that its decision in this licensing process is based on "substantial

[188] *Robertson*, 490 U.S. at 351-52 (quoting 42 U.S.C. § 4332(C)(ii)).
[189] *See* 40 C.F.R. §§ 1502.14(f), 1502.16(h), 1508.25(b).
[190] 40 C.F.R. § 1508.20
[191] *See* 16 U.S.C. § 825; *Bangor Hydro-Electric v. FERC*, 78 F.3d 659, 663 (D.C. Cir. 1996).
[192] *See* 16 U.S.C. §§ 803(a)(1), 808(a)(2). The APA's "substantial evidence" and "arbitrary and capricious" standard connotes the same substantive standard of review. The substantial evidence standard is "only a specific application of [the more general arbitrary and capricious review], separately recited in the APA not to establish a more rigorous standard of *factual* support but to emphasize that in the case of formal proceedings the factual support must be found in the closed record as opposed to elsewhere." *Ass'n of Data Processing Serv. Orgs., Inc. v. Bd. of Governors of Fed. Res. Sys.*, 745 F.2d 677, 683 (D.C.Cir.1984). *See also Md. People's Counsel v. FERC*, 761 F.2d 768, 774 (D.C. Cir.1985). The term "arbitrary and capricious" more naturally fits a determination of a mixed question of fact-finding and policy implementation. *See, e.g., Kisser v. Cisneros*, 14 F.3d 615, 619 (D.C.Cir.1994) (in applying the "arbitrary and capricious" standard a court examines whether there is a rational connection between the facts and the choice made).
[193] *See id*. In any finding based on the record, a federal agency must identify the facts on which it relies, explain why these facts are reliable and relevant, then demonstrate how the facts support its decision. *See* 5 U.S.C. §§ 556, 557, 706(2); *Motor Vehicle Manufacturers Ass'n* , 463 U.S. 29; *Burlington Truck Lines v, United States*, 371 U.S. 156 (1962).
[194] *State of Cal. ex rel. Lockyer v. FERC*, 329 F.3d 700 (9th Cir. 2003).

evidence" and that it "considered all of the germane factors" by providing "a reasoned explanation."[195]

The APA's "substantial evidence" and "arbitrary and capricious" standard connotes the same substantive standard of review. The substantial evidence standard is "only a specific application of [the more general arbitrary and capricious review]."[196] In any finding based on the record, FERC must identify the facts on which it relies, explain why these facts are reliable and relevant, then demonstrate how the facts support its decision.[197] For various reasons explained herein, this DEIS fails to achieve that reasoned explanation.

As drafted, and for the reasons that follow, this DEIS does not allow for a re-licensing decision taken based on a reasoned explanation and substantial evidence, and it is therefore arbitrary and capricious.

A. The DEIS provides neither information nor analysis that shows that the Districts' proposed flow measures have comparable benefits to aquatic habitat conditions as the flow measures proposed by agencies and Conservation Groups.

The DEIS concludes that the aquatic benefits of Districts' proposed flows and flows proposed by the resource agencies and Conservation Groups have comparable aquatic benefits:

> It is also evident that mimicking the natural hydrographs would likely create more normative ecological processes that would benefit native resident and anadromous fish populations and their habitat.…"[198]

> While returning the flow regime in the lower Tuolumne River to a condition that more closely mimics the magnitude, duration, and timing of the unimpaired hydrograph would be expected to provide multiple benefits to aquatic resources, the Districts' proposed flow regime would also improve aquatic habitat conditions downstream of the La Grange Diversion Dam compared to the base case, and would continue to meet existing and projected water demands in the region. …

> Under the resource agencies/stakeholders' recommendations, aquatic habitat conditions would be similar to those under the Districts' proposal; …[199]

However, the DEIS contains no analysis at all of the "multiple benefits" of a flow regime that more closely mimics the natural hydrograph. It contains no description of the above-cited "more normative ecological processes that would likely benefit native anadromous fish populations and their habitat." Instead, the DEIS simply points out the ascribed benefits of the

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[195] *Idaho Rivers United v. FERC,* 189 F. App'x 629, 634 (9th Cir. 2006).
[196] *Ass'n of Data Processing Serv. Orgs., Inc. v. Bd. of Governors*, 745 F.2d 677, 683 (D.C. Cir. 1984). *See also Md. People's Counsel v. FERC*, 761 F.2d 768, 774 (D.C. Cir. 1985)
[197] *See* 5 U.S.C. §§ 556, 557, 706(2); *Motor Vehicle Manufacturers Ass'n* , 463 U.S. 29; *Burlington Truck Lines*, 371 U.S. 156..
[198] DEIS, p. 261/3-145.
[199] DEIS, p. 262/3-146.

agencies' and Conservation Groups' recommended flow regimes as measured with metrics such as habitat modeling (relying on weighted usable area, or WUA) that do not consider the benefits of a more natural hydrograph.

In order to provide analysis of how "more normative ecological processes" would benefit the aquatic environment, the Final EIS should start with evidence in the record such as the 2010 *Delta Flow Criteria Report* that describe and analyze the benefits of a more natural flow regime.[200] For the same reasons, staff should also review and analyze the final *Substitute Environmental Document for Phase I of the update of the Bay-Delta Water Quality Control Plan* (2018)[201] and the *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (2018).[202] Staff should explicitly contrast the benefits that these documents describe from more natural flows in the Tuolumne River with the benefits staff ascribes to Districts' flow recommendations.

Without a description of the benefits of a more natural flow regime, it is not possible to conduct a reasoned analysis that compares flow regimes or that evaluates the tradeoffs between flows and developmental values.

B. Staff's extensive reliance on the Districts' Chinook population model both contradicts staff's rejection of the predation control measures and accepts other model criteria without discussion or analysis.

The DEIS describes the Districts' proposed measures for preventing migration of predatory fish into the upper reaches of the lower Tuolumne River and for "predator control and suppression."[203] These measures include construction of a permanent "fish counting/barrier weir" near RM 25.5, just downstream of the proposed infiltration galleries, to prevent the upstream migration of black bass, striped bass and other species that eat juvenile salmon. These measures also include direct suppression of bass and other target species, particularly in the vicinity of the proposed barrier weir.[204]

Staff lists these measures in the DEIS under "Other Measures Not Recommended by Staff," stating: "[W]e conclude that while the Districts' proposed measures would likely reduce predator abundance in the lower Tuolumne River, and theoretically decrease the amount of

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[200] State Water Resources Control Board, 2010, *Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem.* Submitted into the record by National Marine Fisheries Service, April, 2018 as document # 357, eLibrary no. 20180402-5349

[201] State Water Resources Control Board, 2018, *Substitute Environmental Document for Phase I of the update of the Bay-Delta Water Quality Control Plan*, webpage: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/2018_sed/ . It is the understanding of Conservation Groups that the State Water Board will be submitting this document into the record for the Don Pedro and La Grange relicensing proceedings.

[202] State Water Resources Control Board, 2018 *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary*, https://www.waterboards.ca.gov/plans_policies/docs/2018wqcp.pdf. It is the understanding of Conservation Groups that the State Water Board will be submitting this document into the record for the Don Pedro and La Grange relicensing proceedings.

[203] DEIS, p. 287/3-171.

[204] *Id*., pp. 286-287/3-170 to 3-171.

predation on juvenile Chinook salmon, it is not known if they would have a measurable benefit to Chinook salmon or *O. mykiss*."[205]

Staff cites to DWR's removal of predatory fish near Clifton Court Forebay in the Sacramento-San Joaquin Delta, subsequent to which "it did not detect any reductions in salmon mortality." Staff also notes that the proposed weir might create "a migration barrier to salmonids."[206]

Conservation Groups agree with staff's analysis that the actual benefit to salmonids of the Districts' predator control and suppression measures is unknown. More specifically, it is not known:

- whether the Districts can capture bass in the target quantities;
- whether capture of bass will reduce predation to provide a measurable population benefit;
- whether thinning bass on year will create a population rebound for bass in the following year because of additional fecundity caused by increases in available prey and habitat;
- how a permanent weir would affect the population dynamics of bass upstream and downstream;
- whether a permanent weir would create a narrowing of the gauntlet for salmonid migration, similar to Daguerre Point Dam on the Yuba River.[207]

The benefit to salmonids, and the degree of benefit if there is any, is theorized. It is not simply uncertain. It is unknown.

Conservation Groups and fisheries agencies have called attention to the unknown value of predator control throughout this proceeding.[208] Districts have not provided practical examples of successful predator control programs, particularly on a comparable scale. The AFLA simply asserts that predator control will be effective.[209]

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[205] DEIS, p. 667-668/5-64 and 5-65.

[206] *Id*. Some colleagues have hypothesized that the primary motivation for the proposed weir is to create hydraulic head to improve the operation of the infiltration gallery immediately upstream. Jurisdictional agencies should carefully consider FERC staff's concern about creating a vector for predation should the Districts move forward with a weir for any purpose.

[207] *See* NMFS, *Final Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-run Chinook Salmon and Central Valley Spring-run Chinook Salmon and the Distinct Population Segment of Central Valley Steelhead* (79 FR 42504), 2014.

[208] *See, e.g.*, Conservation Groups' Comments on the Draft License Application, eLibrary 20140224-5095, p. 8:

> We also continue to have concerns about the accuracy of the Tuolumne River Chinook Salmon Population Model (W&AR-06), as we expressed in our ISR comments. *See id.*, p.4. The model's presumption that juvenile rearing habitat is not limiting for Chinook, in favor of the theory that predation is the primary cause of low out-migrant success, biases the model and potential outcomes against actions to improve juvenile habitat.

[209] *See, e.g.*, AFLA, Ex. E, p. 252-255/3-177 to 3-180, p. 578/4-117.

The Districts rely on their fish population model for Chinook salmon to estimate the effectiveness of the various measures they propose.

> Estimates of the effects of the Districts' Preferred Plan on fall-run Chinook salmon in the Tuolumne River are developed by incorporating into the in-river Chinook population model the changes proposed to occur under the Districts' Preferred Plan. Each element of the Preferred Plan that represents a change to the existing Base Case conditions is input as a change to the relevant parameter(s) in the model.[210]

The AFLA presents the results of the Chinook population models for the elements of flow, gravel cleaning, gravel augmentation, and predation reduction, measured in terms of "smolt productivity," which is apparently the survival of juvenile salmon migrating downstream from Waterford to Grayson.

For example, the AFLA states: "As shown in Figure 5.12-2, gravel augmentation, in and of itself when fully implemented to the level defined in the Preferred Plan, is expected to increase smolt productivity by almost 40% over Base Case conditions from 6.32 to 8.72 smolts per female spawner."[211] Thus, the Chinook population model predicts a 40% increase in survival by continuing about the same level of gravel augmentation that has occurred since the 1995 Settlement, which resulted in the baseline smolt survival levels with which the District compares its preferred plan.

The AFLA continues:

> The largest improvement to smolt productivity results from predator control measures. The modest reduction in predator populations, 20% above the barrier weir (due to exclusion of striped bass and long-term elimination of smallmouth bass) and only 10% below the barrier weir, yields an 70% increase in smolt productivity under the Base Case flow regime from 6.32 to 10.89 smolts per female spawner. Under the Preferred Plan's flow regime, the increase is 80% compared to the Base Case, reflective of the very significant impact predation has on Tuolumne River fall-run Chinook salmon.[212]

As described above, these predator control measures are the very measures that staff does not recommend because "it is not known if they would have a measureable benefit."[213]

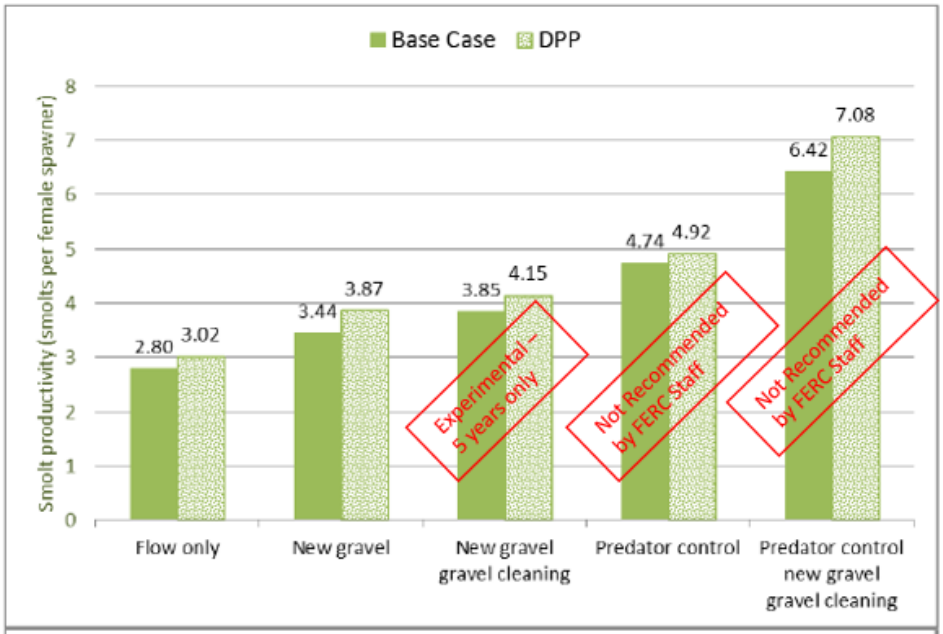
The DEIS relies heavily on the Chinook population model to evaluate different flow and non-flow proposals, and to compare them to those of the Districts. In DEIS figures 3.3.2- 26, 3.3.2-29, 3.3.2-32, and 3.3.2-35, the DEIS compares Chinook "smolt productivity" under the flow proposals of NMFS, CDFW, State Water Board, and Conservation Groups respectively. However, in each of these figures, the evaluation includes the Districts' non-flow proposals, but not the non-flow measures of the other entities. Figure 3.3.2-38 compares the flow proposals of CDFW, USFWS (from January 2018), and the Districts, combined with the non-flow proposals

[210] *Id*., p. 634/5-55.
[211] *Id*., p. 635/5-56.
[212] *Id*., pp. 635-637, 5-56 to 5-58.
[213] DEIS, p. 668/5-65.

of CDFW for gravel, large wood, and floodplain lowering (these non-flow proposals were identical to those proposed in REA comments by USFWS and the Conservation Groups). The modeling for Figure 3.3.2-38 used the CDFW non-flow measures for the Districts' values as well.

