

**La Grange Hydroelectric Project Licensing (FERC No. 14581)
Reintroduction Assessment Framework
Plenary Group Meeting**

**Thursday, May 18, 2017
9:00 am to 12:00 pm**

Final Meeting Notes

Meeting Attendees		
No.	Name	Organization
1	Jenna Borovansky	HDR, consultant to the Districts
2	Allison Boucher	Tuolumne River Conservancy
3	David Boucher	Tuolumne River Conservancy
4	Steve Boyd	Turlock Irrigation District
5	Anna Brathwaite	Modesto Irrigation District
6	John Buckley	Central Sierra Environmental Resource Center
7	Larry Byrd	Modesto Irrigation District
8	Jean Castillo*	National Marine Fisheries Service
9	Jesse Deason	HDR, consultant to the Districts
10	John Devine	HDR, consultant to the Districts
11	Peter Drekmeier	Tuolumne River Trust
12	Dana Ferreira	Office of U.S. Congressman Jeff Denham
13	Bill Foster	National Marine Fisheries Service
14	Art Godwin	Turlock Irrigation District
15	Andy Gordus	California Department of Fish and Wildlife
16	Kelsey Gowans	Modesto Irrigation District
17	Chuck Hanson	Hanson Environmental
18	Chase Hildeburn	State Water Resources Control Board
19	Laura Johnson	HDR, consultant to the Districts
20	Jonathan Knapp*	City and County of San Francisco
21	Meg Layhee	Central Sierra Environmental Resource Center
22	Bao Le	HDR, consultant to the Districts
23	Ellen Levin*	City and County of San Francisco
24	Jim McCoy	Don Pedro Recreation Agency
25	Lonnie Moore	Private citizen
26	Gretchen Murphey	California Department of Fish and Wildlife
27	Bill Paris	Modesto Irrigation District
28	Greg Salyer	Modesto Irrigation District
29	Bill Sears*	City and County of San Francisco
30	Chris Shutes	California Sportfishing Protection Alliance
31	Josh Weimer	Turlock Irrigation District
32	Michelle Williams	Modesto Irrigation District
33	Samantha Wookey	Modesto Irrigation District
34	Ron Yoshiyama	City and County of San Francisco
35	Allan Zanker	Private citizen

* Attended by phone.

On May 18, 2017, Turlock Irrigation District and Modesto Irrigation District (collectively, the Districts) hosted the Upper Tuolumne River Fish Reintroduction Assessment Framework (Framework) Plenary Group meeting (Workshop No. 6). This document summarizes discussions during the meeting. It is not intended to be a transcript of the meeting. Attachment A to this document provides meeting materials.

Mr. John Devine (HDR, consultant to the Districts) welcomed meeting attendees and reviewed the meeting objectives. Mr. Devine said this meeting has three objectives: (1) present the final results of the Reintroduction Goals Subcommittee (Goals Subcommittee) and the Water Temperature Subcommittee (Temperature Subcommittee) to the Plenary Group; (2) review and discuss the current status of the Districts' voluntary studies; and (3) review and discuss the current status of studies being completed by the National Marine Fisheries Service (NMFS). Mr. Devine asked if there are any comments on the agenda. Ms. Dana Ferreira (Office of U.S. Congressman Jeff Denham) said she needed to leave today's meeting early and requested that NMFS provide their update first.

Mr. Bill Foster (NMFS) said prior to this meeting he emailed the Districts a status update on the NMFS studies (Attachment B). Mr. Foster said in about a month NMFS anticipates that completed "non-public" draft reports for each study will be ready for internal review. Mr. Foster said each report must first undergo internal NMFS review before it can be released to the public. Ms. Ferreira asked when will these reports be available to the public. Mr. Foster said he will let this group know well in advance when the reports may be available for public review.

Ms. Ferreira asked why NMFS is conducting a study on fish passage feasibility, given that the Districts are already completing a study on the same topic (requested by NMFS as part of the La Grange Hydroelectric Project [La Grange Project] FERC licensing process). Mr. Foster said NMFS decided to hire a consultant to collect information on fish passage feasibility. He said NMFS often will complete a fish passage feasibility study as part of a relicensing process. Mr. Foster said he only recently became involved in the La Grange Project licensing process and he believes the NMFS Fish Passage Engineering Study is meant to collect information that has not been collected before.

