

FEDERAL ENERGY REGULATORY COMMISSION  
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OFFICE OF ENERGY PROJECTS

Project No. 14581-000– California  
La Grange Hydroelectric Project  
Turlock Irrigation District  
Modesto Irrigation District

Mr. Steve Boyd  
Director of Water Resources  
Turlock Irrigation District  
333 East Canal Drive  
Turlock, CA 95381

Mr. Greg Dias  
Project Manager  
Modesto Irrigation District  
P.O. Box 4060  
Modesto, CA 95352

**Reference: Study Plan Determination for the La Grange Hydroelectric Project**

Dear Messrs. Boyd and Dias:

Pursuant to 18 C.F.R. § 5.13(c) of the Commission's regulations, this letter contains the study plan determination for the La Grange Hydroelectric Project No. 14581 (La Grange Project). This determination is based on the study criteria set forth in Section 5.9(b) of the Commission's regulations, applicable law, Commission policy and practice, and the record of information.

Background

On September 5, 2014, the Turlock and Modesto Irrigation Districts (Districts), filed their proposed plan to assess project effects on fish and aquatic resources, recreation, and cultural resources in support of their intent to license the project.

On October 6, 2014, the Districts held an Initial Study Plan Meeting. Comments on the proposed study plan were filed by the National Marine Fisheries Service (NMFS),

the California Department of Fish and Wildlife (CDFW), and the Conservation Groups.<sup>1</sup> On January 5, 2015, the Districts filed a Revised Study Plan, consisting of six proposed studies. Comments on the Revised Study Plan were filed by NMFS and the Conservation Groups.

### General Comments

A number of the comments received do not directly address the study plan, such as editorial suggestions and comments on scoping document 2, comments on project effects, recommended measures to be included in a license, and comments on permits required to conduct studies. This determination does not address these comments but only the merits of the revised study plan submitted pursuant to section 5.13 of the Commission's regulations and comments received thereon.

### Study Plan Determination

Of the six proposed studies filed by the Districts, five are approved with staff-recommended modifications and one is not required (Appendix A). Of the eight requested studies by relicensing participants, one is approved as filed and seven are not required (Appendix A).

The reasons for not adopting proposed study plans, certain requested modifications to the study plans, and requested study plans are discussed in Appendix B. Although Commission staff considered all study plan criteria in section 5.9 of the Commission's regulations, only the study criteria that are particularly relevant to this determination are referenced in Appendix B.

Nothing in this study plan determination is intended, in any way, to limit any agency's proper exercise of its independent statutory authority to require additional studies. In addition, the Districts may choose to conduct any study, or portion of a study, not specifically required herein that they feel would add pertinent information to the record.

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<sup>1</sup> American Rivers, American Whitewater, California Sportfishing Protection Alliance, California Trout, Central Sierra Environmental Resource Center, Friends of the River, Golden West Women Flyfishers, Trout Unlimited, and the Tuolumne River Trust (collectively, Conservation Groups).

If you have any questions, please contact Jim Hastreiter at (503) 552-2760.

Sincerely,

Jeff C. Wright  
Director  
Office of Energy Projects

Enclosures: Appendix A – Summary of determinations on proposed and requested studies  
Appendix B – Staff’s recommendations on proposed and requested studies

cc: Mailing List  
Public File

## APPENDIX A

SUMMARY OF DETERMINATIONS ON PROPOSED  
AND REQUESTED STUDIES

Study	Recommending Entity	Approved	Approved with Modifications	Not Required
<b>Water Resources</b>				
Dennett Dam, Haul Road Bridge Remnant, and Hickman Spill	CG			X
<b>Fish and Aquatic Resources</b>				
Fish Passage Facilities Alternatives Assessment	Districts		X	
Fish Passage Barrier Assessment	Districts		X	
Upper Tuolumne River Basin Fish Habitat Suitability Assessment	Districts			X
Fish Habitat and Stranding Assessment below La Grange Dam	Districts		X	
Effects of the Project and Related Activities on the Losses of Marine-Derived Nutrients in the Tuolumne River	NMFS	X		
Effects of the Project and Related Activities on the Genetic Makeup of Steelhead/Rainbow Trout <i>Oncorhynchus mykiss</i> in the Tuolumne River	NMFS			X
Juvenile Salmonid Floodplain Rearing Study	FWS			X
Chinook Salmon Egg Viability Study	FWS			X
Juvenile Chinook Salmon Survival Study	FWS			X
Genetics of Chinook Salmon in the Upper Tuolumne River	FWS			X
Hyacinth Study	CG			X
<b>Recreation</b>				
Recreation Access and Safety Assessment	Districts		X	
<b>Cultural Resources</b>				
Cultural Resources Study	Districts		X	

\*Districts=Turlock & Modesto Irrigation Districts; NMFS=National Marine Fisheries Service; FWS=U.S. Fish and Wildlife Service; and CG=Conservation Groups.

## APPENDIX B

### STAFF RECOMMENDATIONS ON PROPOSED AND REQUESTED STUDIES

The following discusses staff recommendations on studies proposed by the Districts, studies requested by licensing participants, and requests for study modifications. We base our recommendations on the study criteria outlined in the Commission's regulations [18 C.F.R. Sections 5.9(b)(1)-(7)].

#### I. Requests for Study Modifications

##### *Fish Passage Facilities Alternatives Assessment*

NMFS's Recovery Plan (NMFS 2014) identifies the upper Tuolumne River above the La Grange and Don Pedro projects as a candidate area for reintroduction of Central Valley steelhead and spring-run Chinook salmon. The purpose of the study is to provide information on conceptual anadromous fish passage strategies to inform a decision concerning the potential reintroduction of anadromous fish into the upper Tuolumne River basin, and to inform the Districts' license application concerning the efficacy of proposing fish passage facilities at the La Grange and Don Pedro projects.

##### Applicants Proposal

The Districts propose to identify and develop alternatives for upstream and downstream passage of Chinook salmon and steelhead at the La Grange and Don Pedro dams. Specific objectives for this study are:

1. obtain available information to establish existing baseline conditions relevant to impoundment operations and siting passage facilities;
2. obtain and evaluate available hydrologic data and biological information for the Tuolumne River to identify potential types and locations of facilities, run size, fish periodicity, and the anticipated range of flows that correspond to fish migration;
3. formulate and develop preliminary sizing and functional design for select, alternative potential upstream and downstream fish passage facilities; and
4. estimate construction cost and annual operation and maintenance costs for select fish passage concept(s).