The results show a confused picture that is already biased in Figures 3.3.2- 26, 29, 32, and 35 by the fact that the Districts' values include non-flow measures, which account for almost all the predicted benefit, while the other entities' recommendations include proposed flows without proposed non-flow measures. Figure 3.3.2-38 does not show the Districts' non-flow recommendation, but rather those of the agencies. So nowhere does the DEIS compare the Districts' recommended flow and non-flow measures with the flow and non-flow measures of the other entities.

Rather than simply reproducing output from the Districts' Chinook fish population model, the DEIS should have first analyzed the model's output and its consistency with staff's findings on each of the model's elements. Consider, for example Figure 5.12-2 of AFLA Ex. E, which is reproduced as Figure 1 below.



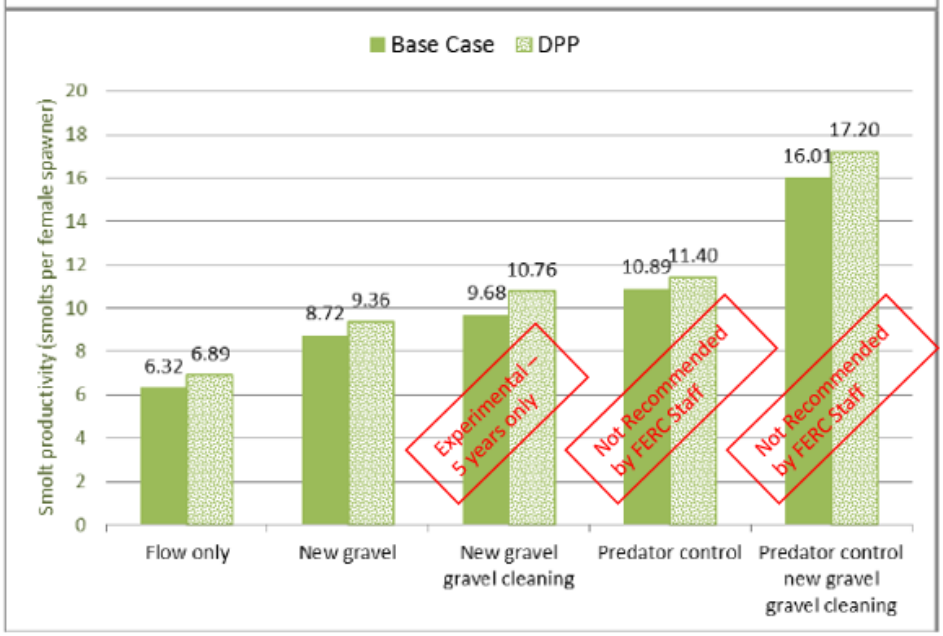


Figure 5.12-2. Tuolumne River smolt productivity under the Base Case and Districts' Preferred Plan (DPP) assuming 10,000 female spawners (top) and 2,000 female spawners (bottom).[154]

Figure 1: Graphic Chinook Population Model Output from AFLA

Explanatory footnote 154 from AFLA:
Each non-flow measure is examined under both the Base Case flow regime (first bar) and the Preferred Plan flow regime (second bar). For example, the gravel augmentation measure when considered just under the Base Case flows increases smolt productivity from 6.32 to 8.72 smolts per female spawner. When combined with the Preferred Plan flow regime, the increase is to 9.36 smolts per female spawner. [214]

[214] AFLA, Ex. E, p. 636/5-57.

The two right columns in Figure 1 above are invalid because the quantities represented in these columns rely on the effectiveness of the predator control measures whose benefit to salmon the DEIS has concluded is unknown. The Districts describe the "gravel cleaning" measure, roughly an industrial pressure washer applied to portions of river bed ripped from the river with a backhoe and released, as an "experimental" five-year program.[215] The durability and effectiveness of this measure, as well as its effects on aquatic biota such as aquatic insects, is unknown, and it cannot be relied on to improve spawning habitat. The level of effort the Districts and staff propose for gravel augmentation is hardly different from efforts after the 1995 settlement agreement. Overall, the DEIS does not explain how the incremental flow and gravel augmentation will improve conditions for fall-run Chinook compared to the current degraded baseline, which in the last decade has never exceeded escapement of 4000 and which from 2005-2017 has seen escapement of less than 1000 in half of the years.[216]

From this perspective, the values for non-flow measures shown in these bar graphs to the right of these figures as improvements are unsupported. Absent these unsupported improvements, the modeled scope of the benefits of the Districts' Preferred Plan compared to Base Case is limited to the increment of improvement that the Districts' flow and gravel augmentations provide. For fall-run Chinook, the Districts' Chinook population model shows that the Districts' flows and small gravel enhancements create very little improvement over Base Case. In part, this is because the Districts propose only small flow increases, and the model assumes little benefit to floodplain inundation. The model also ascribes relatively low value to the gravel augmentation, and at the level recommended is focused exclusively on spawning enhancement.[217]

Comparing survival per spawner under the assumptions of 2,000 and 10,000 fall-run salmon spawners, the modeled benefits substantially diminish as the number of spawners increases toward the salmon-doubling goal that is part of federal and state law.[218] The Districts' reliance on in-channel flows and physical habitat measures is founded on the principle that low numbers of fish don't need a lot of space. This is managing for low expectations. The reality is that the number of juveniles produced by the 38,000 adults mandated by the AFRP doubling goal will require far more space than the number of juveniles produced by the 300-3,800 adults that have returned over the past 15 years. In addition, survival rates in most years in the Tuolumne River are far short of the success rate needed to substantially increase the population of Tuolumne River fall-run Chinook. Survival rates in the 24.6 river miles from Waterford (RM 29.8) to Grayson (RM 5.2) in years with flows below 1,300 cfs (the large majority of years) do not exceed 7.9%, and usually are far less (Figure 2). Only in wetter years when the Districts release significantly higher flows are there substantially higher juvenile survival rates.

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[215] AFLA Ex. E, p. 61/2-7.

[216] DEIS, p. 164/3-48, Table 3.3.2-14; *see* also TID and MID, *2017 Lower Tuolumne River Annual Report*, eLibrary no. 20180329-5354, p. 26 (pdf).

[217] *See* Districts' Response to AIR, May 14, 2018, Attachment A, Summaries of the Results and Application of Study Reports, p. 6, Description of Chinook Population Model, describing rearing habitat as a low priority factor, and only when there are high numbers of spawners. eLibrary no. 20180514-5981.

[218] Central Valley Improvement Act Anadromous Fish Restoration Program, State Water Resources Control Board Resolution No. 2010-0039; Bay-Delta Plan update as adopted December 12, 2018, Appendix K, *op. cit*.

Table 7. Survival indices through the lower Tuolumne River between Waterford and Grayson.

Year	Total Survival Index	Fry Survival Index	Peak Fry Daily Avg. Flow at MOD	Smolt Survival Index	Peak Smolt Daily Avg. Flow at MOD
2007	-	-	957	2.9	1,020
2008	6.2	6.5	1,690	6.4	1,320
2009	7.9	0.3	1,300	14.2	1,020
2010	3.0	0.8	767	3.4	3,300
2011	24.9	23.1	7,490	31.2	8,180
2012	3.8	0.2	599	9.7	1,950
2013	1.7	0.03	510	4.0	1,140
2014	-[1]	-[1]	279	-[1]	1,100
2016	-[1]	-[1]	2,200	6.3	2,170
2017	94.8	95.8	15,500	60.6	10,400

[1] Survival index not calculated due to incomplete sampling at Grayson.

Figure 2: Survival indices from Districts' 2017 Lower Tuolumne River Annual Report

In order to put the Tuolumne fall-run Chinook population on track to achieve the salmon doubling goal, Conservation Groups estimate that a fall-run survival rate of 10.0% for the 60-70 river miles from spawning areas (most of which occurs 10-20 miles upstream of Waterford) to Vernalis (approximately 18 miles downstream of Grayson on the San Joaquin River) is needed.[219] A dramatic reset of the system is needed to get to a desired outcome.

In sum, the DEIS's support of Districts' proposed flow measures relies extensively on the Districts' Chinook population model. The Chinook population model shows that Districts' largest benefits come from the predation control measures whose benefits the DEIS finds are unknown. The Chinook population model also ascribes improvements over Base Case to an experimental gravel cleaning measure and to a gravel augmentation measure that would differ little from the scope of gravel augmentations in the last twenty years. The Chinook population model output therefore does not provide an evidentiary basis for the claimed benefits of the Districts' proposed flow and non-flow measures. The FEIS must conduct a new evaluation of the relative benefits to fish of competing flow and non-flow recommendations based on reliable evidence.

Finally, the DEIS is also deficient under NEPA in that it fails to incorporate a complete discussion of mitigation measures to reduce the project effects that are conducive to predatory fish and their habitat. The DEIS states that the project is one of several factors affecting predation on salmonids in the Tuolumne. We agree. However, we disagree with the DEIS's suggestion that the Districts and FERC are not responsible for evaluating the project's relative contribution to this degradation of salmonids in the Tuolumne and development of appropriate measures to mitigate that contribution. The FEIS must include a reasonable analysis of the effectiveness of such avoidance measures as flow augmentation and floodplain inundation, as well as measures for altering the preferred habitat of bass.[220]

[219] Conservation Groups' REA Comments, Attachment 4: Draft Biological and Environmental Objectives for Restoring Chinook Salmon and Steelhead in the Tuolumne River, p. 2.

[220] 40 C.F.R. § 1502.1. *See also LaFlamme,* 945 F.2d at 1128.; *Robertson*, 490 U.S. at 351-52 (quoting 42 U.S.C. § 4332(C)(ii).

C. The DEIS's recommendation of low June flows to manage for the fry lifestage of *O. mykiss* does not account for empirical evidence that demonstrates improved survival of *O. mykiss* with high June flows.

The DEIS follows the Districts' recommendations for flows of 200 cfs downstream of La Grange Dam for the month of June in all water-year types, explaining: "[t]he Districts' proposed early summer base flows (June 1 through June 30) are intended to enhance rearing habitat conditions for *O. mykiss* fry …."[221] The DEIS follows the Districts in pointing out the salmon have left the river by June 1 in most years.

The Districts' primary issue with June flow is water supply. In their comments to the State Water Board on the SED for the Bay-Delta Plan, Districts' consultants HDR make this explicit: "June flows are important for water supply purposes, and much less important for anadromous fish purposes …."[222] By proposing to manage for the lifestage of the fish whose WUA peaks at the lowest flows, Districts seek to recover some of the small increment of water they propose to give up compared to Base Case in February-May.

The idea that low flows in June make more *O. mykiss* is contradicted in part by the empirical fish population data reported by the Districts. The DEIS, Table 3.3.2-15 shows that *O. mykiss* population surveys in 2011 found numbers of juveniles an order of magnitude higher in September 2011 than in August 2010, July 2009 or July 2008.[223] Notably, flood flows in 2011 continued well into August, and it was likely not possible to survey until September. The Districts' *2017 Lower Tuolumne River Annual Report*, Table 2, *O. mykiss* snorkel surveys from 1995 through 2017, shows consistently higher observations of *O. mykis*s in years with prolonged flood flows than in lower water years.[224]

In any finding based on the record, FERC must identify the facts on which it relies, explain why these facts are reliable and relevant, and then demonstrate how the facts support its decision.[225] The DEIS offers no reasoned explanation for why it favored the Districts' habitat modeling over empirical evidence that shows that higher June flows, not lower flows, favor the survival and proliferation of juvenile *O. mykiss* in the lower Tuolumne River. The FEIS should correct this deficiency.

D. Staff offers no evidence that incorporating Districts' proposed "interim" flows for July through October 15 as the permanent license condition for that time period will provide suitable water temperatures for *O. mykiss*.