Ms. Ferreira asked what is the cost of the NMFS Fish Passage Engineering Study. Mr. Foster said he did not know the cost of the study offhand. He said NMFS offices across the nation draw upon one large pool of funds to complete various studies. Mr. Foster said he will talk to his supervisor and provide the cost information. Ms. Ferreira asked if money has already been allocated to the study. Mr. Foster said money has been allocated to the study and the study is underway.

Ms. Ferreira asked who was hired to conduct the NMFS Fish Passage Engineering Study. Mr. Foster said a consulting firm, Anchor QEA (Anchor), is conducting the study. Mr. Foster said the NMFS Science Center is completing the other two NMFS studies. Ms. Ferreira asked if the results of those studies will be shared with the Plenary Group. Mr. Foster said the point of doing the studies is to be able to share the data. When the internal review process is complete, the results can be shared publicly. Ms. Ferreira asked if the Plenary Group will have an opportunity to communicate with the study leads and/or review these various studies before the study reports are finalized. Mr. Foster said he is not sure if that is a possibility, but he will check and report back to the group.

Ms. Jean Castillo (NMFS) said NMFS met with the Districts on March 14, 2017 for a site visit at the La Grange Project and the Don Pedro Project as part of the NMFS Fish Passage Engineering Study. Ms. Castillo said the Districts were generous enough to take NMFS and Anchor staff around to different locations in and around the projects, including to the La Grange powerhouse area and Wards Ferry Bridge. Ms. Castillo said an engineer from HDR also attended the site visit and he and the NMFS and Anchor staff had a very collaborative discussion about different concepts for fish passage in the area. Ms. Castillo said the NMFS engineers and the Districts' engineers seem to be on the same page regarding the range of possibilities for fish passage. She believes that as a result of the site visit, and given that both studies will be taking into account the same site conditions and limiting factors, NMFS staff and HDR's fish passage engineer are on the same page. Ms. Castillo said she thinks the Plenary Group will be pleasantly surprised when the results from both studies are similar. Mr. Devine said Mr. Mike Garello (HDR), who is the study lead for the Districts' Fish Passage Facilities Alternative Assessment, attended the site visit with NMFS

and Anchor. Mr. Devine said a lot of discussion took place at the site visit, but he does not think it is accurate to say that similar concepts were agreed to or that the study results will be similar. Mr. Devine said while it is true that each evaluation will be assessing similar site conditions and limiting factors that may exist, no agreement was reached during the site visit on the concepts to be evaluated or the results of HDR's fish passage feasibility evaluations.

Dr. Chuck Hanson (Hanson Environmental, consultant to the Districts) said he recently had a discussion with Mr. Steve Edmondson (NMFS) about the NMFS Fish Passage Engineering Study. During this discussion, Mr. Edmondson said NMFS was planning to prepare a generic guidance document related to fish passage. Dr. Hanson asked if NMFS could clarify as to whether they will be preparing two fish passage engineering documents: one that is specific to the Tuolumne River and one that is generic. Mr. Foster said the NMFS Fish Passage Engineering Study will look into the conceptual feasibility of moving fish and reintroducing them above the Don Pedro Project. Mr. Foster said NMFS previously prepared a "frequently asked questions" document related to fish passage, but that document was prepared separately from this licensing process. Dr. Hanson asked if the scope of the NMFS fish passage feasibility study will include cost estimates for different fish passage concepts. Mr. Foster said he does not know the details of the study scope and he has not seen an outline for the report.

Ms. Ferreira asked if the study report will include design concepts for upstream and downstream passage. Mr. Foster said the purpose of the study is to come up with feasible options, but he does not know to what level of engineering design the concepts will be completed. Ms. Castillo said the study is a general feasibility study and will not go into design details such as the amount of concrete or rebar needed. Ms. Castillo said Anchor is currently waiting on the NMFS Science Center to complete the Estimation of Steelhead and Spring-Run Chinook Salmon Habitat Capacity in the Upper Tuolumne and Upper Merced Rivers Study (Habitat and Carrying Capacity Study), which will include the numbers needed to estimate the project footprint. Anchor is estimating these numbers themselves, but will use the numbers from the NMFS Science Center study to fine-tune and extrapolate the estimates. Mr. Foster said that for the Merced River, NMFS prepared a concept-level fish passage feasibility report for possible passage at each of the dams, and he is expecting that the report for the Tuolumne River will be similar in scope.