The evaluation of upstream and downstream fish passage alternatives will occur in two phases. Phase 1 (to be conducted in 2015) will involve collaborative information gathering and evaluation of facility siting, sizing, general biological and engineering design parameters, and operational considerations. Phase 2 (to be conducted in 2016) will involve the development of preliminary functional layouts and site plans, estimates of preliminary capital and operation and maintenance costs, and identification of any additional significant information needs for select passage alternatives.

### Comments

NMFS states that they will work with the Districts to collaboratively refine design elements for upstream and downstream fish passage at the La Grange and Don Pedro projects. NMFS requests two modifications to the Fish Passage Facilities Alternatives Assessment study plan: (1) expand the study area for the conceptual fish passage assessment to include the reach of the Tuolumne River upstream of Don Pedro reservoir to the City and County of San Francisco's (CCSF) Hetch Hetchy Project's Early Intake dam; and (2) following the first year of study, if a preferred alternative for upstream or downstream passage is selected that involves reservoir transit, a second year study will be needed to evaluate upstream and downstream transit of anadromous salmonids through Don Pedro reservoir. The State Water Resources Control Board (Water Board) and Conservation Groups filed general comments supporting the study as recommended by NMFS.

### Discussion and Staff Recommendation

The physical features of the La Grange Project that affect anadromous fish passage are the 131-foot-high dam, powerhouse tailrace, and associated 2.2-mile-long reservoir. The Districts' proposed study will address the effects of La Grange dam on the upstream and downstream migration of anadromous fish [section 5.9(b)(5)] in the Tuolumne River. The project also cumulatively affects fish passage along with the licensed Don Pedro Project, which is 2.2 miles upstream. The physical features of the Don Pedro Project that affect anadromous fish passage are the 580-foot-high dam, deep water intake, and its 25-mile-long reservoir. The effects of the Don Pedro Project on anadromous fish passage, end for upstream migrants and begin for downstream migrants, at the upper most extent of Don Pedro reservoir where the back-water effects of the dam do not influence the hydraulic nature of the river.

Because it will be conducted to support its application for both projects, the geographic scope of the Districts' proposed fish passage study includes the Tuolumne River downstream of La Grange dam at the confluence of the main river channel and the powerhouse tailrace channel to the upper Tuolumne River at the upper most extent of Don Pedro reservoir.

The NMFS-requested modification to expand the geographic scope of the proposed fish passage study upstream of the Don Pedro Project to the non-project Early Intake dam would require the Districts to study an area beyond the influence of the Don Pedro Project effects on anadromous fish habitat, and consequently, there is no nexus to project effects for this requested modification [section 5.9(b)(5)]. Early Intake dam is not a project feature because it is part of CCSF's Hetch Hetchy Project. NMFS would need to conduct a study on its own to provide support for their section 18 prescription, if it includes a downstream passage facility at Early Intake dam.

We acknowledge that additional study of the movement of anadromous fish through the projects' reservoirs may be necessary depending on the results of Phase 1. If the Phase 1 (conducted in 2015) results indicate that the most feasible concept for fish passage at either project would involve passage through the project reservoirs, we recommend a second-year study to evaluate the technical and biological feasibility of the upstream movement of adults and downstream movement of juvenile anadromous salmonids through the La Grange and Don Pedro project reservoirs [section 5.9(b)(5)]. In that situation, we recommend that the Districts include a study plan, developed in consultation with interested stakeholders, in its initial study report. We recommend that the Districts allow a minimum of 30 days for all stakeholders to comment and to make recommendations before filing the study plan in the initial study report. If the Districts do not adopt a recommendation, we recommend that the initial study report include the Districts' reasons, based on the study criteria set forth in §5.9 of the Commission's regulations.

With the modification discussed above, the study would be a reasonable approach to evaluate various fish passage alternatives at the project, and is consistent with the other fish passage feasibility analyses conducted within the context of hydroelectric licensing cases [section 5.9(b)(6)].

### ***Fish Passage Barrier Assessment***

La Grange dam and operation of the dam and project powerhouse create barriers to the upstream migration of anadromous fish. The Districts state that the purpose of the study is to determine if La Grange dam or operation of the powerhouse create barriers and impediments to upstream anadromous fish migration.

#### Applicants Proposal

The proposed study will evaluate the extent to which La Grange dam and powerhouse are barriers to the upstream migration of anadromous fish (i.e., fall-run Chinook and, if they occur, steelhead) or adversely affect their spawning by:



1. operating a fish counting weir to determine the number of anadromous fish (fall-run Chinook salmon and steelhead) migrating upstream to the dam and the powerhouse;
2. comparing total escapement to the number of anadromous fish migrating upstream to the dam and the powerhouse (i.e., above the counting weir) and not returning to downstream spawning habitat;
3. documenting carcass condition (egg retention) to evaluate pre-spawn mortality rates of anadromous fish migrating upstream to the dam and the powerhouse (i.e., those that do not return to downstream spawning habitat); and
4. documenting fish observations in the immediate vicinity of the dam, the powerhouse, and in the Turlock sluiceway channel.

The study would consist of the following three tasks.

1. *Planning and Permitting*

Permits will be required to operate the fish counting weir in the vicinity of the La Grange Project, including a Section 4(d) take authorization for Central Valley steelhead from NMFS, a Streambed Alteration Agreement and Scientific Collector Permit amendments from California Department of Fish and Wildlife (CDFW), and a Section 404 permit from the U.S. Army Corps of Engineers, which could also require a Section 401 water quality certification from the Water Board. In some cases, existing permits may be amended to include operation of the proposed new counting weir near the La Grange Project facilities. Permits are expected to take six months to obtain, and some permit applications must be submitted prior to the Study Plan Determination. For instance, Section 4(d) take authorizations are issued on a calendar-year basis, with applications due each fall for the coming year. Due to this timeline, a 4(d) take authorization was requested in October 2014 to allow counting weir monitoring to begin in fall 2015.

Equipment will be obtained or fabricated in preparation for field data collection, with the primary components consisting of a weir and a video system. The weir will be designed to allow unimpeded upstream and downstream fish passage. No fish will be handled at the weir.