The Districts' proposed flows (assuming operation of the infiltration galleries) of 300-350 cfs at the La Grange gage (and upstream of RM 25.5) from July through October 15 should

[221] DEIS, p. 246/3/130.
[222] AFLA Appendix, SED Comments 1, pdf p. 217.
[223] DEIS, p. 165/3-49.
[224] *2017 Lower Tuolumne River Annual Report, op. cit.*, Table 2.
[225] *See* 5 U.S.C. §§ 556, 557, 706(2); *Motor Vehicle Manufacturers Ass'n* , 463 U.S. 29; *Burlington Truck Lines,* 371 U.S. 156.

provide water temperatures for *O. mykiss* to RM 43 of 19° C or less except when ambient temperatures exceed 105° F.[226] . As stated in REA Comments, Conservation Groups support flows at the La Grange gage of at least 300 cfs during from July 1 through October 15.

However, Conservation Groups strongly object to staff's proposal to make the Districts' proposed "interim" flows, as shown in the far right column of DEIS Table 3.3.2-20, the flows recorded in the license.[227] Staff cites to no evidence that the flows the Districts proposed as interim flows are adequate to support aquatic resources during this time period. The Districts' analysis in the AFLA, on the contrary, determines that the higher flows are warranted.[228]

Indeed, the water temperature monitoring performed by staff in support of the staff alternative did not model the "interim" flows proposed by staff to become license conditions. Instead, staff modeled the higher summer flows the Districts recommended assuming the operation of the infiltration gallery. The DEIS explains:

> Although the Districts propose operation of the infiltration galleries as part of the Don Pedro Project, these facilities are not needed to operate the hydroelectric project and therefore are not appropriate to include as a project facility. However, TID could still operate them for municipal and industrial deliveries, and the Districts could compensate for this by increased instream flow releases from the La Grange Project. Therefore, our evaluation of the Districts' proposed flow regime on water temperature includes operation of the infiltration galleries.[229]

Staff's water temperature modeling for the July through October 15 time period therefore improperly models an enhanced condition that is not required as part of the proposed action.

The DEIS provides no evidence that the action as proposed would provide suitable thermal conditions for *O. mykiss* in the lower Tuolumne River. The FEIS should change the proposed license condition to require the flows that Districts proposed as "with infiltration gallery" flows to provide such suitable conditions.[230]

Absent such change, the FEIS should provide the output of temperature modeling for the actual proposed license condition. The FEIS should also qualify analysis of staff's previous temperature modeling to reflect the that there is no existing or known proposed regulatory assurance that the Districts will operate to the modeled flows. In the event that staff does not change its recommended license condition, the FEIS should also explain how the actual condition protects *O. mykiss* in the lower Tuolumne River during the summer.

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[226] AFLA, Ex. E, p. 603/5-24.
[227] DEIS, pp 178-179/3-62 to 3-63.
[228] *Id.*
[229] DEIS, pp. 208-210/3-92 to 3-94.
[230] As stated in REA Comments, Conservation Groups have been awaiting implementation of the infiltration galleries since the 1995 settlement agreement. The flows in the license should be the flows proposed at the La Grange gage as proposed by Districts as the flows with infiltration galleries. After an interim of twenty-five years, the interim going forward should be on the Districts, not on the river.

E. The DEIS provides no information or analysis to demonstrate that June 1 through October 15 flows of less than 200 cfs downstream of RM 25.5 will mitigate project effects on recreational opportunities and visual quality in the lower Tuolumne River in the Modesto urban corridor.

Substantial evidence presented must describe the effects of the project on not only the electricity system, but also environmental quality, recreation, and other beneficial uses of the lands and waters.[231]

The DEIS provides no information or analysis about recreational opportunities and visual quality in the urban corridor from RM 25.5 to RM 11, the reach of the lower Tuolumne River that passes through greater Modesto. Under both the Districts' proposed flows downstream of an operating infiltration gallery at RM 25.5, and the Districts' proposed "interim" flows that staff recommends as the permanent license condition, flows from June 1 through October 15 downstream of RM 25.5would range from 75 cfs to 150 cfs,[232] varying by month and water-year type. The only apparent issue that the DEIS considers in relation to these July through October 15 flows is water supply.

Conservation Groups' REA comments discuss three issues with flows less than 200 cfs downstream of RM 25.5:

1) The visual quality of the Tuolumne River at less than 200 cfs, particularly in Modesto, is poor, and the river looks more like a lake than a river.
2) The water quality is poor.
3) Flows less than 200 cfs are too low to boat.

The AFLA identifies the lower Tuolumne River from River Mile 25.9 to RM 11 as largely urban.[233] The Tuolumne River is arguably the most prominent natural resource in this area. The Modesto area is valley floor, either urbanized or intensely planted to agriculture outside urban zones. The DEIS reports: "Sixty-three percent of the Turlock and Modesto sub-basin includes communities designated as *disadvantaged communities* or *severely disadvantaged communitie*s by the State of California, and sixty-seven percent are considered economically distressed areas."[234]

The DEIS discusses the socioeconomic effects of the Don Pedro Project on these communities in terms of impacts to agriculture and related businesses. However, the DEIS says nothing about the effects on recreation from the proposed low flows in the Tuolumne River in Modesto's urban corridor, the only immediately accessible river for two hundred thousand people, many of whom are part of disadvantaged communities and have limited resources for travel.

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[231] *See* 16 U.S.C. §§ 803(a)(1), 808(a)(2).
[232] DEIS. pp. 178-179/3-62 to 3-63. The proposed Voluntary Agreement for the Tuolumne raises the flow range for July through October 15 to 125-150 cfs. Complete CNRA VA Submittal to State Water Board, March 1, 2019, p. 202.
[233] AFLA, Ex. E., p. 615/5-36.
[234] DEIS, p. 520/3-404. Italics in original.

The DEIS also says nothing about the visual quality of the river that runs for a dozen miles through greater Modesto.

Finally, the DEIS does not explain why limiting boating in the lower Tuolumne River to short time periods in summer will meet demand or provide a reasonable level of opportunity. The DEIS also does not explain how staff evaluated the water quality for contact recreation in greater Modesto.

As Conservation Groups stated in REA Comments, the City of Modesto deserves a living river. The DEIS fails to explain, in a reasoned manner, why the people of Modesto will be deprived of one.

The FEIS should re-evaluate flows in the lower Tuolumne River downstream of RM 25.5 in consideration of values other than water supply.

F. The DEIS's rejection of fall attraction flows for salmon ignores conflicting evidence in the record based on more comparable data and analysis than the Klamath study cited by staff.

The DEIS says that documentation by the agencies of adult salmon responding to natural flow pulses by migrating upstream does not demonstrate that salmon will respond to "managed pulse[e]."[235] The DEIS does not provide a reasoned explanation for why the highlighted distinction between natural and managed pulses makes a difference.

The DEIS cites to a paper by Strange (2007) whose focus is primarily on why fall-run salmon in the Klamath River did not move upstream in response to pulse flows in the Klamath River basin.[236] This study emphasizes above all the particular characteristics of Chinook in the Klamath watershed and their differences in response from Chinook observed elsewhere. For example, the author writes:

> Understanding why there was virtually no response to any of the fall pulse flows among fall Chinook requires remembering the evolutionary axiom of adaptation to long term average conditions (Gilhousen 1990; Quinn et al. 1997; Hodgson and Quinn 2002). The fall pulse flows were unprecedented in their magnitude and duration for that time of year and thus were well outside the range of long term average conditions to which KRB adult Chinook have adapted.[237]

The DEIS cites a second paper from the Stanislaus ("Peterson 2016") whose co-authors include two of the principals at FishBio, fisheries biology consultants to the Districts for two

[235] DEIS, p. 630/5-27.
[236] Joshua Strange, 2007. *Adult Chinook Salmon Migration in the Klamath River Basin: 2005 Sonic Telemetry Study Final Report*. Available at: https://www.fws.gov/yreka/Final-Reports/rmaap/2005-FP-01-YT-HVT.pdf.
[237] *Id.*, p. 28. *See also* pp. 7-8 about the run timing of Klamath River "summer run" Chinook.

decades.[238] The abstract for the cited paper includes a statement advocating for consideration of flow reductions:

> A strong nonlinear response between migratory activity and discharge levels was observed for Chinook Salmon, indicating no additional increase in daily counts when pulse flows exceeded 20 m^3/s. Current management requirements in the Stanislaus River exceed this level and adjustment should be considered based on the findings of this study, particularly given the need to balance beneficial uses of a limited water supply.[239]

Conservation Groups' REA Comments cited to published findings of the East Bay Municipal Utility District and the Lower Mokelumne River Partnership showing a strong positive relation between fall pulse flows and upstream migration of Chinook in the Mokelumne River, which enters the Sacramento – San Joaquin Delta northwest of Stockton. The REA comments presented the figures shown in Figure 3 below.[240]

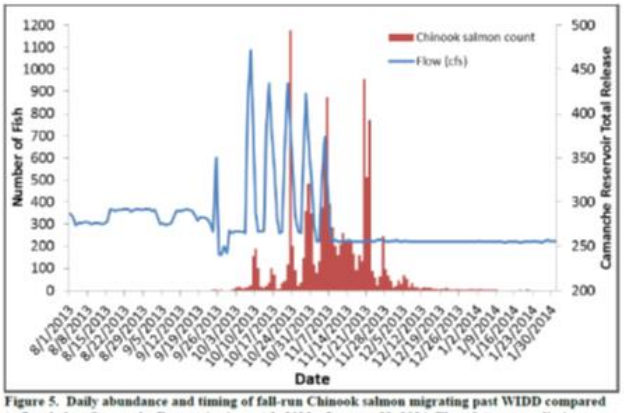

Figure 5. Daily abundance and timing of fall-run Chinook salmon migrating past WIDD compared to flow below Camanche Reservoir, August 1, 2013 - January 31, 2014. Flow data are preliminary and subject to change.

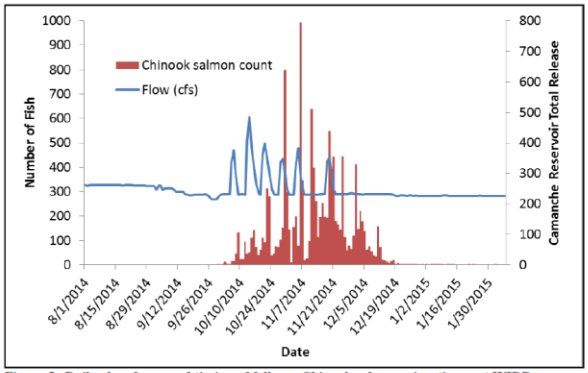

Figure 5. Daily abundance and timing of fall-run Chinook salmon migrating past WIDD compared to flow below Camanche Reservoir, August 1, 2014 – February 2, 2015. Flow data are preliminary and subject to change.

Figure 3: Mokelumne River flow and migrating adult salmon counts at Woodbridge Irrigation Diversion Dam, August 2013-January 2014 and August 2014-January 2015. Source: EBMUD Escapement Reports.

Conservation Groups' REA Comments also pointed to the experience of the Stanislaus River in 2015, in which Chinook escapement was estimated at 6136, compared with escapement of 113 on the Tuolumne.[241] The Stanislaus had a fall pulse flow in 2015 (Figure 4); the Tuolumne did not (Figure 5). Similar results under similar circumstances occurred in 2014: the Stanislaus, with a fall pulse flow, has an escapement of 3060 Chinook, while the Tuolumne, with no fall pulse, had an escapement of 438.[242] Stanislaus – San Joaquin confluence and Tuolumne – San Joaquin confluence are less than ten river miles apart.

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[238] https://fishbio.com/staff/andrea-fuller; https://fishbio.com/staff/doug-demko; https://fishbio.com/staff/matt-peterson; https://fishbio.com/our-services

[239] Abstract is online at: https://www.tandfonline.com/doi/abs/10.1080/02755947.2016.1240120.

[240] Conservation Group's REA Comments, p. 36. Figure 1 of those comments shows dramatic increase in upstream migration by adult fall-run on each pulse in a series of fall pulses during two separate years. See also internal cite to East Bay Municipal Utility District's annual fisheries reports, available at: http://www.ebmud.com/recreation/protecting-natural-habitat/fisheries-and-wildlife-division-reports/.

[241] CDFW, 2018 Grand Tab, *op. cit.*, p. 21.