Mr. John Buckley (Central Sierra Environmental Resource Center [CSERC]) asked if NMFS can provide a timeframe for when the public will be able to review results from the NMFS studies. Mr. Foster said he does not have a schedule, but once the draft reports are complete, he anticipates NMFS will have a better idea of the schedule for making the reports public. Mr. Foster said at this time, no draft reports have been completed. Ms. Castillo said NMFS is hoping that by the end of June, draft reports for each of the three studies will be ready for internal review. Ms. Castillo said NMFS will try to expedite the internal review process as much as possible and that hopefully in July, NMFS will be able to share results with this group. Ms. Castillo said Anchor is aiming to have a draft report complete by the end of June, but completing that report is dependent on completion of the NMFS Science Center Habitat and Carrying Capacity Study. If that study's draft report is not completed by the end of June, then the Anchor study draft report schedule will extend into July.

Dr. Hanson asked if the NMFS Habitat and Carrying Capacity Study is following a standard protocol or study plan that outlines the habitat criteria to be used or provides details on the study approach. Mr. Foster said the report will likely include information on the study methods, depending on the scope of the contract with the study leads. Mr. Foster said he is unaware of the details of the study and particular standards the study may be following. Dr. Hanson said the reason he asked is that later in this meeting, we will be discussing seasonality and temperature considerations, and the results of the study may be able to inform this process.

Ms. Ferreira asked if the reports are released publicly and if there is disagreement with the study results, is there an appeal process? Mr. Foster said once NMFS releases reports to the public, there is a usually a comment period or a separate independent peer review. However, this process varies from report to report depending on the type of document being released and the budget. Mr. Foster said NMFS is always interested in receiving comments from the public and he will check to see if there will be a public review and comment period for the NMFS studies. Mr. Foster said he is hopeful the study results are helpful to this licensing process and therefore the results of the NMFS studies would be provided to the Plenary Group.

Mr. Devine said when the Districts went through the study planning process for both the FERC-approved and the voluntary studies, draft study plans were prepared that included details on the scope of work (including methodology), cost and schedule. These draft study plans were released for participant review and comment and in general, final study plans integrated these comments where appropriate, or explained why they were not incorporated. Mr. Devine asked if scopes, costs and/or study plans for each of the NMFS studies could be shared with the Plenary Group. Mr. Foster said although he has not seen any study plans, he thinks they likely exist. Mr. Foster said he will find out if scopes, costs and/or study plans exist and if they can be shared with the Plenary Group. Mr. Foster said details about the study methods will probably be included in each report. Dr. Hanson said reports for studies similar to the NMFS Habitat and Carrying Capacity Study usually include one or more appendices that specify the information the study relied upon and the accompanying analyses. Dr. Hanson asked if Mr. Foster anticipates that the NMFS Habitat and Carrying Capacity study report will include similar appendices. Mr. Foster agreed that study reports often include that type of information. Dr. Hanson said having those types of appendices would be very helpful during the public review process.

Ms. Ferreira asked if NMFS will be completing a temperature study for the Tuolumne Study and, if so, what is the schedule for the study report. Mr. Foster said he is only aware of the Fish Passage Engineering Study, Habitat and Carrying Capacity Study, and the *O. mykiss* Genetics Study. Mr. Foster said NMFS has installed temperature loggers that are collecting information and could be used in the future. Mr. Devine said that prior to Mr. Foster's time on the project, Mr. John Wooster (NMFS) provided the Boughton et al. (2015) paper as an indication of how NMFS would likely treat temperature considerations for fish restorations. Mr. Devine said Boughton et al. (2015) is a temperature study done on the Santa Ynez River, and Mr. Wooster said a similar approach would be applied to the Tuolumne River to support estimates of carrying capacity. Mr. Devine asked if that temperature study is still ongoing and if study results will be released to the public. Mr. Foster said he will have to check on that. Mr. Foster said he has read meeting notes from some of the past meetings related to the Framework and Mr. Wooster may have been intending just to share some references that may be relevant, such as the report on the Russian River. Mr. Foster said he did not know of a separate temperature study, but he will find out. Mr. Devine said he thinks Mr. Wooster had mentioned a specific individual, perhaps Dr. Flora Cordoleani, who was developing a separate study related to a spring-run Chinook life cycle model that would be applicable to the Tuolumne River. Mr. Foster said he will find out. Mr. Foster noted that Mr. Wooster had a lot more connection to the NMFS Science Center than he does.