2. *Field Data Collection*

To collect Year-1 data, a fish counting weir consisting of two segments will be installed in the Tuolumne River in late August to early September of 2015 and be

operated through at least April 2016, flows permitting. The same monthly schedule will be followed in the 2016/2017 season to collect Year-2 data. One weir segment will be placed downstream of the large pool below La Grange dam in the Tuolumne River main channel, and the second segment will be placed just below the La Grange powerhouse in the tailrace channel. The counting weirs will be operated to determine the number of migrating fish that move upstream of the weirs. The total number of migrating fish exhibiting upstream migration behavior will be defined as the net difference between upstream and downstream fish counts at the weir. Sampling will end approximately 5-10 days following the spring pulse flow. In addition to monitoring Chinook salmon, any *O. mykiss* encountered at the counting weir during the sampling period will be recorded. Monitoring methods will be similar to those employed at the weir operated since 2009 at RM 24.5 (Becker et al. 2014). Continued monitoring at the downstream site (RM 24.5) will be used to determine total escapement to the Tuolumne River for comparison to the number of fish approaching the La Grange dam or the La Grange powerhouse and not moving back downstream to estimate the extent to which the La Grange facilities are actually a barrier to upstream migration and spawning. Hourly water temperature and instantaneous dissolved oxygen data will be collected at the weir.

Salmon encountering barriers to migration may experience pre-spawn mortality. During carcass surveys conducted to estimate salmon escapement, CDFW examines female salmon carcasses for egg retention to estimate pre-spawn mortality of Chinook salmon. Assessments have been conducted in several Central Valley streams in some years, but it is more common for the data not to be collected due to a lack of available funding and staff. CDFW has documented low levels of pre-spawn or partial-spawn mortality of fall-run Chinook in the Tuolumne River during surveys conducted in 1993, 1999, 2008, 2013, and 2014 (CDFW 2014).

To evaluate the potential effect of the La Grange dam and the La Grange powerhouse on the spawning of upstream migrants, the Districts propose to conduct weekly surveys above the counting weir during 2015-2016 and 2016-2017 to assess the presence/absence of live Chinook salmon, spawning activity or carcasses, and to evaluate egg retention in female carcasses. Similar to egg retention evaluations conducted by CDFW, fresh female carcasses will be classified as spent if few eggs are remaining, as partially spent if a substantial amount of the eggs remain (i.e., 50 percent to nearly full), and unspent if the ovaries appear nearly full of eggs (Guignard 2005, Snider et al. 2002). The location, date, and time of discovery; sex; and presence of fin clips will be recorded for each carcass. The Districts will collect each anadromous salmonid carcass found upstream of the weir, freeze it, and then deliver it to the CDFW office in La Grange.

Observations of fish above the counting weir and in the Turlock sluiceway channel will be conducted twice daily (times will vary as a function of existing workload) by project operators in the immediate vicinities of the La Grange dam, La Grange

powerhouse, and within the Turlock sluiceway channel. Observations will be recorded on standardized datasheets, which will include the following information:

- date and time of observation;
- approximate discharge and conduit status at time of observation;
- powerhouse output at time of observation;
- number of fish observed and their approximate size;
- identification of species, if possible; at a minimum, each fish will be identified as either a salmonid or non-salmonid;
- locations of fish (to be indicated on a previously-generated base map);
- description of general fish behaviors, such as moving upstream or downstream, spawning, holding in one specific location, or leaping/jumping;
- notation of any observations of fish swimming into the La Grange powerhouse tailrace;
- notation of any observations of fish swimming into the Turlock sluiceway channel; and
- notation of any redds that become dewatered and the duration of any dewatering, due to a change in powerhouse operations.

### 3. *Data Management, Analysis, and Report Preparation*

Weir monitoring data will be downloaded or entered into a database frequently during the field data collection periods, error checked, and summarized. Data will include images of passing fish and corresponding information such as date, time, and direction of passage, species, and estimated fish size; instream conditions (i.e., water temperature and turbidity); and weir performance. Raw data will be summarized to determine daily upstream and downstream weir counts and the total number of fish exhibiting persistent upstream migration behavior (upstream counts minus downstream counts). The total number of fish exhibiting persistent upstream migration behavior will be divided by total escapement determined at the lower weir (at RM 24.5). Any spawning activity, live Chinook salmon or *O. mykiss*, or carcasses observed upstream of the weir will be reported. Egg retention rates will be reported for any female Chinook salmon carcasses observed. Datasheets on incidental observations of fish in the vicinity of the La Grange dam, La Grange powerhouse, or Turlock sluiceway channel will be input into an electronic database, summarized, and included as part of reporting. Preliminary results for the majority of the fall-run Chinook migration period during the first year of monitoring (i.e., September 2015-December 2016) may be able to be provided in the Initial Study Report in February 2016. Based on the results of the 2015-2016 study season modifications to the study may be made prior to implementation of the 2016-2017 study season. Comprehensive reporting of the results from the two-year study will be submitted in September 2017. The location of any dewatered redds and the

duration of any dewatering due to a change in powerhouse operations, will be recorded. NMFS, FWS, and CDFW will be notified within 1 day of observation of dewatered redds.

### Comments

In comments on the Preliminary Application Document, NMFS, CDFW, and Conservation Groups state that La Grange dam and powerhouse are barriers to upstream anadromous fish migration, and a study to evaluate whether the dam and powerhouse are barriers is not needed. No comments were filed in response to the Revised Study Plan.

### Discussion and Staff Recommendation

La Grange dam and operation of the dam and project powerhouse are barriers and impediments to the upstream migration of anadromous fish [section 5.9(b)(5)]. The information collected in this study would help define the nature and degree to which the dam and powerhouse are barriers or impediments to the upstream migration of anadromous salmonids. No modifications to the study plan are recommended.

### ***Upper Tuolumne River Basin Fish Habitat Suitability Assessment***

NMFS's Recovery Plan (NMFS 2014) identifies the upper Tuolumne River above the La Grange and Don Pedro Projects as a candidate area for reintroduction of Central Valley steelhead and spring-run Chinook salmon. Little information exists to reliably assess the current quantity and quality of suitable habitat for the various life stages of these salmonid species in the upper Tuolumne watershed. The purpose of the study is to provide information requested by NMFS to inform its decision concerning reintroduction of anadromous fish into the upper Tuolumne River basin.

### Applicants' Proposal

The Districts propose to conduct a two-year, phased investigation of migration barriers to upstream anadromous salmonid migration, water temperature monitoring and modeling, and characterization of habitat conditions in the upper Tuolumne River above the Don Pedro Project and appropriate tributaries downstream of the CCSF's Hetch Hetchy Project Early Intake dam.