[242] *Id.*

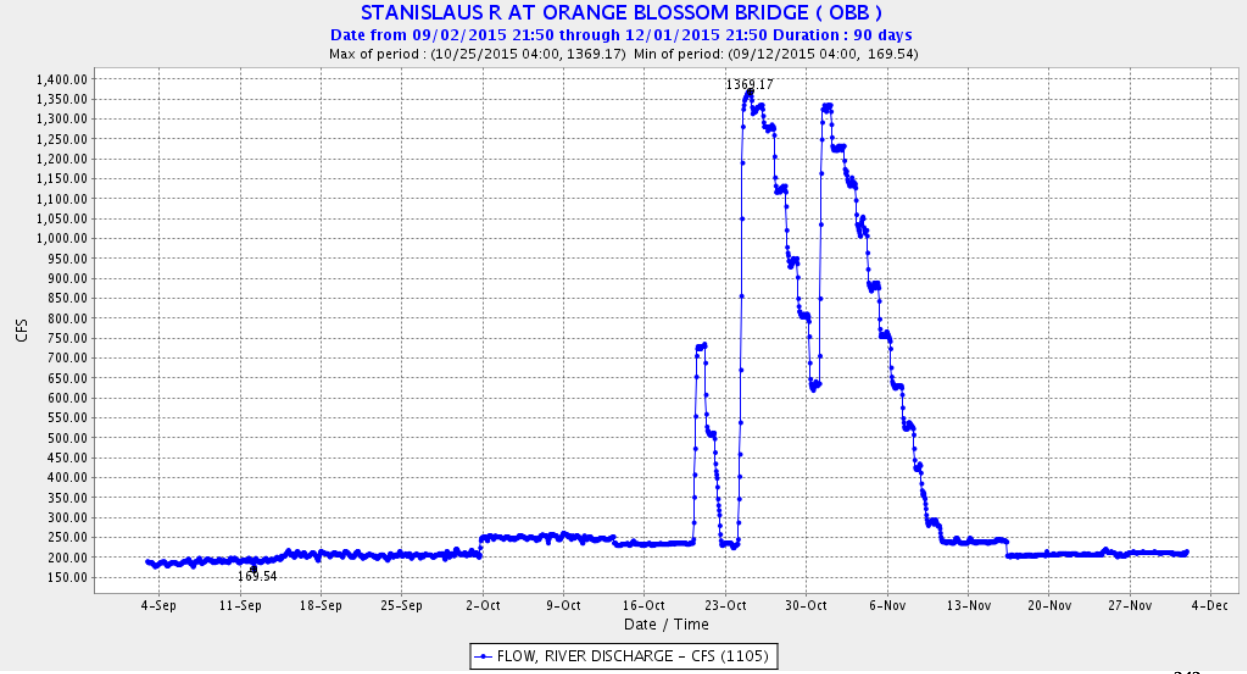

Figure 4: Stanislaus River flow with three flow pulses, fall 2015 (source: cdec); escapement 6136[243]

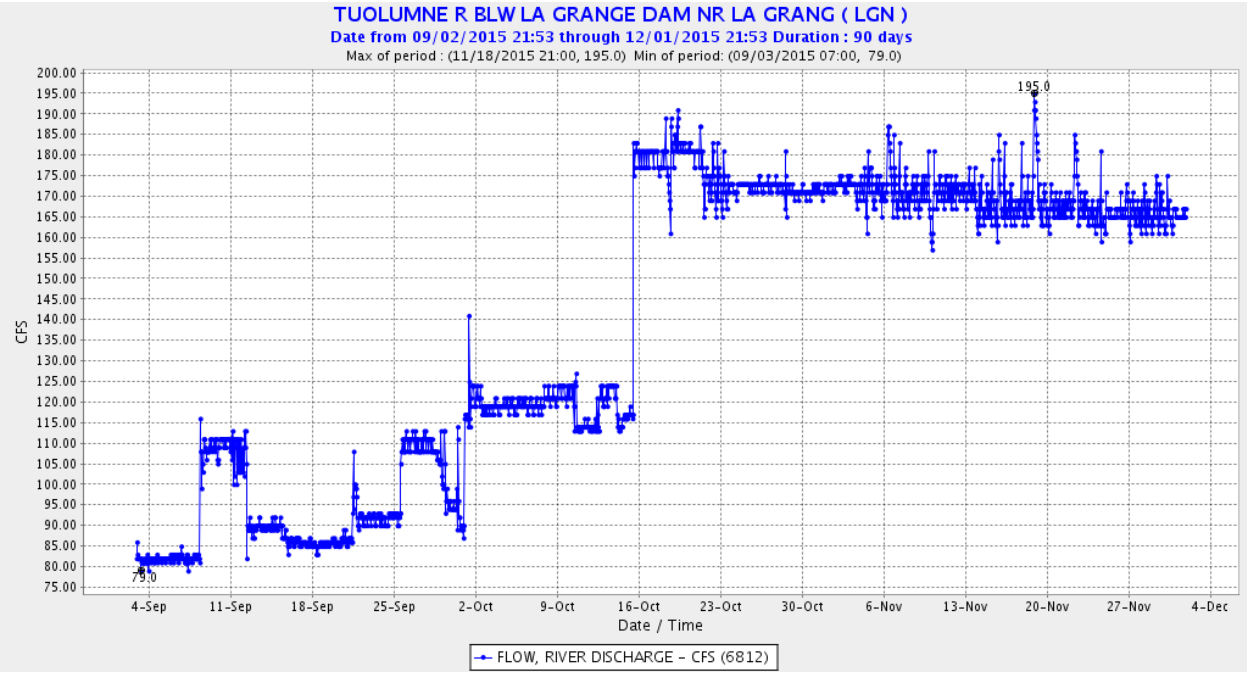

Figure 5: Tuolumne River flow with no flow pulses, fall 2015(source: cdec); escapement 113[244]

[243] Graph generated from California Department of Water Resources, California Data Exchange Center website, http://cdec.water.ca.gov/river/rivcond.html; escapement total from Grand Tab, *op. cit.*
[244] *Id.*

The DEIS offers no explanation why staff discounted the evidence presented in Conservation Groups' REA comments and the cited reports, or how staff weighed these reports in comparison to the documents cited in the DEIS.

The FEIS should re-evaluate the data presented here and in the agencies' and Conservation Groups' REA comments, and find that fall pulse flows in the lower Tuolumne River are warranted. Fall pulse flows will help migrating adult Chinook salmon find the Tuolumne River.

G. The DEIS does not evaluate the impacts to instream resources of lowering the operating pool of Don Pedro Reservoir from 600 feet to 550 feet stage elevation.

The DEIS describes the District's proposed lowering of Don Pedro Reservoirs operating pool: "Reduce the minimum reservoir level for Don Pedro Reservoir from elevation 600 feet to 550 feet to make an extra 150,000 acre-feet of water available to meet water needs during extended drought conditions."[245] By our calculation, the storage in Don Pedro Reservoir at 600 feet is approximately 300,000 acre-feet, which is the current inaccessible "dead pool" for the reservoir. Making an additional 150,000 acre-feet accessible would make the dead pool 150,000 acre-feet of storage in the reservoir.

The DEIS describes the physical measures the Districts propose to implement at the reservoir, such as adding riprap and extending a boat ramp, to accommodate this proposed change.[246] However, the DEIS contains no analysis of operational effects such a lowering of the reservoir would entail, particularly during a drought, which is the stated planned use of the changed operating pool.[247]

Staff should conduct an analysis of the drawdown of storage at different levels within the 600 to 550 stage height range in Don Pedro Reservoir in the fall of a drought year such as 1990 using the Don Pedro Operations Model. Staff should then evaluate the effects on water supply, instream flow and water temperature in the following water year, and report the results of this analysis in the FEIS. Conservation Groups believe that such a modeling exercise would demonstrate the unreasonable risk that allowing such a dramatic drawdown would entail.

Conservation Groups recommend that the FEIS evaluate different values for a carryover storage minimum in Don Pedro Reservoir. There is precedent for establishment of such a minimum. At Lake McClure on the Merced River, part of the Merced River Project a few miles south of Don Pedro Reservoir, operating rules forbid releases for storage except to meet instream flow requirements once storage in the 1,024,000 acre-foot reservoir drops below 115,000 acre-feet.[248] Conservation Groups recommend that staff evaluate carryover storage minimum values

[245] DEIS, p. 94/2-13.
[246] DEIS, p. 127/3-11.
[247] DEIS, p. 172/3-56
[248] Merced River Project, P-2179, License Article 44, as reported in Pre-Application Document for the relicensing of the Merced River Project, eLibrary no 20081117-0046, p. 6-8.

of 400,000 and 500,000 acre-feet for Don Pedro Reservoir, based on our understanding that current dead pool is approximately 300,000 acre-feet.

Staff proposes to address one potential environmental impact of reducing the operating pool of Don Pedro Reservoir to 550 feet by requiring temperature monitoring in the lower Tuolumne River whenever the reservoir drops below 600 feet.[249] This improperly defers analysis under NEPA of a potentially significant effect of the proposed action. In addition, staff's proposed limitation of water temperature monitoring to this limited and unwise scenario will not reasonably protect project-affected resources in the lower Tuolumne River, particularly under the influence of climate change that is expected during the term of the new license. Staff should correct these deficiencies in the FEIS by evaluating carryover storage requirements for Don Pedro Reservoir of 400,000 and 500,000 acre-feet, and by recommending license conditions that require temperature monitoring on an ongoing basis in the lower Tuolumne River.

H. The finding in the DEIS that reintroduction of salmonids to the upper Tuolumne River is too speculative to warrant further study is not supported by substantial evidence and is inconsistent with the Commission's obligation to consider feasible mitigation of project effects.

The DEIS acknowledges that La Grange and Don Pedro dams block passage of anadromous fish in Tuolumne River:

> Under existing conditions, both La Grange and Don Pedro Dams completely block upstream fish migration and impede downstream fish passage. Historic accounts indicate salmon were present in the upper Tuolumne River, perhaps as far upstream as Preston Falls, and also in the lower Clavey River.[250]

In the first instance, this means that fish passage for anadromous salmonids to the Tuolumne River upstream of Don Pedro Reservoir would be a reintroduction, not an initial introduction. It also means that blockage of passage for anadromous fish is a project effect.

The DEIS describes several potential methods for upstream fish passage past La Grange and Don Pedro dams. The DEIS describes Alternative U3 as a "collection, handling, transport and release" program,[251] and states: "[I]t is apparent that the mainstem Tuolumne River and its tributaries upstream of Don Pedro Reservoir contain anywhere from 18 and 31 miles of potentially accessible anadromous fish habitat of varying quality and that upstream passage is feasible at La Grange Diversion Dam via Alternative U3."[252] Conservation Groups agree with this assessment, which was also the conclusion of NMFS. The Districts agree that upstream passage via this method is feasible,[253] but argue that the habitat is not suitable.[254]

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[249] DEIS, p. 218/3-102.
[250] DEIS, p. 278/3-162.
[251] DEIS, p. 284/3-168.
[252] DEIS, p. 285/3-169.
[253] La Grange FLA, Attachment C, *Fish Passage Facilities Alternatives Assessment Study Report*, eLibrary no. 20171011-5063, p. 118/5-3.
[254] Districts' Reply Comments, March 15, 2018, Att. C., eLibrary no. 20180315-5006, pp. 26-27/3-13 to 3-14.

NMFS argues that a study by Anchor QEA[255] that NMFS commissioned and that was published in October 2017 established that an in-river downstream migrant collection facility upstream of Ward's Ferry Bridge is feasible. The Districts argue that this study does not demonstrate feasibility, and reiterate their arguments that their studies found downstream passage for juvenile salmonids from the upper Tuolumne River past Don Pedro and La Grange dams is infeasible. The City of San Francisco argues extensively that the Anchor Report does not demonstrate downstream passage feasibility, and present a review of the Anchor Report by GEI Consultants that the City commissioned that finds that Anchor has not demonstrated feasibility.[256] The City asserts: "Districts conducted a Fish Passage Facilities Alternatives Assessment Study Report for the La Grange Project ("Fish Passage Facilities Study") that concluded none of the four potential downstream passage alternatives evaluated as part of the study "to be technically feasible."[internal citation to Report].

The DEIS copies the Districts' Fish Passage Facilities study almost verbatim when it states: at page 285:

> • Alternative D1: Fixed Multi-Port Collector with Helical Bypass near Don Pedro Dam
> • Alternative D2A: Floating Surface Collector near Don Pedro Dam
> • Alternative D2B: Floating Surface Collector near Head of Reservoir
> • Alternative D3: Fixed In-River Collector
>
> None of the downstream alternatives were determined to be technically feasible based upon the evaluation factors defined above. Of the technologies evaluated only one alternative has examples of facilities that are currently in operation: Alternative D2A.**118** The remaining alternatives represent types of downstream fish passage technologies that are yet to be applied in practice at a full scale, and it cannot be known how or whether such a facility will work. For all alternatives, the anticipated reservoir passage efficiency and collection efficiency standards are not likely to meet the performance standards required at other high dam facilities in operation.[257]

The copied section of the Fish Passage Facilities Study Report states:

> • Alternative D1: Fixed Multi-Port Collector with Helical Bypass near Don Pedro Dam
> • Alternative D2A: Floating Surface Collector near Don Pedro Dam
> • Alternative D2B: Floating Surface Collector near Head of Reservoir
> • Alternative D3: Fixed In-River Collector
>
> None of the downstream alternatives were determined to be technically feasible based upon the evaluation factors defined in Section 3.2.3 of this report. Of the technologies evaluated only one alternative has examples of facilities that are currently in operation: Alternative D2A. The remaining alternatives represent types of downstream fish passage technologies that are yet to be applied in practice at a full scale, and it cannot be known

[255] Anchor QEA, *Conceptual Engineering Plans for Fish Passage at La Grange and Don Pedro Dams on the Tuolumne River,* October 2017, eLibrary no. 20171113-5347 (Anchor QEA Report).
[256] Reply Comments of CCSF, March 15, 2018, p. 117.
[257] DEIS, p. 285/3-169.