Ms. Ferreira asked where the spring-run Chinook for the Tuolumne restoration will come from. Mr. Foster said information on that topic may be part of the NMFS Fish Passage Engineering Study. Mr. Foster said source stock is usually determined over the course of planning the reintroduction and there are different schools of thought about what stocks should be used to comprise a source population. Mr. Foster said the spring-run Chinook source population may be comprised of spring-run Chinook or, if spring-run Chinook is unavailable, fall-run Chinook. Mr. Foster said determining the source population is a very important part of a fish passage program and is often the subject of a separate study. Mr. Bao Le (HDR) asked if discussions are currently underway at NMFS to determine the source population for spring-run Chinook. Mr. Foster said the NMFS Recovery Plan discusses the topic of developing a source population.

Dr. Hanson said in the San Joaquin reintroduction process, participants had a series of conversations very early in the process about broodstock selection and the number of fish that needed to be reintroduced. Dr. Hanson said it was important that these discussions were held early in the process because the results of those discussions resulted in a change of restoration strategy. Originally, the participants intended to use spring-run Chinook from several different sources (wild fish from Butte, Battle, Mill and Deer creeks and the Feather River Hatchery) and let the environmental conditions in the San Joaquin sort out which broodstock was best. Dr. Hanson said this approach was met with pushback from stakeholders who did not want wild fish from other rivers used as broodstock elsewhere. Dr. Hanson said ultimately, only fish from the Feather River Hatchery were used as broodstock. Dr. Hanson reiterated that giving some thought to broodstock early in the process is critical. Mr. Foster said he agreed with Dr. Hanson and that once a fish passage program is designed, part of the implementation process is developing information such as source of broodstock and adapting the approach and original assumptions as the implementation progresses. Ms. Ferreira asked if adapting a fish passage program once implementation has begun will result in additional program costs. Mr. Foster said it is important that a fish passage program be cost-effective, but he does not know what that cost would be to make changes once implementation has begun. Ms. Ferreira said she is concerned that costs may escalate quickly if a fish passage program is designed and implemented without knowing first what the source population may be or if there is even an appropriate source population to use. Mr. Foster said cost is factored into that decision because cost-effectiveness is an important factor, but cost is not the only factor that must be considered.

Mr. Devine said one of the goals of today's meeting is to report the findings of the Goals Subcommittee and the Temperature Subcommittee to the Plenary Group. Both Subcommittees were formed to help the Plenary Group. Many individuals from the Plenary Group volunteered their time to participate in one or both of the Subcommittees. Both Subcommittees now have final results to report to this Plenary Group.

Mr. Devine said the Goals Subcommittee was formed in January 2016. The Goals Subcommittee has had five meetings and each meeting was well attended. At these meetings, the Goals Subcommittee worked on developing a statement to define the goal of the reintroduction program for the Tuolumne River. At the December 1, 2016, Goals Subcommittee meeting, attendees reviewed a draft Goal Statement that was previously drafted and circulated by the Districts. Attendees discussed revisions to the statement as well as the use of corollary statements or objectives to provide detail about or clarify the Goal Statement. The Districts revised the Goal Statement per discussions at the December 1 meeting and circulated a new draft for review, asking that Goals Subcommittee members provide feedback on the statement as well as corollary statements. The only feedback received was from Mr. Buckley, who said he thought the language "*fair and reasonable*" is subjective and hard to define. The idea of providing corollary statements to attach to the Goal Statement was discussed and agreed to. The Districts also prepared a response to Mr. Buckley's comment and this response was circulated to the Goals Subcommittee, as was a request to provide any corollary statements to be added to the primary Goal Statement. No feedback or corollary statements were received. The final Goal Statement, without corollary statements, was forwarded to the Plenary Group prior to today's meeting (Attachment A). Mr. Devine thanked the members of the Goals Subcommittee for their participation and asked the Plenary Group to provide feedback on the Goal Statement.