The Districts propose to conduct field surveys to identify barriers to the upstream migration of anadromous salmonids along the: (1) mainstem Tuolumne River upstream of the Don Pedro Project Boundary; (2) North, Middle, and South forks of the Tuolumne River; (3) Cherry Creek; and (4) Clavey River. The Districts also propose temperature monitoring in portions of the same river reaches listed above. Potential habitat

characteristics above the Don Pedro Project boundary and additional habitat information needs will be assessed by the Districts based on the results of the barrier assessment, temperature evaluation, and a NMFS habitat suitability analysis expected to be available in fall 2015.

This assessment will include three primary components:

1. identify barriers to upstream anadromous salmonid migration
  - review existing survey results
  - conduct field surveys (2015 and 2016)
  - prepare report to be included in the initial study report
2. water temperature monitoring and modeling
  - identify, synthesize, and interpret existing water temperature and flow data
  - install temperature data loggers
  - water temperature modeling
  - prepare report to be included in the initial study report
3. upstream habitat characterization
  - collaborative review of results from NMFS LiDAR/hyperspectral remote sensing study
  - identification of additional information needs to assess upstream habitat conditions

### Comments

NMFS request that the Districts quantify existing upper Tuolumne River habitats for anadromous fish by:

1. identifying natural and artificial barriers to migration for salmonids in the upper Tuolumne River upstream of Don Pedro reservoir;
2. synthesizing available water temperature data for the upper Tuolumne River upstream of Don Pedro reservoir;
3. implementing monitoring actions recommended in the technical report-Upper Tuolumne River: Description of River Ecosystem and Recommended Monitoring Actions (McBain and Trush 2007); and
4. developing a salmonid life-cycle model using the information obtained from the above elements.

Without providing any specific detail, the Water Board made a general statement that the Districts should conduct a study of anadromous fish habitat in the Upper Tuolumne River above the Don Pedro Project.

#### Discussion and Staff Recommendation

In the proposed study, the Districts include most of the components requested by NMFS, except for development of the salmonid life-cycle model for Chinook salmon and steelhead upstream of Don Pedro reservoir. The Districts state that they developed the production model of anadromous fish in the lower Tuolumne River as part of the Don Pedro Project proceeding because of the connection between that project's operation and effects on anadromous fish habitat. They do not believe there is a connection between the La Grange Project's operation and anadromous fish habitat in the upper Tuolumne River upstream of Don Pedro reservoir.

Potential anadromous fish habitat in the upper Tuolumne River above the Don Pedro Project is not affected by operation of either the La Grange or Don Pedro projects. Consequently, there is no nexus between the Don Pedro and La Grange Projects and effects on anadromous fish habitat in the upper Tuolumne River [Section 5.9(b)(5)]. Also, the suitability of upstream habitat for anadromous salmonids, as it relates to recovery planning under NMFS guidelines, pertains to management decisions and actions which most appropriately fall under NMFS jurisdiction. While the results of the proposed study may inform a NMFS decision on the reintroduction of anadromous fish into the upper Tuolumne River, the proposed study is not necessary for Commission staff to evaluate the potential effects of operation of the La Grange Project on fisheries resources in the lower Tuolumne River. Therefore, we do not recommend that the Districts be required to conduct a study of anadromous salmonid migration barriers, water temperature monitoring and modeling, and characterization of habitat conditions in the upper Tuolumne River above the Don Pedro Project.

#### ***Fish Habitat and Stranding Assessment below La Grange Dam***

The five La Grange project flow release structures (i.e., the powerhouse, the La Grange dam spillway, the Turlock sluiceway, the Modesto hillside discharge gate, and La Grange dam sluiceway) used to pass flow from La Grange Project to the lower Tuolumne River have the potential to influence fish behavior and movement in the immediate vicinity downstream of La Grange dam. In addition, flow release variations from the dam and powerhouse have the potential to strand fish in the main channel below the dam and in the project tailrace and channel which return flow to the river.

### Applicants' Proposal

The Districts propose to conduct a two-year evaluation of flow effects on salmon habitat and behavior in the immediate area of the project under certain flow conditions. The Districts' proposed study consists of the three elements described below.

1. Develop hydrologic data for flow conduits at the La Grange Project by
  - continuing existing monitoring of discharges associated with the La Grange powerhouse, La Grange dam spillway, and the Turlock sluiceway;
  - conducting two years of monitoring of the Modesto hillside discharge gate and La Grange dam sluiceway; and
  - based on existing information, to the extent available, characterizing the magnitude and rate of flow and stage changes when project conduits are shut down.
  
2. Collect topographic, depth, and habitat data in the vicinity of the La Grange Project facilities by
  - surveying longitudinal profiles and transects along the channel thalweg in the La Grange powerhouse tailrace channel, Turlock sluiceway channel, and the mainstem river channel upstream of where it joins the tailrace channel;
  - measuring water depths at a flow of approximately 25 cubic feet per second (cfs) in the mainstem river channel upstream of where it joins the tailrace channel and at approximately 75 to 100 cfs in the La Grange powerhouse tailrace channel and the Turlock sluiceway channel;
  - mapping substrate and habitat in the reaches where longitudinal profiles are surveyed, delineating pools, runs, high- and low-gradient riffles, step-pools, and chutes;
  - mapping patches of spawning-sized gravels in the tailrace and mainstem upstream of the tailrace that are greater than 2 square meters; and
  - conducting pebble counts in riffles, runs, and pool tailouts to document substrate particle size distribution in these habitats.
  
3. Assess fish presence and the potential for stranding by
  - conducting periodic direct visual observations in the Turlock sluiceway channel downstream to the confluence of the La Grange powerhouse tailrace and the main channel of the Tuolumne River to assess the presence and potential stranding of salmonids.

### Comments

NMFS states that the Districts revised study plan incorporates some of their proposed hydrology analyses of the five flow release structures used to pass flow from the La Grange Project to the lower Tuolumne River, topographic and habitat mapping, and observations of fish presence and potential for stranding in the Turlock sluiceway channel. NMFS points out that some of the elements it recommended for this plan are either missing, lack necessary detail, or are insufficient in scope, data collection, and analyses. The Water Board supports an assessment of habitat in the tailrace channel as proposed by the Districts.