> how or whether such a facility will work. Therefore, these alternatives are experimental. In each case, there are no facilities in existence to provide an adequate operational history that can adequately inform the engineering, operational, or performance aspects of the alternatives. For all alternatives, the anticipated reservoir passage efficiency and collection efficiency standards are not likely to meet the performance standards required at other high dam facilities in operation.[258]

The DEIS does not go as far as the Districts in declaring outright that capture of downstream migrating juvenile salmonids is infeasible, stating, for example, "[A] temporary/portable in-river collection device or series of these devices at the upstream end of Don Pedro Reservoir may be the only biologically viable option for downstream passage…."[259]

However, the DEIS concludes: "We find that NMFS's 10(a) recommendations [for further study post-license issuance] are not justified, based on our analysis of the feasibility of establishing viable populations of federally listed salmonids in the upper Tuolumne River Basin."[260]

Conservation Groups believe that the expectation of finding an off-the-shelf downstream capture facility is a formula in which all roads lead to no. Every fish passage facility at a high head dam is, as described in the DEIS, "challenging and experimental."[261]

A floating surface collector (FSC) that was able to move up and down the Tuolumne River arm of Don Pedro Reservoir strikes us as the approach to downstream capture that would be most likely to succeed. The DEIS should have given more attention and analysis to the section of the Anchor QEA Report that lists what could make a FSC located between Moccasin Point and a location downstream of Ward's Ferry Bridge feasible:

> 1. The FSC could be made to be readily mobile.
> 2. The FSC is always operated very near the head of the reservoir such that no thermal stratification can occur upstream of the collector.
> 3. The operation is restricted to a small range of depths (e.g., 20 to 50 feet of total depth, and the FSC would be moved before the depth was out of this range).
> 4. The FSC would have to withstand the high velocities that would be present in the relatively shallow depths and narrow widths at the head of reservoir during flood discharges.
> 5. Shore power could be provided at several fixed locations between the upper and downstream heads of reservoir.
> 6. A new (i.e., less cumbersome) guide net deployment scheme is developed; for example, the nets do not move with the FSC, but instead are permanently moored at specific sites and elevations that also include hookups to shore power.

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[258] La Grange FLA, Attachment C, *Fish Passage Facilities Alternatives Assessment Study Report*, pp. 118-119/5-3 to 5-4.
[259] DEIS, p. 670/5-67.
[260] *Id.*
[261] DEIS, p. 669/5-66.

7. A system is developed for keeping collected fish in cold water during transportation from the FSC to transport trucks.
8. Better methods for passing debris and recreational boat traffic are developed.[262]

A systematic, problem-solving investigation of how to address these obstacles is founded in fact and is reasonable. It would get directly to the issues that diverse parties have identified as critical path. Conservation Groups recommend that the FEIS evaluate a license condition that would order such an investigation. Absent such investigation, a project effect that has endured for 120 years will likely go unmitigated for another 40. Conservation Groups believe that the Commission has a responsibility to do more than walk away from it.

Staff should also consider staying determination on the remainder of NMFS's 10(j) study recommendations relating to reintroduction of salmonids to the upper Tuolumne River pending the Commission's evaluation of the outcome of this investigation.

I. The FEIS must re-evaluate the socioeconomic effects of water made unavailable to SFPUC and BAWSCA under different flow recommendations.

Staff largely relies on analysis by SFPUC and BAWSCA to evaluate the potential socioeconomic effects of higher flows in the Tuolumne River in the SFPUC and BAWSCA service areas. The DEIS states:

> The analysis of economic effects of the proposed and recommended flow regimes on municipal and industrial use is based on two documents: (1) *Socioeconomic Impacts of Water Shortages within the Hetch Hetchy Regional Water System Service Area*, prepared by Dr. David Sunding (2018) for the SFPUC, and (2) the *Supplemental Reply Comments of the Bay Area Water Supply and Conservation Agency* (BAWSCA, 2018a). BAWSCA is a special district that represents the interests of the CCSF. In its analysis, BAWSCA provides the results of the CCSF water systems operations model that shows changes in water supply under each of the proposed and recommended flow regimes. The water supply shortages forecast in that model were used to predict economic impacts calculated within the Sunding study.[263]

The DEIS does not question the assumption that the City of San Francisco would be required to make up for any flow increases required in the new project license, consistent with the Fourth Agreement between the Districts and the City. Conservation Groups presented multiple alternatives to this outcome previously in a letter entitled "Phase I SED Analysis of Potential Economic Impacts to CCSF resulting from Tuolumne Flow Alternatives," filed in the P-2299 docket on October 9, 2014.[264]

[262] Anchor QEA Report, p. 97/82.
[263] DEIS, p. 527/3-411.
[264] Conservation Groups' letter to Kimberley Bose, Secretary, October 9, 2014, eLibrary no. 20141009-5037.

The DEIS relies heavily on information provided by the SFPUC's hired economist, Dr. David Sunding[265] and on water supply model output reported by the Bay Area Water Supply and Conservation Agency (BAWSCA).[266] However, real-world experience has proven Dr. Sunding's predictions of the economic impacts of reduced water use in the SFPUC and BAWSCA service areas to be greatly overstated. BAWSCA's modeling, for its part, uses demand figures far greater than those recently experienced in the SFPUC and BAWSCA service areas, uses a model that is not publicly available and whose modeling assumptions are not transparent, and assumes replacement of water less than stated demand, when during the recent drought such deficiency was offset by conservation.

Staff does provide its own estimation of replacement costs of water using an alternative water supply strategy. However, this strategy is less reasonable than alternative strategies proposed by Conservation Groups, and would be exorbitant in cost.

For these reasons, the DEIS significantly inflates the projected socioeconomic effects of increasing flows in the lower Tuolumne River.

1. Dr. Sunding's estimation of the socioeconomic effects of reduced water supply deliveries to SFPUC and BAWSCA is greatly overstated.

Professor Sunding has performed services for the SFPUC for many years. In 2009, he testified on behalf of the SFPUC in the FERC proceeding on Interim Conditions.[267] At that time, he predicted that 20% rationing in the SFPUC service area would result in the loss of 6,562 jobs and $3.1 billion in lost sales. He also predicted that at 41% rationing, 139,146 jobs would be lost and the economy would suffer $37 billion in lost sales.[268]

These projections were far from accurate. Despite population growth between 2010 and 2016, water demand decreased by 30% by 2016 with no negative economic effects. In fact, according to the CA Employment Development Department, between 2010 and 2015 the City and County of San Francisco added 125,400 jobs, and San Mateo County added 65,700 jobs. Alameda County and Santa Clara County, both of which receive a portion of their water from the SFPUC, added 93,200 and 172,500 jobs respectively.[269]

[265] David Sunding, *Socioeconomic impacts of water shortages within the Hetch Hetchy Regional Water System Service Area*. Filed January 29, 2018, eLibrary no. 20180129-5254. See DEIS, pp. 527-530/3-411 to 3-414.
[266] BAWSCA Reply Comments, May 22, 2018, eLibrary no. 20180522-5234.
[267] Answering Testimony of David L. Sunding on Behalf of San Francisco Public Utilities Commission, Exhibit No. CSF-20, September 22, 2009. *See* e-Library no. 20090922-5093, p. 32(pdf)/10 of 10.
[268] *Id*.
[269] Source material for jobs growth is http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic.html.

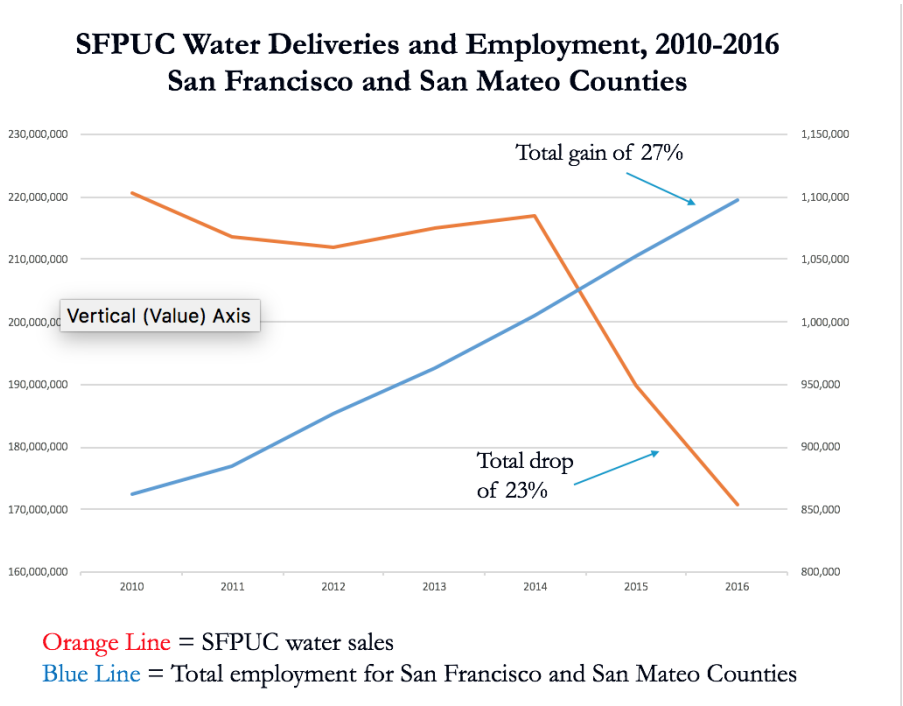


Figure 6: SFPUC Water Deliveries and CCSF and San Mateo County and Employment 2010-2016
Source: Bill Martin, Sierra Club Bay Chapter[270]

Tables 3.3.8-5, 3.3.8-6 and 3.3.8-7 in the DEIS[271] use 238 mgd as base-year demand in the SFPUC service area. However, in 2018 actual water demand was just 196 mgd – 18% below the base-year figure. The DEIS estimates welfare losses of $93 million, business losses of $1.38 billion, and job losses of 7,014 at 20% rationing, based on the 238 mgd demand figure. Clearly, given the fact that 2018 SFPUC and BAWSCA water use is currently very close to the 20% rationing value, the predicted losses have not materialized. The 175 mgd demand in 2016 was 26.5% below the 238 mgd baseline, yet the economy grew rapidly. In both 2016 and 2017, overall water demand was lower than during the 1976-1977 drought, despite considerable population growth.

The DEIS reports that Dr. Sunding "predicts a water demand growth of about 1 percent per year during the 30-year analysis period."[272] However, current trends do not support this projection.

The SFPUC has a long history of over-estimating future water demand. Prior to approval of its Water System Improvement Program (WSIP) in 2008, the SFPUC projected water demand

[270] Mr. Martin is a retired financial planner. Source material for jobs growth is http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic.html. Source for water use is SFPUC annual reports, available at: https://sfwater.org/index.aspx?page=703
[271] DEIS, pp. 528-529/3-412/3-413. Tables 3.3.8-5, 3.3.8-6 and 3.3.8-7 include Alameda and Santa Clara Counties, which receive only a small proportion of their water from the SFPUC. The figures listed in the tables appear to be for those entire counties, not just the areas that receive water from the SFPUC.
[272] DEIS, p. 528/3-412.

in its service area would reach 285 mgd by 2018.[273] Actual deliveries in 2018 were 196 mgd – 69% of the demand projected in 2008.

While demand grew slightly in the aftermath of the 2012-2015 drought to 180 mgd in 2017 and 196 mgd in 2018, it is still well below the pre-drought baseline of 223 mgd in 2013. And for the first three months of 2019, water demand has been lower than in 2018 (Figure 7).