Mr. Peter Drekmeier (Tuolumne River Trust) asked if the Goals Subcommittee had discussed the fall-run Chinook salmon doubling goal. Mr. Devine said he did not remember any specific discussion of the doubling goal. Mr. Devine said the doubling goal applies only to fall-run Chinook and this Framework process is focused on steelhead and spring-run Chinook. Mr. Le said the Goal Statement was focused on defining "*recovery of ESA listed salmonids*" and that fall-run Chinook do not meet this criterion. Mr. Buckley said he thinks the final Goal Statement is broad and lacks clarity. Mr. Buckley said reintroduction is clearly a controversial topic and it is unlikely there will be broad agreement. Mr. Buckley asked if the Districts think it is sufficient to have a broad statement that everyone can live with or if there is value in having a statement with more specificity. Mr. Devine said the Goal Statement is meant to be a general

statement. Mr. Devine said his sense is that the Goals Subcommittee members think it is okay to have a general statement and that it is also fine for individuals to have different interpretations of the statement. Mr. Devine added that individuals are welcome to share any disagreement with the statement and those opinions will be documented in the record.

Mr. Chris Shutes (California Sportfishing Protection Alliance) said he thinks it will be easier to add corollary or objective statements once the results from the voluntary studies are available. Mr. Shutes said having data on the character and capacity of the habitat will make it easier to draft numeric objectives and specific actions or activities and have a more informed discussion. Mr. Le reminded the Plenary Group that the purpose of the Goals Subcommittee was to develop a reintroduction Goal Statement in parallel with, but independent of, the studies and their results so that the Goal Statement would not be biased by the study results. This approach would ensure that the Framework's primary objective, which is to objectively assess the feasibility of reintroduction in the Tuolumne River, would be met. Mr. Devine said the Goal Statement reflects a variety of interests and the intent of the Framework process has always been to first develop a Goal Statement and then to review the results of the studies within the context of those goals. Mr. Devine asked if there are any other comments on the Goal Statement. There were none.

Ms. Ferreira said the Goals Subcommittee has spent many hours discussing the statement and part of those discussions were about how individuals may have different perspectives on the phrase "*fair and reasonable cost.*" Mr. Devine said part of the interest in developing corollary statements was to provide clarity on different phrases in the Goal Statement. Mr. Devine said that since no subcommittee participants submitted corollary statements, the part of the Goal Statement about corollary statements can be removed. Mr. Devine asked if everyone is okay with removing the sentence about corollary statements. Mr. Lonnie Moore (private citizen) said corollary statements could be added later as they become important to the Goal Statement and that removing the language that introduces the corollaries would seem to shut down the possibility of adding corollaries in the future. Mr. Shutes agreed corollary statements could be added at a later time. Mr. Devine said one objective of the Goals Subcommittee was to develop these corollary statements. Over the course of several Goals Subcommittee meetings, the Districts requested feedback and input to support corollary statement development. No corollary statements came out of those activities or were provided by any subcommittee participant. The Goals Subcommittee has now reported its results to the Plenary Group. Mr. Devine said he considers the work of the Goals Subcommittee to be complete.

Mr. Moore said he thinks it is important that members of the Plenary Group be able to add corollary statements in the future. Mr. Devine stated that this collaborative process is informal and the Plenary Group is welcome to do that in the future. Ms. Ferreira said she thinks enough time has already been spent discussing the Goal Statement and corollary statements and she suggests that the group vote on not allowing corollary statements to be added in the future. Meeting attendees discussed how the informal Framework process allows for all opinions to be documented in the meeting notes.

Meeting attendees agreed to remove the last part of the Goal Statement about corollary statements and to accept that the remaining language is the final Goal Statement. No meeting attendees were opposed.

Meeting attendees took a 10-minute break.