For the hydrologic analysis, NMFS requests that the hydrology data be developed for all five flow release structures and for as long a period as possible. NMFS states that in the study plan meeting, the Districts indicated they were unsure how far back in time it was possible to back-calculate these discharges, but the year 2007 was provided as an estimate. NMFS suggests that flow releases from the Turlock sluiceway and spill over La Grange dam are important since changes in flow from these two structures create significant stranding risks for anadromous fish and data from a longer time period is necessary for an adequate evaluation. NMFS says the two-year monitoring period proposed by the Districts for the collection of hydrological data is insufficient because the current drought and low reservoir storage level could bias the monitoring period to a limited and specific range of operational conditions.

For surveying the longitudinal profiles in the channels below the dam and powerhouse where fish stranding is a concern, NMFS recommends that specific geomorphic features be surveyed (i.e., hydraulic control points and maximum depths), with spacing of survey points not to exceed 10 feet. NMFS also recommends that the water surface profile measurements (or measurement of water depth at the elevation survey points) be made at the same time as the longitudinal profile surveys.

NMFS requests that a qualified fisheries biologist be present for observation of the Turlock sluiceway channel whenever discharge is occurring into the channel and particularly during periods of flow transition from full flow in the sluiceway channel to the closing of the sluiceways and subsequent dewatering of the channel.

Lastly, NMFS requests an evaluation of the prevailing operational conditions at the powerhouse tailrace, including collection of hydraulic information and direct monitoring (with an underwater ARES camera) of fish potentially attempting to enter the tailrace to determine the need for a tailrace barrier.



### Discussion and Staff Recommendation

The historical flow records from the five release structures at the La Grange Project was considered and addressed in the study determination process for the Don Pedro Project and continues to be an issue for NMFS in this study determination process. In Don Pedro, the study plan determination required the Districts to identify and provide all existing flow records related to the five release structures at the La Grange Project. The Districts filed that existing information both in the Don Pedro proceeding and in the La Grange proceeding. In the initial study plan meeting for La Grange, the Districts stated that they may be able to create more of a historical flow record for some of the release structures. The Districts did not mention any attempt to create additional historical flow records in the revised study plan. Having additional historical flow records below La Grange dam would inform an evaluation of project effects on anadromous fish habitat. We recommend that the Districts develop additional historical flow records for all of the five release structures at the project, if existing information allows for some sort of back-calculation method to provide such historical estimates. If this is not possible, the Districts should provide an explanation in the initial study report.

For surveying the longitudinal profiles in the channels below the dam and powerhouse where fish stranding is a concern, the Districts plan states that measurement points will be located at 10-foot intervals along each longitudinal profile and maximum water depth would be measured during the longitudinal profile data collection, which corresponds with NMFS's request. However, the Districts plan does not mention taking measurements at important geomorphic hydraulic control points in the channels below the dam and powerhouse. We recommend that the Districts take measurements at all hydraulic control features, such as pool tailouts, rock outcroppings, ledges, and other immobile bed features that determine the stage-discharge relation.

To assess fish presence and the potential for stranding of anadromous fish, the Districts plan states that daytime, direct visual observation of fish presence will be made in the Turlock sluiceway channel from August 2015 through April 2016 and August 2016 through April 2017 any time that a flow change occurs in the Turlock sluiceway channel. In addition, if during these periods the La Grange powerhouse trips offline, biologists would be notified to report to the site for observation of the sluiceway and tailrace channels. Observations would occur during any flow transition from the time of maximum flow in the sluiceway channel through the subsequent closing of any of the sluiceway gates and until complete cessation of the sluiceway flow release.

This protocol is sufficient to gather information on fish stranding in the Turlock sluiceway channel and powerhouse tailrace channel for our evaluation. However, the Districts' plan does not include protocols for monitoring anadromous fish movement into the powerhouse tailrace and the potential for injury or mortality by contact with the

turbine runners. NMFS recommends use of an underwater ARES camera to detect anadromous fish movement up into the draft tubes when anadromous fish are present in the tailrace. While a camera could provide information to determine if a tailrace barrier is necessary at the project, we are concerned that the turbulence associated with discharge from the draft tubes could prevent an adequate view of fish presence in the draft tubes.

Instead, we recommend that the Districts develop a plan, in consultation with NMFS and any other interested stakeholder, for monitoring anadromous fish movement into the powerhouse draft tubes, and implement the plan beginning in 2015 for the anadromous fish migration. The plan should be filed with the Commission for approval by April 1, 2015. The Districts should allow a minimum of 30 days for NMFS and interested stakeholders to provide written comments and recommendations on the plan. The filing should include copies of any comments and recommendations received, and a discussion of how the consulted stakeholders comments and recommendations have been considered. If the Districts do not adopt a recommendation from NMFS or an interested stakeholder, the filing should include their reasons, based on project-specific information.

The Districts' proposed study, with the modifications discussed above, would provide information to evaluate the effects of project operation on stream flow and anadromous fish habitat in the Tuolumne River between La Grange dam and La Grange gage and is consistent with other fish habitat analyses conducted within the context of other hydroelectric cases [section 5.9(b)(6)].

### ***Recreation Access and Safety Assessment Study***

The purpose of the study is to identify and evaluate the safety of any potential recreation resources at the project. Additional investigations of potential recreation enhancements may occur as a second phase of this study, depending upon the results of the first phase.

#### *Study Area*

##### Applicants' Proposal

The applicants' proposed study would evaluate potential public access routes that may exist along the east (left) bank of the Tuolumne River from Don Pedro dam (54.8) to approximately 200 feet downstream of the terminus of the La Grange bypassed reach (RM 51.8).

### Discussion and Staff Recommendation

The proposed study area does not include the west (right) bank of the Tuolumne River for potential public access ways along this reach. By excluding an examination of the west bank of the river for recreation opportunities, the study could miss opportunities for potential recreational access that may exist along the west bank, including utilizing the Don Pedro powerhouse access road. Therefore, we recommend that the study include an examination of the west (right) bank of the Tuolumne River along this reach for potential public access routes [section 5.9(b)(5)].

### *Existing Recreational Use*

#### Applicants' Proposal

The applicants do not propose collecting information on existing recreation at or around the La Grange Project, because there are no recreation facilities located along the project reach, and public access has been historically limited to occasional use by adjacent property owners.

#### Comments

Conservation Groups request that the study include estimates of existing recreational use at the project.

### Discussion and Staff Recommendation

Existing recreation use at the project is limited by a lack of recreation facilities and access to the project. Therefore, obtaining data on such limited existing recreation at the project would not justify the additional level of effort and cost [section 5.9(b)(7)].