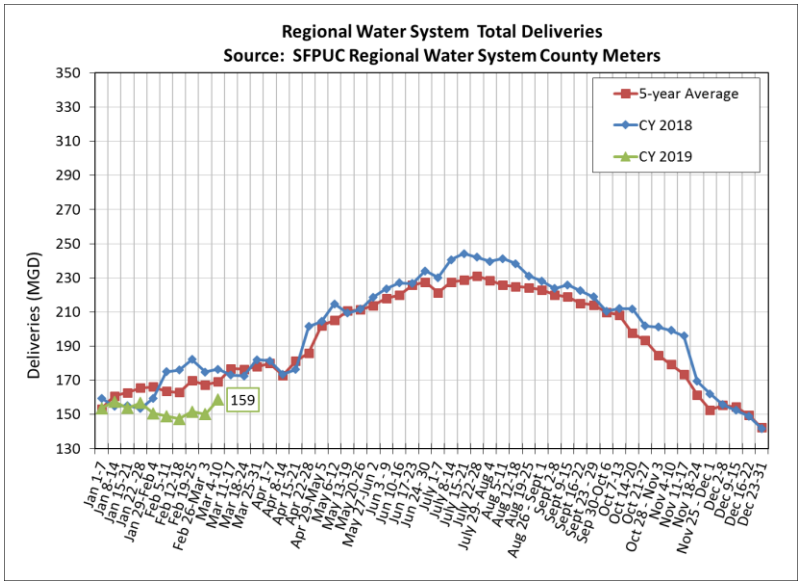


Figure 7: Deliveries to SFPUC and BAWSCA, 2018, 2019 and Average 2014-2018
(Source: SFPUC)[274]

A major driver for water conservation in the SFPUC service area has been significant rate increases needed to pay for capital improvement projects included in the Water System Improvement Program. According to the Appendix L of the SED, "Over the past 7 fiscal years, single-family retail water rates have increased from 6.5 percent to 15.0 percent per year (Table L.3-4). Annual non-residential rate increases have ranged from 6.0 percent to 15.8 percent."[275]

The SFPUC's water rights are poor in dry years, but exceptional in normal and wet years. According to the SED, "The 1922-2003 average calculated volume of water potentially available to CCSF under the Raker Act was about 750 TAF/y.[276] The SED explained SFPUC water demand as follows: "According to a SFPUC planning document, an average of 244 TAF/y is diverted from the Tuolumne River…based on data from 1989-2005."[277] In other words, in an

[273] CCSF, *Final Program Environmental Impact Report For the San Francisco Public Utilities Commission's Water System Improvement Program*, (WSIP Program EIR), Volume 1, p. 2-1. Available at: https://sfplanning.org/environmental-review-documents?field_environmental_review_categ_target_id=212&items_per_page=10&page=3
[274] Steve Ritchie, SFPUC Assistant General Manager, Water Supply Conditions Update, presentation to SFPUC March 17, 2019, slide 10. Available at: https://sfpuc.sharefile.com/share/view/s3a4c50d209e4bdd8
[275] SED, Appendix L, p. 16/L-10.
[276] *Id.*
[277] *Id.*

average year, the SFPUC has the right to capture three times as much water from the Tuolumne as it uses. This allows storage to replenish quickly after a drought.

On average, 85% of the SFPUC's water supply comes from the Tuolumne River, and 15% comes from Bay Area watersheds that will not be affected by the licensing of Don Pedro and La Grange Dams.[278] Between its Sierra and Bay Area reservoirs, the SFPUC has 1,458,684 acre-feet of storage capacity without encroaching into flood water storage (Figure 9). On occasion, the SFPUC can utilize an additional 170,000 acre-feet of flood water storage capacity in its water bank in Don Pedro Reservoir. The SFPUC's large storage capacity provides a buffer against extended droughts.

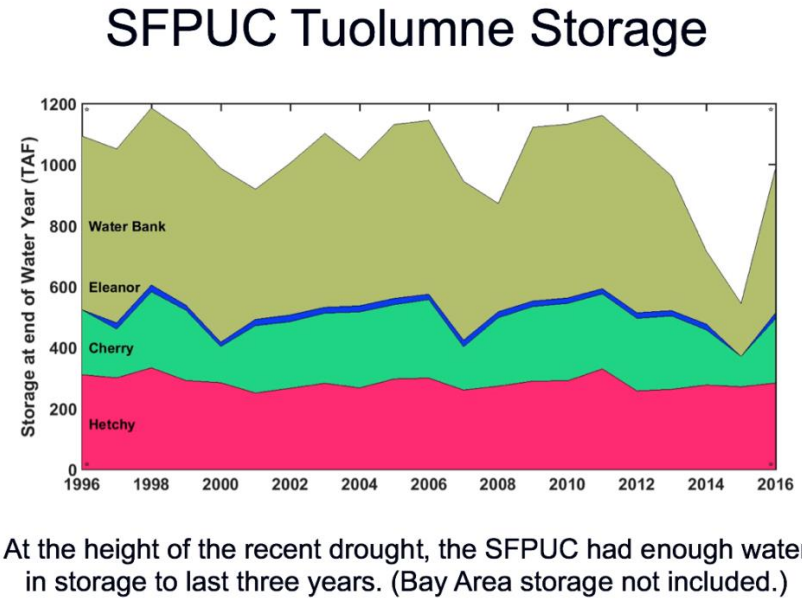
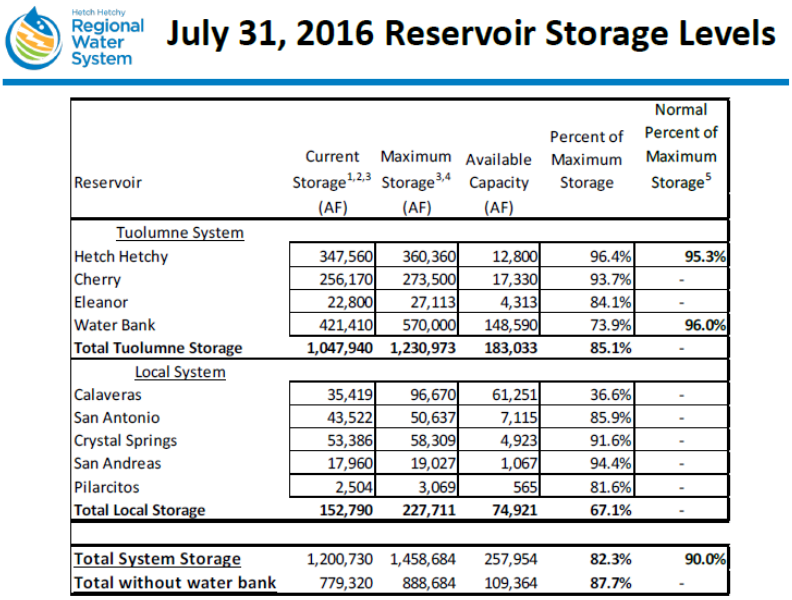


Figure 8: SFPUC Tuolumne storage by facility, 1996-2016
Source of graph: SFPUC public presentation, Moccasin, spring 2017

After the driest four-year period on record (2012-2015), 2016 was an average water year, and the SFPUC was able to recover storage considerably. By the end of July, the SFPUC's Tuolumne River storage was at 96% of maximum (Figure 9).

[278] WSIP Program EIR, Volume 1, p. 21/2.



Reservoir	Current Storage[1,2,3] (AF)	Maximum Storage[3,4] (AF)	Available Capacity (AF)	Percent of Maximum Storage	Normal Percent of Maximum Storage[5]
Tuolumne System					
Hetch Hetchy	347,560	360,360	12,800	96.4%	**95.3%**
Cherry	256,170	273,500	17,330	93.7%	-
Eleanor	22,800	27,113	4,313	84.1%	-
Water Bank	421,410	570,000	148,590	73.9%	**96.0%**
Total Tuolumne Storage	**1,047,940**	**1,230,973**	**183,033**	**85.1%**	-
Local System					
Calaveras	35,419	96,670	61,251	36.6%	-
San Antonio	43,522	50,637	7,115	85.9%	-
Crystal Springs	53,386	58,309	4,923	91.6%	-
San Andreas	17,960	19,027	1,067	94.4%	-
Pilarcitos	2,504	3,069	565	81.6%	-
Total Local Storage	**152,790**	**227,711**	**74,921**	**67.1%**	-
Total System Storage	1,200,730	1,458,684	257,954	**82.3%**	**90.0%**
Total without water bank	779,320	888,684	109,364	**87.7%**	-

Figure 9: SFPUC Total System Storage, July 31, 2016
(Source: SFPUC)[279]

2. BAWSCA uses a non-public model with excessive demand levels and unknown modeling assumptions, and assumes replacement of water supply shortages that are likely to be covered by conservation.

BAWSCA's modeling as relied on in the DEIS uses figures of 238 mgd and 265 mgd for the combined demand of SFPUC and BAWSCA. For reasons discussed in subsection 2, *supra*, these demand figures are high.

The model results reported by BAWSCA for output of the SFPUC's water system model ("HHLSM') are in summary form. They apparently summarize the year-by-year results reported by CCSF in its own May 22, 2018 Supplemental Reply Comments.[280] BAWSCA also reports even higher shortages to some of its retail customers, based on undisclosed contractual specifics and priorities among BAWSCA and those customers.

There are many aspects of this model that are unknown, and the assumptions employed in generating the output are not known. Perhaps the largest unchallenged assumption for the purposes of the DEIS is the acceptance by staff that deliveries less than the modeled demand would require replacement. As described *supra*, recent occurrences of such conditions have not led SFPUC or BAWSCA to pursue alternative supplies.

[279] Steve Ritchie, SFPUC Assistant General Manager, Drought Update, presentation to SFPUC July 31, 2016, slide 2. https://sfpuc.sharefile.com/share/view/s58bdd60ca1e4a5a9
[280] CCSF Supplemental Reply Comments, May 22, 2018, eLibrary no. 20180522-5204, pp. 49-52 (pdf pagination).

3. The DEIS acknowledges that alternative water supply strategies could mitigate economic losses in the Bay Area, but staff's alternative strategy is exorbitant and assumes economic losses at water supply levels that have not created losses.

During the FERC licensing proceedings, neither the SFPUC nor BAWSCA has acknowledged its ongoing efforts to secure alternative water supplies. The SFPUC and BAWSCA have both been active partners in the Bay Area Regional Reliability Project, which seeks to use the regional resources of Bay Area water agencies to assure water supply reliability. One of the most promising projects in this regional planning effort is the use of an expanded Los Vaqueros Reservoir in eastern Contra Costa County to store drought water supply for Bay Area water agencies. The SFPUC could even add a point of diversion for its existing water rights at the intakes to Los Vaqueros (Contra Costa Water District's points of diversion in the south Delta). Despite the Conservation Groups' suggestion that the SFPUC consider west-of-Delta storage as part of its drought planning in scoping comments for the Don Pedro relicensing, the SFPUC has been dismissive of the alternative.

As discussed in the section on NEPA alternatives, *supra*, the DEIS does not evaluate any of the recommendations of the Conservation Groups for alternative water supply strategies. Instead, the DEIS assumes a replacement supply alternative that no one has proposed: construction and deployment of a desalination plant capable of offsetting the worst-case water supply deficiencies of most of the respective flow recommendations.[281]

Staff does its evaluation under assumed SFPUC and BAWSCA demand of 220 mgd and 265 mgd. The lower value is less than the 238 mgd assumed by SFPUC and BAWSCA, but is still too high given trends since 2010, as shown in Figure 6, *supra*.

In Table 3.3.8-10, staff shows the water shortage in the worst-case year under each of the various flow recommendations. In table 3.3.8-11, staff then evaluates the cost of replacement of each of those worst-case water shortages based on a cost of $3000 per acre-foot, the amount staff estimates as the cost of desalinated water.

The DEIS acknowledges that $3000 per acre-foot is high, but dismisses alternatives by saying, "the cost of water supplies tend to escalate rapidly when large amounts of water need to be acquired."[282]

The FEIS needs to replace its flawed socioeconomic analysis with a new analysis based on different assumptions. The FEIS must:

- consider alternative methods for dividing the responsibility for new flow requirements between the Districts and CCSF;
- consider how much shortage is offset by conservation and efficiency, based on the experience of the 2012-2015 drought;
- consider 200 mgd, the current SFPUC/BAWSCA demand level, as the basis of analysis;
- consider alternative sources and costs for replacement water supply; and

[281] DEIS, p. 535/3-419.
[282] DEIS, p. 3-419.

- consider alternative means of valuing economic losses in the event that SFPUC and BAWSCA cannot offset water shortages with conservation and/or replacement supply.

J. The FEIS must re-evaluate the socioeconomic effects of water made unavailable to the Districts under different flow recommendations.

The analysis in the DEIS of socioeconomic impacts on the agricultural-based economies of the Districts depends extensively on a study filed by the Districts in 2014 and amended in 2018 titled, *Regional Economic Impact Caused by a Reduction in Irrigation Water Supplied to Turlock Irrigation District and Modesto Irrigation District* (Regional Impact Report).[283]

The Regional Impact Report is founded on the premise that "Proposed changes to the instream flow regime under the Federal Energy Regulatory Commission (FERC) relicensing would reduce the output, employment and labor income currently supported by the Project."[284] The DEIS accepts this premise, and reproduces estimated dollar costs to agriculture in the project vicinity based on this assumption.

Conservation Groups' REA Comments presented information from the most recent MID and TID agricultural water management plans that show opportunities for efficiencies in water deliveries that could offset reductions in water supply deliveries to the Districts. Eliminating average annual operational spills of 20% (TID) and 17% (MID) would more than cover the 10% reduction that Conservation Groups proposed for Wet and Above Normal years.[285] Cutting TID's operational spill in half would offset that 10% reduction with no net loss of water to agriculture and no net loss of revenue. The DEIS does not conduct any such analysis, and balances instream resources against developmental uses that the DEIS does not hold responsible for improvements.

The DEIS fails to analyze potential measures to offset water shortages through water use efficiency and alternative supplies. It assumes that any water no longer available to the Districts would translate into lost revenue. This analysis is one-sided.

A reasonable goal is for the Districts to maintain existing levels of agricultural production using less water. There are multiple water-efficient irrigation practices and technologies at the Districts' disposal to accomplish this, including:

1. soil moisture sensors and smart irrigation controller;
2. real-time weather data, daily evapotranspiration reports and computer models that help farmers irrigate more precisely; and
3. shifting crops from flood irrigation to sprinklers and drip systems.

Improving irrigation efficiency has the added benefit of reducing fertilizer and pesticide use, reducing soil erosion, and minimizing runoff.