Mr. Devine said the goal of the Temperature Subcommittee was to develop general temperature indices or guidelines for assessing reintroduction with regards to thermal suitability. The Temperature Subcommittee first met on April 13, 2016 and has had a series of conference calls and meetings, led primarily by Mr. Paul Bratovich (HDR). Over that period of time, the Temperature Subcommittee produced a literature review (using Water Temperature Considerations for the Yuba River Basin – Anadromous Salmonid Reintroduction Evaluations (Bratovich et al. 2012) as a starting point) to help inform the development of potentially suitable temperatures for reintroduction. The subject of thermal suitability includes various

terms such as *upper optimal*, *upper tolerable*, *lethal*, etc. and part of the Temperature Subcommittee's work included reviewing the definition of each term to ensure the clarity of each term. On November 29, 2016, the Districts circulated to subcommittee members a blank Water Temperature Index (WTI) table, the goal of which was to generate discussion on recommended values for each of the thermal indices. No feedback was received from any member so the Districts recirculated the table on January 24, 2017. Mr. Shutes provided comments on the spring-run Chinook lifestage periodicity table. Other than Mr. Shutes' feedback, no other comments were received. In the absence of other feedback, the Districts populated the table based on information collected from the literature review, much of which came from the Yuba Salmon Forum. Mr. Devine said the Districts circulated the table with the suggested temperature indices to the Temperature Subcommittee for review and no further feedback was received. Mr. Devine said today the Temperature Subcommittee is presenting this table of final WTIs to the Plenary Group for acceptance.

Mr. Devine reviewed the table's content and what the shading represents. The dark gray boxes indicate periods of time when, based on the cited literature, there is peak activity during that life stage. The light gray indicates shoulder periods where, based on the information available, presence exists but peak activity is not expected.

Mr. Drekmeier said the table is helpful and recommended adding a key or legend to indicate what the shading represents. He added that it was interesting that some lifestages, such as rearing, do not have any periods of peak activity. Mr. Shutes agreed that adding a key would be helpful. Mr. Le said much of the table was populated using information from the Yuba Salmon Forum. Given that neither spring-run Chinook nor steelhead currently exist in the upper Tuolumne River, fish periodicities largely originated from information provided in the NMFS Recovery Plan and the Districts' Salmonid Population Information Integration and Synthesis Study Report (W&AR-05 from the Don Pedro Hydroelectric Project). The Districts' technical team provided additional refinements to periodicities based upon site-specific data, information from nearby watersheds, and professional judgment.

Ms. Alison Boucher (Tuolumne River Conservancy) said it might be necessary to use a third color in the WTI table, in addition to the dark gray and light gray. Juvenile rearing for steelhead is an example of a lifestage that could use a third color. This lifestage has light gray boxes throughout the year, and it could be that there is a time of peak activity that is missing from this table. Mr. Le said the duration and timing of the lifestage, and when peak activity occurs, is based on, and limited by, the information available. For example, the literature on fry rearing for steelhead states that this lifestage occurs from February through mid-July. There is currently no information in the literature indicating relatively greater fry rearing activity occurring at any time during that time frame to justify adding dark gray shading (peak period). As such, the information indicates only that fry rearing exists from February through mid-July. The white boxes indicate the period of time when, based on the literature, no fry rearing is observed. Ms. Boucher said she proposes that the entire period for steelhead fry rearing be changed to dark gray because if there is no specific time of peak activity it means that the all the months within the period are of equal importance. Ms. Boucher said she is concerned that when it comes to managing flows on the river, often the last few weeks of a lifestage period are removed from temperature management. Ms. Boucher said based on the table, there is nothing to differentiate an actual shoulder period from a period when peak activity may occur.

Mr. Buckley suggested that Ms. Boucher's concerns could be addressed by adding an asterisk to all lifestages that have only light gray boxes. Mr. Shutes agreed and said an asterisk could be added for each lifestage depending on whether or not a period of peak activity can be identified in the literature. Mr. Devine agreed it would be helpful to add footnotes. Mr. Devine said that for any lifestages that are all light gray, he would be hesitant to change them to all dark gray because there is no data available to suggest that each month in the period is a peak period. Mr. Devine said asterisks would be added and Ms. Boucher said that would be sufficient to address her concerns.

Mr. Larry Byrd (Modesto Irrigation District) asked if the data in the table is based on studies. Mr. Le said in developing the lifestage periodicities, the technical team first reviewed the NMFS Recovery Plan and the Districts' Salmonid Population Information Integration and Synthesis Study Report. The periodicities developed from this base of information were refined based on site-specific information available for the Tuolumne River and other nearby watersheds. Mr. Byrd said it makes sense that the table would use data from other rivers, given that steelhead do not exist in the Tuolumne River.