### *Cultural Resources Study*

#### Applicants' Proposal

The Districts propose to conduct a cultural resources study to: (1) identify cultural resources within the project's area of potential effects (APE); (2) evaluate their eligibility for the National Register of Historic Places (National Register); and (3) identify any project-related effects on those resources. Cultural resources within the project's APE could include archaeological sites, project facilities, and traditional cultural properties (TCPs). Methods to locate, evaluate, and assess such resources could be followed by archival research, a field survey, a tribal field visit, National Register evaluations, assessment of project-related affects, and reporting.

### Comments

No comments were filed on this study. However, we note that the Districts initially defined the APE of the project as lands immediately downstream of the La Grange diversion dam that would include the La Grange Project powerhouse, tailrace, and access roads but not the impoundment.

### Discussion and Staff Recommendation

Because the impoundment is used to generate electricity for the project, potential project-related adverse effects could occur on cultural resources in or near the La Grange impoundment where operation causes water levels to fluctuate between 296.46 and 294.00 feet mean-sea-level (msl) which could cause erosion to archaeological sites or TCPs. Other project-related effects could include vandalism to sites caused by individuals collecting or digging for artifacts along the exposed shorelines and surface damage or disturbance to such sites by maintenance and operating activities (principally vehicular traffic) associated with the project.

Section 106 of the National Historic Preservation Act requires the Commission to adequately define an APE that covers all areas where potential project-related adverse effects could occur on cultural resources that are eligible for the National Register. According to the regulation implementing section 106, an APE is defined as “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if such properties exist” (36 C.F.R. 800.16[d]). Therefore, to fully comply with section 106, Commission staff would include the La Grange impoundment as part of the APE for this project. The expanded APE would encompass a 100-foot buffer zone beyond the maximum water surface elevation (reservoir spillway elevation) around the La Grange impoundment and would extend up-river from the La Grange diversion dam to the base of the Don Pedro dam.<sup>2</sup> The 100-foot buffer zone beyond the maximum water surface elevation is the same width the applicants used for their definition of the APE around the Don Pedro reservoir. The applicants could use the same methods as described in their January 2015 cultural resources study to cover the La Grange impoundment portion of the APE, including seeking concurrence from the SHPO on the total extent of the APE (including associated maps), doing archival research, field survey, tribal visits, National Register evaluations, and assessment of project-related adverse effects. Because there is the possibility of

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<sup>2</sup> See page 14 of the Commission’s Scoping Document 2, issued September 5, 2014, that defines the reservoir as extending approximately 11,352.5 feet at a normal water surface elevation of 296.46 feet msl. This extent would essentially bring the La Grange impoundment upriver to the Don Pedro dam.

locating additional pre-contact archaeological sites or places of traditional religious and cultural importance to Indian tribes in the La Grange impoundment APE, we also recommend that the applicants expand their methods in the tribal field visit section (Step 4) from a single field visit with tribal members, to include an ethnographic review of possible tribal resources. This could include more than one tribal visit or contacts with tribal members. The ethnographic review would also require the hiring of a qualified professional ethnographer to: (1) assess potential TCPs in the APE; (2) conduct interviews with knowledgeable tribal members; (3) organize tribal field visits; and (4) incorporate the results of the ethnographic research, tribal interviews, and field visits in the reporting section (Step 7).

Therefore, Commission staff recommends modifying section 6.1 (Area of Potential Effects) of the cultural resources study to read:

“For the La Grange Hydroelectric Project, the APE is defined as lands immediately downstream of the La Grange diversion dam and the La Grange impoundment upstream of the La Grange diversion dam. For the downstream portion, the APE includes the La Grange project powerhouse, tailrace, and La Grange project access roads. For the upstream portion, the APE includes a 100-foot buffer zone beyond the normal maximum water surface elevation (reservoir spillway elevation of 296.46 feet msl) of the La Grange impoundment, starting at the La Grange diversion dam and extending upriver to the Don Pedro dam...”

And step 4 of section 6.3 to read:

“Step 4 – Ethnographic Review and Tribal Field Visits”

“As defined above, historic properties may include properties of traditional religious and cultural importance. To identify resources that may be of traditional religious and cultural importance to local Native American Tribes, the Districts will hire a qualified professional ethnographer to conduct archival research and tribal interviews with knowledgeable tribal members, and upon request from the involved tribes, the Districts will invite tribal members to attend field visits with the ethnographer to the La Grange project and/or provide any information regarding such locations in the area...”

## **II. Studies Requested but not Adopted by the Districts**

### ***Request for Information or Study of Effects of the Project and Related Activities on the Losses of Marine-Derived Nutrients in the Tuolumne River***

NMFS requests that the Districts provide information (through desktop analysis) on the effects of project-related activities on the loss of marine-derived nutrients in the

Tuolumne River. NMFS states its long term goal is to recommend license conditions for “fertilization” of the upper Tuolumne River because of the nutrient deficits caused by blocked upstream access for anadromous fish at La Grange dam. NMFS seeks to have the information generated for five elements:

1. estimate a range of the historic mass of marine-derived nitrogen transported annually by Chinook salmon (all runs) to the Tuolumne River;
2. estimate the historic mass of marine-derived nitrogen transported annually by spring-run Chinook salmon to the upper Tuolumne River;
3. estimate the current annual mass of marine-derived nitrogen transported by fall-run Chinook salmon to the Tuolumne River;
4. estimate the annual loss from historic to current levels of marine-derived nitrogen transported by fall-run Chinook salmon to the Tuolumne River; and
5. compare the difference of marine-derived nitrogen incorporated into periphyton and aquatic benthic macroinvertebrates collected in the upper and lower Tuolumne River.

#### Comments on the Study

In its proposed study plan, the Districts did not adopt this study request saying that it is intended to establish pre-project conditions related to the delivery of marine-derived nutrients to the upper Tuolumne River.

#### Discussion and Staff Recommendation

La Grange dam prevents anadromous fish access to aquatic habitat in the upper Tuolumne River [section 5.9(b)(5)], and as a result, there has been a loss of marine-derived nutrients in the Tuolumne River. NMFS’s requested study is linked to the lack of anadromous fish passage at project facilities. While we agree with the Districts that the baseline does not include upstream fish passage and marine-derived nutrients above the Don Pedro Project, information from this study could assist in developing license conditions to mitigate for the loss of marine-derived nutrients in the Tuolumne River [section 5.9(b)(5)]. We recommend that the Districts conduct this NMFS study as recommended.