[283] Attachment K to Districts' Response to Additional Information Request, May 14, 2018, eLibrary no. 20180514-5990.
[284] *Id.*, p. 11/1-1.
[285] Conservation Groups' REA Comments, pp. 23-26.

Pressurized irrigation delivery systems present significant opportunities to save water, as demonstrated by MID's neighbor to the north. In 2012, the South San Joaquin Irrigation District (SSJID) implemented a cutting-edge project on 3,800 acres of irrigated farmland. In SSJID's service area, as in the Districts' service areas, water is primarily delivered through miles of gravity-fed canals, which are inefficient and difficult to manage. In its pilot project, SSJID converted the canals to 19 miles of pressurized pipeline. The project reduced water use by 30%, reduced energy use by 30%, and increased crop yield by up to 30%.[286] For SSJID alone, this could translate into saving as much as 73,000 acre-feet of water per year.[287]

The benefits are clear and should have growers throughout the region demanding that all distribution systems be converted. Assuming that similar efficiencies could be achieved by TID and MID, this approach could produce about 300,000 acre-feet of conserved water from the Tuolumne alone.

MID's Agricultural Water Management Plan identifies several infrastructure improvements that have the potential to reduce water waste dramatically.[288] These include renovating the Dry Creek Flume, improving the main lateral and headings, improving flow control structures, instituting outflow interception, installing canal interceptor pipelines, and constructing regulating reservoirs. Opportunities also exist in the TID service area. TID's Agricultural Water Management Plan identifies 56,000 acre-feet of operational spills.[289]

The Conservation Groups' REA comments proposed that the Irrigation Districts, collaborating with the SFPUC, establish an 180,000 acre-foot groundwater water bank.[290] Such a partnership has a precedent in the Tuolumne watershed, where San Francisco paid for nearly half of the construction costs of Don Pedro Dam in exchange for the ability to bank up to 570,000 acre-feet in the reservoir. A groundwater water bank could be similarly financed and would be a much more efficient means of replenishing groundwater supplies than the current aquifer recharge system, which relies heavily on inefficient flood irrigation.

As stated in Conservation Groups' REA Comments, "[t]he Districts … can reasonably reduce their water use by applying less irrigation water whose functional purpose is to recharge groundwater."[291] Recharge by flood irrigation requires over-application of water to agricultural fields, and it is unknown how much of the excess water applied actually is recoverable for later

[286] *Maximizing crop per drop for California farmers*. American City & County, March 2015. http://viewer.zmags.com/publication/a0d7babd#/a0d7babd/6.
[287] *SSJID exploring remaking the entire delivery system*, The Modesto Bee, September 8, 2015. https://www.modbee.com/news/article34425708.html.
[288] MID staff presentation, February 28, 2012. https://www.mid.org/about/newsroom/projects/watertransfer/waterpresentation-120228.pdf
[289] TID 2015 AWMP, Table 4.1, page 59. https://issuu.com/turlockirrigationdistrict/docs/tid_awmp_2015-final_12_09_15_w-atta?e=15635682/51550226
[290] Conservation Groups' REA Comments, pp. 23-26.
[291] *Id*., p. 28.

use. Flood irrigation also moves nitrates and other pollutants into groundwater, which creates other problems.[292]

By comparison, an engineered aquifer recharge system would increase efficiency. Such a system would focus on capturing flood waters during the wettest years when water is abundant and there are fewer concerns for fish and other species. This system would increase the amount of water that would be available in future dry years when there is a greater need for stored water, both on the ground and in the river.

The pricing structures of the Districts also reduce incentives for efficient use. According to an article in the Modesto Bee, "The cost of delivering [MID] water — $21.3 million per year, in the latest budget — has not changed, and neither has the amount farmers pay: $4.1 million. The $17.2 million gap now is filled, the study says, with "other revenue," including a new category called discretionary revenue that largely comes from wholesaling surplus electricity on the open market…."[293]

In other words, MID charges farmers only 20% of the true cost of delivery. Given their similar rate structures, one can assume TID provides a similar subsidy.

MID's rate structure is as follows:[294]

Fixed charge: $44/acre
First two acre-feet: $2/acre-foot
Third acre-foot: $5/acre-foot
Next six inches: $11.25/acre-foot
Anything above 42 inches: $40/acre-foot

TID's rate structure is as follows:[295]

Fixed charge: $60/acre ($68/acre in dry years)
First two acre-feet: $2/acre-foot
Third and fourth acre-feet: $3/acre-foot
Fifth acre-foot: $15
Additional water: $20/acre-foot

By charging the full cost of water delivery, the Irrigation Districts would not only send a price signal to customers that efficiency pays off, but also would generate revenue to fund some of the projects and infrastructure noted above. Currently, the vast majority of the price of water is incorporated into the fixed charge, and volumetric increases are minimal. Raising volumetric costs, especially in the higher tiers, would further encourage efficiency.

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[292] *See e.g.*, Mitchel *et al*., *Alternate and Alternating Furrow Irrigation Of Peppermint to Minimize Nitrate Leaching*, http://oregonstate.edu/dept/coarc/sites/default/files/publication/92_peppermint_nitrate_leaching.pdf
[293] *Modesto Irrigation District justifies power prices with new study*, Modesto Bee, December 4, 2018. https://www.modbee.com/news/local/article222628120.html#storylink=cpy
[294] MID website – https://www.mid.org/water/irrigation/allocation.html (Last checked April 10, 2019)
[295] TID website – https://www.tid.org/customer-service/rates-rules/irrigation-rates/ (Last checked April 10, 2019)

In sum, the DEIS accepts the premise that acre-feet left in the river mean revenue lost to the agricultural economy. The FEIS should consider and analyze feasible alternatives to achieve existing levels of agricultural production with less water.

K. The DEIS inaccurately determines the value of project power and the cost of alternative power, and contradicts recent evaluations in NEPA documents for other relicensings.

The Developmental Analysis in the DEIS states an average annual cost of alternative power of $74.85 per megawatt-hour (MWh).[296] Additionally, staff defines its basis for valuing power as follows: "The Districts provided an on-peak energy rate of $67/MWh (60 percent of annual generation) and an off-peak energy rate of $55/MWh (40 percent), which results in a composite energy rate of $62.20/MWh (2017c, in AIR response 5(c)).”[297]

This cite in the DEIS should be 2017(e), not 2017(c).[298] The cited document is the Districts' November 27, 2017 Response to an Additional Information Request (AIR) for the La Grange Project made by FERC staff to the Districts on October 27, 2017.[299] In their November 27 Response, the Districts provided dollar values for on-peak and off-peak generation only, not a composite; FERC staff apparently generated the composite figure $62.20/MWh quoted above. It is unclear whether the dollar values the Districts quote are intended to cover the Don Pedro Project as well the La Grange Project. The Districts' November 27 response cites on-peak hours as occurring 48% of the time, but the DEIS uses a 60% figure for on-peak. In total, the Districts' estimation of power prices in their November 27 Response is six lines long. It provides no supporting documentation or analysis.

Throughout the DEIS, staff uses the composite value of $62.20/MWh to determine the cost of measures that impact generation. Yet both of the on-peak and off-peak values from the Districts, on which FERC staff based its composite value, are substantially above current average wholesale market rates for power. For comparison, Conservation Groups downloaded *actual* historical day-ahead locational marginal price (LMP) data (shown in Table 1) for every hour of the year 2018 from the California Independent System Operator (CAISO) Open Access Same-time Information System (OASIS),[300] for the price node in the CAISO system nearest to the Don Pedro project (Figure 10).

[296] DEIS, pp. 545-548/ 4-2 to 4-5.
[297] DEIS, footnote "e" to Table 4.1-1, p. 545/4-2.
[298] Districts' November 27, 2017 Response to AIR for La Grange Project, eLibrary no. 20171127-5105, p. 11.
[299] FERC staff, AIR for the La Grange licensing, October 27, 2017, eLibrary no. 20171027-3002, p. 5
[300] California Independent System Operator (2018). Open Access Same-time Information System (OASIS). http://oasis.caiso.com/mrioasis/logon.do

Figure 10: Nearest CAISO Market Price Node to Don Pedro Project Location.[301]

Summary of 2018 Marginal Prices at Nearest CAISO Price Node to Tuolomne / Don Pedro Project

month	mean	min	p5	p10	p25	Median	p75	p90	p95	max
Jan	$34.79	$12.36	$21.68	$23.97	$29.11	$33.84	$40.10	$47.43	$50.31	$71.65
Feb	$32.26	-$3.92	$6.15	$12.56	$23.36	$31.81	$41.05	$49.26	$58.28	$94.26
Mar	$31.30	-$14.27	$5.12	$13.17	$25.42	$31.66	$38.58	$46.52	$52.07	$83.33
Apr	$19.12	-$22.32	$0.00	$2.36	$9.89	$18.60	$26.58	$38.12	$45.62	$89.07
May	$14.15	-$28.02	-$5.99	-$1.14	$6.91	$14.85	$20.83	$29.35	$34.93	$52.17
Jun	$17.00	-$52.16	-$12.76	-$1.46	$10.11	$19.88	$24.88	$30.37	$35.32	$50.97
Jul	$43.97	$7.26	$12.43	$14.84	$22.18	$29.22	$39.64	$56.40	$120.69	$834.84
Aug	$47.90	$18.83	$27.53	$29.53	$33.48	$39.76	$49.81	$68.04	$84.34	$406.03
Sep	$32.30	$4.59	$20.24	$22.38	$26.69	$30.45	$35.74	$44.64	$49.76	$92.31
Oct	$43.32	$15.33	$26.44	$29.74	$35.16	$40.82	$49.71	$60.13	$68.26	$101.08
Nov	$60.03	$15.09	$29.37	$34.15	$42.97	$56.80	$71.80	$90.04	$102.06	$158.85
Dec	$60.65	$11.27	$33.56	$38.17	$43.22	$54.05	$69.92	$96.13	$110.57	$182.87
Total	**$36.48**	**-$52.16**	**$5.06**	**$11.52**	**$22.99**	**$32.78**	**$44.61**	**$61.41**	**$76.32**	**$834.84**

Prices from 2018 day-ahead-market (DAM) hourly locational marginal prices (LMP) for EXCHQUER_7_B1 Node.
Source: California ISO Open Access Same-time Information System (OASIS). oasis.caiso.com

Table 1: Summary of 2018 Day-Ahead LMP Values at Nearest Price Node

[301] California Independent System Operator (2018). Market price maps. http://www.caiso.com/pricemap/Pages/default.aspx

Table 1 illustrates that the average day-ahead market value for energy was $36.48/MWh at the nearest CAISO node to the Don Pedro project in 2018. From these data, one can conclude that the value of $74.85/MWh used for the average annual cost of alternative power to be more than two times the actual average cost of alternative power in 2018. Using the value of $62.20/MWh for the value of foregone power generation overstates its value by 70%. This also means that the cost to provide additional flow, in terms of foregone power generation, is overstated in the DEIS by 70%.

FERC staff has made this error on other projects. In the 2017 DEIS for the licensing of the Lassen Lodge Hydroelectric Project (P-12496), FERC staff's developmental analysis used an average cost of $88.00/MWh for replacement power for that project. American Whitewater, California Sportfishing Protection Alliance, and Trout Unlimited provided comments stating that this power value was almost three times the market rate for power at that time. Fortunately, FERC staff corrected this error in the FEIS and revised the power rate down to $30.35/MWh.[302] In the 2019 FEIS for relicensing of the Yuba River Development Project (P-2246), FERC staff used a power rate of approximately $36.45/MWh in its economic analysis for the project.[303]

The Don Pedro Project is first and foremost a water supply project. As such, water deliveries will always trump power generation on this project. The project has limited dispatchable capacity and provides little or no ancillary services. This limits the project's ability to take advantage of peak daily energy prices and often must absorb low power prices when solar energy is plentiful midday.[304]

Energy markets are continuing to change rapidly in California and across the country. Increases in renewable energy in California are not speculative: they are mandated by the state. Yet this DEIS provides almost no acknowledgment of this changing landscape. Instead, the Developmental Analysis section of the DEIS provides the standard reference to FERC's policy regarding economic analysis:

> Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corp.*, the Commission compares current project costs to an estimate of the cost of obtaining the same amount of energy and capacity using the likely alternative source of power for the region (cost of alternative power). In keeping with Commission policy as described in *Mead Corp.*, our economic analysis is based on current electric power cost conditions and does not consider future escalation of fuel prices in valuing the hydropower projects' power benefits.[305]

This recitation of a twenty-four-year-old order[306] applies a policy that has become purely and simply inaccurate for evaluating current power market realities in California and across the country. The statement assumes that fuel costs will rise in the future. However, the increase of

[302] FEIS for the licensing of the Lassen Lodge Project, P-12496, eLibrary no. 20180725-3000, p. 298/A-7.
[303] FEIS for the relicensing of the Yuba River Development Project, P-2246, eLibrary no. 20190102-3000, p. 4-5.
[304] DEIS, p. xxvii.
[305] DEIS, p. 544/4-1.
[306] *See Order Issuing New License,* the Escanaba Project, FERC no. 2506, licensee the Mead Corporation, July 13, 1995, eLibrary no. 19950714-3057, p. 11.

wind and solar generation, both of which have zero fuel cost, is driving down average energy prices.[307] The DEIS provides no analysis of how alternatives would (if at all) change the project's grid regulation capacity or how the increased need for that capacity would (if at all) change project operations.