Mr. Foster suggested adding the definition of MWAT somewhere in the table. Mr. Devine said MWAT is defined in the literature review and the Districts will add that definition to the table.

The Plenary Group voted to adopt the WTI table and the literature review. No individuals were opposed to adopting these two documents.

Ms. Jenna Borovansky (HDR) presented an overview of the Regulatory Context for Potential Anadromous Salmonid Reintroduction into the Upper Tuolumne River Basin Study (Regulatory Study) including the goals and objectives, methods, and study status.

Mr. Foster asked if the study report will note which management plans are considered comprehensive plans under the Federal Power Act. Ms. Borovansky said the list of management plans compiled for the study does not currently include whether or not the plan is on FERC's list of comprehensive plans, but it would be a good idea to include this information.

Mr. Buckley asked if the study report will just be a list of potentially applicable plans or if the study report will state which plans are a barrier to reintroduction. Mr. Buckley said if the study report will include a description of which plans are a barrier to reintroduction, it would be helpful if the study report could be issued soon so that licensing participants can provide feedback on what some of the plans are aiming to accomplish. Ms. Borovansky said the study report is intended only to identify which plans, based on such factors as the plan's goals and objectives and geographic area, may be relevant for consideration in implementing a reintroduction program. Which plans may act as hurdles for a reintroduction program is somewhat speculative given that the details of a fish passage action are unknown at this time. Ms. Borovansky said once the report is released, licensing participants will have an opportunity to provide comments on particular facets of a plan or plans that may have been missed.

Ms. Gretchen Murphey (California Department of Fish and Wildlife) asked when the Districts expect to release a draft report. Ms. Borovansky said work on the report is underway and the Districts are aiming to have a draft report finished in time to include it in the La Grange Project Final License Application (FLA), which will be filed with FERC in September. Ms. Borovansky said feedback on specific plans is welcome now, so that it may be incorporated into the study report.

Ms. Borovansky presented an overview of the Socioeconomic Scoping Study including the goals and objectives, methods, and study status. Ms. Borovansky said similar to the Regulatory Study, the Districts are aiming to complete a draft study report in time to include it in the FLA.

Mr. Foster said a FERC report from 1995 noted that projects on the Tuolumne River have the potential to have cumulative effects on the Delta. Mr. Foster noted that the scope of the Socioeconomic Scoping Study extends only to the lower Tuolumne River. Mr. Foster said given the amount of data that would need to be processed and analyzed if the scope extended to the Delta, he understood why the scope only extended to the lower Tuolumne River. Ms. Borovansky said when the Districts initially proposed the study, the study scope only included the upper Tuolumne River. Based on feedback from licensing participants, the scope was extended to the lower Tuolumne River. Ms. Borovansky said Mr. Foster's point about the extent of cumulative effects is a good one. Mr. Foster said for ESA consulting purposes, the scope may extend

beyond the Tuolumne River. Mr. Devine said FERC defined the scope of cumulative effects in the scoping documents for both the Don Pedro Project and the La Grange Project, and the scope of cumulative effects extends beyond the Tuolumne River.

Mr. Lonnie Moore (public citizen) asked if the Socioeconomic Scoping Study is on hold until there is an actual proposal for fish passage. Mr. Devine said the study is meant to provide background information on what socioeconomic resources could be benefitted or adversely affected by a reintroduction program. Mr. Devine said the purpose of conducting the study was to collect information that would help inform this collaborative process. Mr. Le said the study is meant only to scope or catalogue what socioeconomic resources might be relevant, and not to describe how those resources may be affected.

Mr. Le gave a status update on the five voluntary studies not covered by Ms. Borovansky. Mr. Le said that study reports for these studies are on the same schedule as the Regulatory Study and the Socioeconomic Scoping Study (drafts by September 2017). Mr. Le said the SED review and response process pulled much of the technical team away from the study work for six months and only recently were they able to reengage in the studies and begin working on them again.

Mr. Le presented an overview of the Upper Tuolumne River Chinook Salmon and Steelhead Spawning Gravel Mapping Study including the goals and objectives, methods, and study status.