***Effects of the Project and Related Activities on the Genetic Makeup of Steelhead/Rainbow Trout *Oncorhynchus mykiss* in the Tuolumne River***

Agency or Other Entity's Recommended Study

NMFS requests a study to investigate the baseline genetic status/condition of the upper and lower Tuolumne River *O. mykiss* populations because the impassable La Grange dam and other project facilities interrupt gene flow. Specifically NMFS asks for: (1) timely submittal of a plan, and other necessary information, in applications to the CDFW and NMFS to obtain the required collection permits; (2) non-lethal collection of (caudal fin) tissues from *O. mykiss* sampled from throughout the upper and lower Tuolumne River and tributaries (including rearing juveniles and immigrating adult steelhead captured at the weir in the lower river; (3) laboratory genetic analysis of the tissues; and (4) analysis and interpretation of the genotype data, using appropriate *O. mykiss* database information and statistically-based analysis tools to describe the population structure, relationship to other California Central Valley populations (including those propagated in hatcheries), genetic diversity, and other effects likely to result from gene-flow impairment.

Comments

The Districts did not adopt this study request because they believe it is a research effort for determining the genetics of *O. mykiss* and would not inform license requirements. NMFS says the information could be used to develop fish passage prescriptions, and lower river habitat enhancement and monitoring measures.

Discussion and Staff Recommendation

The study plan determination for the Don Pedro Project (FERC No. 2299) did not require similar genetics studies of Tuolumne River *O. mykiss* and Chinook salmon<sup>3</sup> because while such a research effort may be needed to make fishery management and reintroduction decisions, it will not inform the development of licensing requirements [section 5.9(b)(5)]. We, therefore, do not recommend that the Districts conduct this study.

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<sup>3</sup> Study Plan Determination for the Don Pedro Hydroelectric Project December 22, 2011; Findings and Recommendations of the Study Dispute Panel for the Don Pedro Hydroelectric Project Study Dispute (P-2299-075) May 4, 2012; Director's Formal Dispute Determination May 24, 2012; Determination on Requests for Study Modification and New Studies for the Don Pedro Hydroelectric Project May 21, 2013; and Determination on Requests for Study Modification for the Don Pedro Hydroelectric Project April 29, 2014.

### ***Juvenile Salmonid Floodplain Rearing Study***

#### Agency or Other Entity's Recommended Study

FWS requests a study to evaluate project effects on the total amount of available habitat in the lower Tuolumne River for various life stages of fall-run Chinook salmon and *O. mykiss* to determine instream flows necessary to maximize production and survival throughout these species various life stages.

Specifically, FWS wants to determine: (1) the amount, inundation frequency, and inundation period of off-channel rearing habitats used by fry and juvenile salmonids; (2) the amount of off-channel habitat created at different instream flows for pre- and post-project flow regimes; (3) the inundation frequency and period of inundation of off-channel habitats for pre- and post-project flow regimes; (4) potential threshold flows (i.e., flows that result in a large increase in the amount of habitat created with a small flow increase; and (5) potential restoration sites and methods, including water operation modification, that may be used to increase the availability of off-channel habitat that is inundated sufficiently to increase the growth and survival of fry and juvenile salmonids.

#### Comments on the Study

The Districts did not adopt this study in its revised study plan, stating that the La Grange Project has no effect on flows in the lower Tuolumne River. The Districts note that the study requested by FWS concerning flood plain aquatic habitat in the lower Tuolumne River has been previously developed or is being developed by an existing study in the Don Pedro Project proceeding.

#### Discussion and Staff Recommendation

This FWS study is identical to the study FWS requested for the Don Pedro Project study determination proceeding. The Don Pedro study determination approved the Districts proposed instream flow study on the lower Tuolumne River that includes an assessment of floodplain habitat, because the storage and release of flow from the Don Pedro Project affects flow in the lower Tuolumne River from La Grange gage downstream to the confluence with the San Joaquin River. The operation of the La Grange Project has only a localized effect on flow in the approximately 0.5-mile reach of the river from the La Grange dam to the La Grange gage. Therefore, no nexus exists between operation of the La Grange Project and flows in the lower Tuolumne River [section 5.9(b)(5)]. We, therefore, do not recommend that the Districts conduct this study.



## *Chinook Salmon Egg Viability Study*

### Agency or Other Entity's Recommended Study

FWS requests a study to evaluate project effects on Chinook salmon eggs located in the lower Tuolumne River related to water temperature. Specifically, FWS wants to determine: (1) if egg survival is significantly different on a longitudinal gradient (compare survival in a downstream direction); (2) if hyporheic temperature (i.e., the water temperature in the spaces within the gravel) and dissolved oxygen differs across all sites and how that impacts egg survival; and (3) if permeability across all sites differs significantly and impacts egg survival.

### Comments on the Study

The Districts did not adopt this request stating that the study is not necessary because existing information is adequate. The Districts note that egg survival to emergence has been extensively studied (TID/MID 1992; Stillwater Sciences 2007) and incubation temperature criteria are well established in the literature. In addition, the Districts state that FWS did not explain why existing information is not adequate and why FWS is repeating this study it requested in the Don Pedro Project proceeding.

### Discussion and Staff Recommendation

This FWS study is identical to the study FWS requested for the Don Pedro Project study determination proceeding. The Don Pedro study determination found that egg survival to emergence has been extensively studied in the Tuolumne River, with the results indicating that poor spawning gravel quality, due to infiltration of fine sediment, is the primary cause for low survival-to-emergence rates in the lower Tuolumne River. Gathering additional egg viability information is not necessary to identify measures or conditions that might improve egg viability. We also noted that the FWS-proposed study would not distinguish between temperature-related and other contributions to reduced egg viability and, therefore, would not inform the development of license requirements related to temperature beyond that inferred through comparison of in-river temperatures with EPA (2003) guidelines [section 5.9(b)(5)]. Given that existing information indicates that the intrusion of fine sediments is a primary factor relating to egg viability [section 5.9(b)(4)], we do not recommend the Districts conduct this study.