The 1995 Order from which the cited policy derives left the door open to improved analysis: "We recognize that there may be other, equally valid approaches that we could employ. We remain open to new ideas on this subject and to suggestions on further improvements in our analysis."[308] However, decision making for the future based upon past realities is unfortunately common: "Many long-lasting decisions for supply- and demand-side electricity infrastructure and programs are based on historical observations or assuming a business-as-usual future with low shares of variable renewable energy (VRE)."[309]

The time for the Commission to reevaluate how it values hydropower projects is now. Relying on this twenty-three-year-old order, which does not consider the future of energy markets, and does not serve energy needs, hydropower operators, or river systems today, will fail on an ever-increasing scale in the future.

The FEIS should recalculate power values throughout the "Comparison of Alternatives" (p. 548/4-4 and following pages) in the Developmental Analysis using a more accurate value of power based upon real market conditions. The FEIS should not only recalculate an average value, but should also consider current market conditions and clarify the relative frequency of project on-peak and off-peak generation. This evaluation should consider the Districts' ability to move project generation within any given day consistent with their water supply operations.

In addition, the FEIS should consider the movement of generation from month to month for various flow alternatives, and calculate the cost differentials for these alternatives. The FEIS should also evaluate the Districts economic vulnerability (if any) to surplus power on the grid, considering the Districts' ability to bypass powerhouses during conditions when excess power is available to the Districts. Finally, In keeping with Commission policy, the FEIS should evaluate how alternatives would or would not change the capacity of the project.

L. Standard reopeners, ESA consultations on future actions, and licensees' consultations with resource agencies on plans will not protect the interests of NGO stakeholders over the next 30-50 years of license implementation.

Staff acknowledges that a management group to guide implementation of restoration projects and oversee monitoring is reasonable, but does not recommend the formation of such a committee:

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[307] Herman K. Trabish, *Prognosis negative: How California is dealing with below-zero power market prices*, Utility Dive, May 11. 2017. Available at: http://www.utilitydive.com/news/prognosis-negative-how-california-is-dealing-with-below-zero-power- market/442130/

[308] *Order Issuing New License*, the Escanaba Project, *id.*

[309] Joachim Seel, Andrew Mills, Ryan Wiser, Impacts of High Variable Renewable Energy Futures on Wholesale Electricity Prices, and on Electric-Sector Decision Making, Lawrence Berkeley National Laboratory, May 2018. Available at: http://eta-publications.lbl.gov/sites/default/files/report_pdf_0.pdf

> While the concept of an interagency committee to guide the implementation of a spill management plan and Lower Tuolumne River Habitat Improvement Program is reasonable, the Commission has no authority to require other agencies to participate in such a committee, and we therefore do not recommend the TPAC. Instead, we recommend that the Districts consult with appropriate federal, state, and local agencies in preparation of the spill management plan and the Lower Tuolumne River Habitat Improvement Program, if that program is implemented in the future.[310]

Staff suggests instead that the standard Commission "fish and wildlife" reopener, future ESA consultations in the event of new listings, and compliance with laws make a technical advisory group or similar unnecessary.[311]

Staff does not respond to the specific request of Conservation Groups and others who recommended the formation of a management committee that offers the opportunity for their participation, in addition to the participation of resource agencies.

While Conservation Groups respect the resource agencies and value collaboration with the agencies' staff, Conservation Groups' interests are not represented through the Districts' "consultation with appropriate federal, state, and local agencies," particularly not over the term of a 30-to-50-year license. The Commission should recognize that the engagement of informed stakeholders with hydropower managers, operators and regulators is in the interest of those entities, in the public interest, and in the interest of the Commission. The presence and participation of Conservation Groups and other engaged stakeholders in license implementation has value.

It is not unreasonable for the Commission to require the Districts to fund and participate in an independently-facilitated management group as described in Conservation Groups' comments. While the Commission cannot require other agencies and organizations to participate, it can require the Districts to create a venue through which others have the opportunity to participate. Since USFWS, NMFS, CDFW, and Conservation Groups all recommend formation of such a body, it is highly likely that these agencies and organizations will in fact participate.

The FEIS should recommend as part of a revised staff alternative that the Commission order a license condition that requires the Districts to fund and form an independently-facilitated forum to guide implementation of restoration projects and monitoring, as described in Conservation Groups' REA comments.[312]

[310] DEIS, p. 664/5-61.
[311] DEIS, p. 656/5-53.
[312] Conservation Groups' REA Comments, pp. 51-55.

V. CONCLUSION

As described above, the DEIS contains multiple deficiencies:

1) The description of baseline conditions in the DEIS is incomplete and inaccurate.
2) The DEIS does not describe a reasonable range of alternatives, and the alternatives selected are not sufficiently distinct from one another.
3) The DEIS treats project effects as non-project cumulative effects and declines to evaluate and recommend mitigation of project effects.
4) The description of the proposed action in the DEIS is insufficiently detailed.
5) There are conclusions in the DEIS that lack evidentiary basis and are arbitrary and capricious.
6) There are conclusions in the DEIS that are not based on substantial evidence.
7) Staff's findings in the DEIS do not represent a proper and reasoned balancing of resources under FPA Comprehensive Planning clause § 10(a)(1) or demonstrate equal consideration of Power and Non-Power values under FPA § 4(e).

Conservation Groups recommend that staff undertake the evaluations and analyses recommended herein and that the FEIS correct the described deficiencies.

Thank you for the opportunity to comment on the DEIS for the relicensing of the Don Pedro Project and the original licensing of the La Grange Project.

Respectfully submitted this 12th day of April, 2019.

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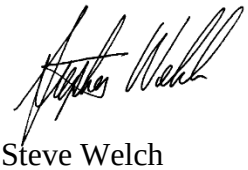

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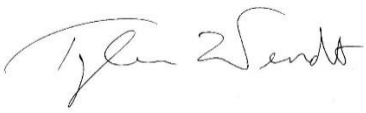

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Attachment 1

Draft Drought Measure

Attachment 1

Draft Drought Measure Recommended for Evaluation in the FEIS in Conjunction with Evaluation of a Complete Flow Alternative under State Water Board flows (Complete "Staff Alternative with Mandatory Conditions")

I. Guiding principle: Droughts cannot be addressed solely on a reactive basis.

Droughts are a regular occurrence in California. Water users, regulators and river advocates can deal with droughts reactively, as was generally the case in 2013-2015 in California, or proactively, reducing diversions and instream demands in advance of crisis. This draft drought measure would allow the largest water users in the Tuolumne River watershed to choose how to manage for droughts, rewarding proactive measures and coupling those measures with reduced instream flow requirements to reduce the consequences of multi-year Dry or Critically Dry sequences. If water users chose not to reduce use in advance of potential drought, this draft measure would set a policy that reduces their opportunity to take further water from the river as drought progresses in light of their previous acceptance of risk.

II. Elements of the draft measure for a Tuolumne River Drought Plan

This draft measure assumes the framework of the lower San Joaquin River flow objectives adopted by the State Water Resources Control Board on December 12, 2018. That framework requires release of 30-50% of the unimpaired flow of the Tuolumne River, with a minimum flow at Vernalis between 800-1200 apportioned at 41% to the Tuolumne River, from February through June, adaptively implemented. This draft measure would modify that framework.

The elements of the draft measure for a Tuolumne River Drought Plan include water-year types; changes to the percent-of-unimpaired flow requirements in certain water-year types and sequences of water-year types; explicit carryover storage requirements; and FERC's adoption of a policy to deny flow variances under the Don Pedro license if the Districts and the City and County of San Francisco exceeded defined levels of water deliveries in the immediately preceding year.

III. Modification of the February-June percent-of-unimpaired flow requirement in Critically Dry years and Critically Dry and Dry year sequences

The draft measure for a Tuolumne River Drought Plan relies on the use of the water-year types defined in the San Joaquin 60-20-20 Index. This Index is already recommended by the Districts and FERC staff, and is incorporated as part of the Revised Bay-Delta Plan that the State Water Board adopted on December 12, 2018.

Under the draft measure for a Tuolumne River Drought Plan, the water year type would re-set each February, March, April and May, adjusted each month with the issuance of DWR Bulletin 120. The February-June percent-of-unimpaired flow requirement would change in single Critically Dry water-year types to 30%. In sequences in which a Dry or Critically Dry

water year followed a year in which the final San Joaquin 60-20-20 Index water-year type (for May) was Critically Dry, the February-June percent-of-unimpaired flow requirement for Dry water-year types would change to 30% and the February-June flow requirement for Critically Dry water-year types would change to 20%.

The State Water Board's February-June and October Vernalis minimum flow requirement (1000 cfs unless otherwise modified within the allowed adaptive range of 800-1200 cfs) would remain intact throughout any period of implementation of the Drought Plan.

For purposes of analysis, recommended flows in July-September and November-January would be flows recommended by Districts under their "with infiltration gallery" flow recommendation.

IV. Carryover storage requirements

Appendix K of the adopted Substitute Environmental Document (SED) for Lower San Joaquin River Flow and Southern Delta Salinity states that the Program of Implementation will include carryover storage requirements for three major storage reservoirs in the lower San Joaquin watershed, including Don Pedro Reservoir. See Appendix K, p. 28. Modelling in support of the SED included such requirements.

Staff should evaluate a requirement that limits or prohibits releases from Don Pedro Reservoir for purposes other than meeting instream flow requirements once storage drops below a defined threshold, similar in structure to the current FERC requirement for Lake McClure in the Merced River Project.[313] Recommended values for evaluation are storage levels of 400 TAF or 500 TAF.

V. Recommended FERC policy to deny requested flow variances if Districts did not reduce diversions in the immediately preceding year

There is resistance by the Districts to the regulatory prescription of reductions in irrigation deliveries, and FERC staff has declined to require such reductions. However, short of prescription, there are options to reward water supply planning that reduces water deliveries in marginal water years in order to reduce risk in subsequent years.

In order to incentivize multi-year reliability over maximizing deliveries in any single year, this draft drought measure would set target water delivery levels for the Districts in different water-year types. Proposed target levels for water deliveries to the Districts 80% of the "assumed maximum diversions" by each entity in Below Normal and Dry years, and 60% of the "assumed maximum diversions" in Critically Dry years. The values of the assumed maximum diversions for each entity (from Table 2-3 on p. 2-7 of the SED, except CCSF) and the targets are shown in the table below. These values assume that diverters junior to the diverters shown in the table divert an equal or lesser percentage of their demand in the same year, except for the City

[313] The Don Pedro Operations Model version 3.10 does not have a specific switch that restricts releases to specific purposes once a certain storage level is reached. It may thus be necessary to in modeling to use carryover storage as a metric and not a requirement.

and County of San Francisco (CCSF). In recognition of CCSF's concerted conservation strategies over the past decade, this draft measure recommends that CCSF's target reduction percentage be one half the percentage reduction required for MID and TID (10% in BN and Dry years; 20% in CD years), provided that CCSF maintains its annual diversions from the Tuolumne River at no more than 224 TAF/year.

Water purveyor	Assumed Max Diversion (afy)	BN/Dry Target (afy)	CD Target (afy)
MID	315,912	252,729	189,547
TID	537,685	430,148	332,611
CCSF[314]	224,000	201,600	179,200

As part of this draft drought measure, FERC would adopt a policy that it would not grant flow variances to the Districts in years that follow years in which its water deliveries exceeded the applicable target percentage (based on the previous year's May water-year type designation). The burden would be on the Districts to make a showing that circumstances warranted a decision in contradiction to this policy.

Since FERC will not condition CCSF or directly hold the Districts responsible for the actions of CCSF, the Districts will have to establish a mechanism to incentivize CCSF to stay within its targets.

Any flow variance request would automatically trigger a proceeding with notice seeking interventions and offering an opportunity to comment or object.

[314] CCSF figures are for deliveries from the Tuolumne River watershed.

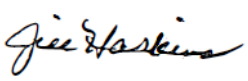
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Modesto Irrigation District	)	
Turlock Irrigation District	)	
Don Pedro Hydroelectric Project	)	P-2299-082
La Grange Hydroelectric Project	)	P-14581-002

Certificate of Service

I hereby certify that the foregoing Comments on the Draft Environmental Impact Statement of California Sportfishing Protection Alliance, Tuolumne River Trust, Trout Unlimited, American Rivers, American Whitewater, Merced River Conservation Committee, Friends of the River, Golden West Women Flyfishers, Central Sierra Environmental Resource Center, Tuolumne River Conservancy, American River Touring Association, Inc., Sierra Mac River Trips, Inc., O.A.R.S. West, Inc., and All Outdoors California Whitewater Rafting, Inc. in the above-captioned proceeding has this day been filed online with the Federal Energy Regulatory Commission and served via email or surface mail upon each person designated on the Service List compiled by the Commission Secretary for this Project.

Dated at San Francisco, California on the 12th day of April, 2019.



Jill Haskins
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Document Content(s)

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