Mr. Buckley said the current high flows in the river have likely reshaped many of the river segments that were documented in the study. Mr. Buckley asked if there is a way to include these recent flow conditions in this study. Mr. Le said given that the fieldwork was completed in 2016, it is unknown what impacts the recent high flow conditions may be having in the study area. Mr. Le said there are no plans to perform additional fieldwork. However, Mr. Le noted that even though there has been a lot of precipitation, he did not know how this precipitation translated into high flows in the study area given that flows in the study area are managed. Furthermore, Mr. Le noted that the initial desktop mapping of spawning gravels used 2007 imagery and that the field review completed in 2016 noted that there were no major differences in spawning gravel distribution between these two periods of time. Mr. Devine noted that 2011 was also a very wet year.

Ms. Boucher noted the presentation refers to *steelhead* and asked if the study makes a distinction between steelhead and resident *O. mykiss*. Mr. Le said that all the voluntary studies make a distinction between steelhead and resident *O. mykiss* and in all the studies, steelhead are referenced. Ms. Boucher asked if a footnote could be added to the presentation to clarify this. Mr. Le said a footnote will be added.

Mr. Le presented an overview of the Upper Tuolumne River Habitat Mapping Assessment including the goals and objectives, methods, and study status. There were no questions or comments.

Mr. Le presented an overview of the Upper Tuolumne River Macroinvertebrate Assessment including the goals and objectives, methods, and study status. Ms. Meg Layhee (CSERC) asked if each site was sampled once. Mr. Le confirmed that each site was sampled once. Mr. Shutes asked how many sites were sampled. Mr. Le said seven sites were sampled.

Mr. Le presented an overview of the Upper Tuolumne River Basin Water Temperature Monitoring and Modeling Study including the goals and objectives, methods, and study status. Mr. Drekmeier asked if the study team was coordinating with Mr. Bill Sears (City and County of San Francisco) regarding releases from O'Shaughnessy Dam. Mr. Drekmeier said he and others have been working on a draft management plan for the reach and he suggested that the Districts get in touch with Mr. Sears to get a copy of this document. Mr. Drekmeier noted that the management plan includes changes to the current flow regime, which may result in impacts to temperatures in the reach. Mr. Le said the scope of the study is to evaluate

current flow conditions, though he is interested to review the plan and will follow up with Mr. Sears to get a copy. [Note: Following the meeting, Mr. Dreke said given that the scope of the study only includes current conditions, it was unnecessary for the study leads to review the draft management plan.]

Mr. Le presented an overview of the Upper Tuolumne River Instream Flow Study including the goals and objectives, methods, and study status. Mr. Shutes asked what flows occurred during the fieldwork and how different flows may have impacted the fieldwork. Mr. Le said different flows were needed in order to calibrate the model. The flows ranged from about 200 cfs or so to peaking flows of over 1,000 cfs.

Mr. Devine thanked everyone for attending the meeting and thanked the Temperature Subcommittee and Goals Subcommittee members for their participation. Mr. Devine thanked NMFS for providing an update on their studies.

Meeting adjourned.

Action Items

1. Mr. Foster will keep the Plenary Group informed of the schedule for public release of the NMFS study reports.
2. Mr. Foster will find out the cost of the NMFS Fish Passage Engineering Study.
3. Mr. Foster will check to see if there will be a public review and comment period for the NMFS studies.
4. Mr. Foster will find out if scopes, costs, and/or study plans exist for the NMFS studies and if they can be shared with the Plenary Group.
5. Mr. Foster said he will find out if the NMFS Science Center is completing a temperature study of the Tuolumne River, (e.g., similar to Boughton et al. [2015]).
6. The Districts will revise the WTI table to add the definition of MWAT and to clarify what the light gray and dark gray boxes indicate. (complete) (Note: See Attachment C to for the updated version of the WTI table.)
7. The Districts will ensure that the Regulatory Study Report indicates which management plans are on FERC's list of comprehensive plans.
8. The Districts will add a footnote to the Upper Tuolumne River Chinook Salmon and Steelhead Spawning Gravel Mapping Study PowerPoint presentation cover slide to indicate that *steelhead* refers only to steelhead, and not resident *O. mykiss*. (complete) (Note: See Attachment C for the updated version of this PowerPoint.)