## ***Juvenile Chinook Salmon Survival Study***

### Agency or Other Entity's Recommended Study

FWS requests a study to identify and characterize limiting factors that affect out migrating fall-run juvenile Chinook salmon survival (and apply to *O. mykiss*) through the lower Tuolumne River, and to downstream reaches of the San Joaquin River, the Bay-Delta, and the Pacific Ocean. Specifically FWS wants to: (1) estimate survival rates and travel time, and identify areas of mortality in seven reaches in the lower Tuolumne River; and (2) relate survival and movement behavior to habitat conditions, predation, and entrainment. FWS proposes a two-year study that would estimate survival with release of acoustically tagged and PIT-tagged hatchery Chinook salmon into the lower Tuolumne River at different experimental spring-time pulse flows or at different times during the smolt outmigration period. FWS explains that its proposed tracking study is intended to identify particular flow ranges that result in reduced predation.

### Comments

The Districts did not adopt this requested study stating that the study is not necessary because existing information is adequate. The Districts note that the Chinook salmon population model developed as part of the Don Pedro Project proceeding incorporates existing information on relative smolt survival in the lower Tuolumne River and provides an information base for evaluation of river-wide and reach-specific mortality of juvenile Chinook salmon. In addition, the Districts state that FWS did not explain why existing information is not adequate and why FWS is repeating this study it requested in the Don Pedro Project proceeding.

### Discussion and Staff Recommendation

This study is identical to the study FWS requested for the Don Pedro Project study determination proceeding, which was not adopted. The Don Pedro study determination concluded that existing information on relative smolt survival in the lower Tuolumne River provides an adequate information base for an evaluation of project effects concerning river-wide and reach-specific mortality of juvenile salmonids. Existing information also suggests that water temperature effects and predation are most likely responsible for the relatively high levels of juvenile mortality in the mining reach of the lower Tuolumne River downstream of the spawning reach [section 5.9(b)(4)].

The Don Pedro study determination addressed this smolt survival study because the storage and release of flow from the Don Pedro Project affects flow and survival of smolts in the lower Tuolumne River from La Grange gage downstream to the confluence with the San Joaquin River. However, operation of the La Grange Project has only a

localized effect on flow in the approximately 0.5-mile reach of the river from La Grange dam to La Grange gage. Therefore, we do not recommend that the Districts conduct this study.

### ***Genetics of Chinook Salmon in the Upper Tuolumne River***

#### Agency or Other Entity's Recommended Study

FWS requests a genetic study of the landlocked anadromous fish (adfluvial, self-sustaining Chinook salmon) population upstream of Don Pedro dam. FWS states that such a study would provide information on the relationship between anadromous fish populations upstream and downstream of the Don Pedro Project.

#### Comments

The Districts did not adopt this study request because they feel it is intended to determine the genetic composition of Chinook salmon in the upper Tuolumne River watershed upstream of the project. The Districts state that the genetics of Chinook salmon planted in Don Pedro reservoir is a function of the CDFW hatchery program, which is unrelated to a project effect. The Districts also say the study constitutes a research effort for determining the genetics of Chinook salmon and would not inform license requirements.

#### Discussion and Staff Recommendation

Similar requests for genetics studies of Tuolumne River *O. mykiss* and Chinook salmon during the Don Pedro Project study determination process were made to determine the genetic makeup of Chinook salmon stocked in Don Pedro reservoir, and to evaluate management options for recovery of Tuolumne River steelhead trout populations and reintroduction of salmon and steelhead into the upper Tuolumne River. While such research efforts may be needed to make fishery management and reintroduction decisions, they will not inform the development of license requirements [section 5.9(b)(5)] because the genetic composition of Chinook salmon planted in Don Pedro reservoir is a function of the CDFW hatchery program, which is unrelated to a project effect. We do not recommend that the Districts conduct this study.

### ***Water Hyacinth Study***

#### Agency or Other Entity's Recommended Study

Conservation Groups request a study of water hyacinth to determine the most effective means of controlling its spread in the lower Tuolumne River. Conservation

Groups state that such a study should: (1) document the locations and extent of water hyacinth; (2) determine the impacts of water hyacinth on native plants, fish, and other organisms, focusing on the blockage of sunlight, the depletion of dissolved oxygen, and barriers to fish migration; (3) determine the impacts of water hyacinth on recreational opportunities, such as boating, fishing and swimming; (4) investigate how the increased nutrient load from agricultural runoff might be exacerbating the proliferation of water hyacinth; (5) determine whether increasing instream flows might reduce the buildup of water hyacinth; (6) explore the potential use of chemical, biological, and mechanical controls to reduce the growth and spread of water hyacinth; and (7) consider collaborating with the California Department of Boating and Waterways and supporting the Harbors and Watercraft Revolving Fund to monitor and control water hyacinth.

### Comments

The Districts point out that the this request should be denied because: (1) Conservation Groups filed this study request over four months after the July 22, 2014 deadline for filing study requests under section 5.9(a) of the regulations; (2) it addresses impacts not related to operation of the La Grange Project; (3) water hyacinth is a management issue in Central Valley rivers related to a host of factors not related to the La Grange Project; and (4) the control of hyacinth is the responsibility of the California Department of Boating and Waterways.

### Discussion and Staff Recommendation

The La Grange Project does not affect flow in the lower Tuolumne River below the La Grange gage. The release of flow from storage in Don Pedro reservoir affects flow in the lower Tuolumne River from the La Grange gage downstream to the confluence with the San Joaquin River. The operation of the La Grange Project has only a localized effect on flow in the approximately 0.5-mile reach of the river from La Grange dam to La Grange gage. Further, the occurrence of water hyacinth in the lower Tuolumne River is well below the area of the La Grange Project's effect on flow. Therefore, no nexus exists between operation of the La Grange Project and water hyacinth in the lower Tuolumne River [section 5.9(b)(5)]. We do not recommend that the Districts conduct this study.

### ***Dennett Dam, Haul Road Bridge Remnant, and Hickman Spill***

#### Agency or Other Entity's Recommended Study

Conservation Groups request that the Districts provide additional information on Dennett dam, Hickman spill, and a haul road bridge remnant and conduct an evaluation of whether removal of one or more of these structures located within the lower Tuolumne

River basin might help mitigate the La Grange Project's cumulative effects on recreation and fish passage.

Comments

The Districts note that Conservation Groups did not address the ILP study criteria in its study request and the request concerns information regarding potential protection, mitigation, and enhancement measures.

Discussion and Staff Recommendation

As we described in scoping document 2, all three of these structures are not related to, or necessary for, operation of the La Grange Project and consequently, there is no nexus between the project and effects of these structures on the resources of the Tuolumne River [section 5.9(b)(5)]. We do not recommend that the Districts provide this additional information.

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