United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Southwest Region
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In Reply Refer to:
FWS/R8

OCT 0 1 2018

Ms. Kimberly Bose
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20426

Subject: Don Pedro Hydroelectric Project, P-2299
La Grange Hydroelectric Project, P-14581

Dear Ms. Bose:

The U.S. Fish and Wildlife Service ("Service"), an agency within the U.S. Department of the Interior ("USDOI"), has been engaged in ongoing discussions with the Turlock Irrigation District, Modesto Irrigation District (collectively "License Applicants") and City and County of San Francisco (CCSF) in regards to the Amended Final License Application ("AFLA") for the Don Pedro Hydroelectric Project ("Don Pedro") and the Final License Application ("FLA) for the La Grange Hydroelectric Project ("La Grange")(collectively "Projects") filed by the License Applicants with the Federal Energy Regulatory Commission ("FERC") on October 11, 2017.

On November 30, 2017, FERC issued the Ready for Environmental Analysis ("REA") notices which invited interested parties to file within 60 days comments and recommended terms and conditions for the Projects based upon the License Applicants' applications. On January 29, 2018, interested parties filed comments and recommended terms and conditions for the Projects, including the USDOI, which incorporated comments and recommended conditions pursuant to Section 10(j) of the Federal Power Act from the Service in the USDOI submissions (USDOI Response Letters) for Don Pedro and La Grange. On February 16, 2018, FERC issued to the Districts a request for additional information requesting the License Applicants to model the proposals included in the Comment letters provided by USDOI and others. On March 15, 2018, the Districts filed their response to the comments submitted and recommended terms and conditions. On May 14, 2018, the Districts filed their additional information with FERC responding to the information request.

Shortly after the USDOI Response Letters were filed, License Applicants reached out to the Service and USDOI to talk about the contents of the USDOI Response Letters. We opened a dialogue to determine if there were areas of common ground where we could reach agreement with the License Applicants and potentially provide revised recommendations to FERC.

As a result of the ongoing discussion, we sought a stay of the license proceeding from FERC to allow for conversations to continue.

The US Department of Commerce, National Marine Fisheries Service and the Service filed a Motion with FERC to stay the proceedings on June 14, 2018. On June 27, 2018, FERC notified the parties of a change to the schedule for the Draft Environmental Impact Statement, which has allowed the Service time to pursue further discussions with the License Applicants.

We appreciate FERC providing additional time regarding the licensing proceeding, and in particular, for a delay in issuance of the Draft Environmental Impact Statement. We have used the additional time for face-to-face meetings to describe and understand the Service's and License Applicants' different approaches to conservation and future management of the Tuolumne River. These discussions have been very helpful to create meaningful dialogue between the Service and License Applicants about opportunities and constraints in providing water for multiple uses and to create consensus around the importance of habitat restoration in the lower Tuolumne River.

Based on these discussions, we are providing FERC with this supplement to the January 29, 2018 USDOI Response Letters to FERC's REA. This supplement replaces in their entirety the Service's original Section 10(j) Condition Numbers 2, 3, 4 and 7 in the USDOI Response Letter for Don Pedro and withdraws in their entirety the Service's original Section 10(j) Condition Numbers 2, 3, 4, and 7 in the USDOI Response Letter for La Grange[1]. We are submitting revised Section 10(j) conditions for Don Pedro. These Revised Section 10(j) conditions for Don Pedro are labeled Revised Section 10(j) Condition 2, Revised Section 10(j) Condition 3 and Revised Section 10(j) Condition 4, and are included in Section IV of this letter. The Service is not submitting revised Section 10(j) conditions for La Grange. Section 10(j) conditions not addressed in this filing remain as submitted in the USDOI's January 29, 2018, Response Letters.

I. Service and License Applicants Discussions

The Pacific Southwest Regional Office of the Service has been meeting regularly with the License Applicants since April to work through the differences in our proposals regarding habitat restoration and flows on the Tuolumne River associated with the licensing process. The additional time provided by FERC has created space for meaningful discussion about restoration concepts on the Tuolumne River.

The modeling work produced by the License Applicants for FERC served to facilitate discussions between the Service and the License Applicants. We were able to review these analyses, and dig into the basic assumptions behind the proposals. Doing so has allowed us to be able to articulate the differences in approaches used and benefits derived from the proposals,

[1] The Service's original Section 10(j) Conditions 3, 4, and 7 in the USDOI Response Letter for La Grange are substantially similar to the same-numbered original conditions filed by the Service in the Don Pedro proceeding. Likewise, the proposed flows recommended in original Section 10 (j) condition 2 in the La Grange proceeding are lesser than or equal to the flows recommended by the Service in the Don Pedro proceeding in all months for all water year types.

while focusing on some key aspects of agreement, like the importance of long-term restoration in the Tuolumne River and the necessity of funding to accomplish that goal.

A. Initial Proposals

The following sections summarize the Service's general understanding and background related to the Service and License Applicants (i.e. AFLA) initial proposals. Areas of potentially significant difference are further discussed in each section, but these summaries are intentionally not fully inclusive of either of the initial proposals.

1. Service Proposal

The approach the Service used to develop its original Section 10(j) conditions relied on flow (original Section 10(j) Conditions 2 and 7), implementation of specific restoration and enhancement measures that included addition of areas of regular floodplain inundation (original Section 10(j) Condition 3), planting of riparian vegetation (original Section 10(j) Condition 3), installation of large woody material (LWM) (original Section 10(j) Condition 3), and placement of coarse gravel to restore and enhance functioning juvenile Chinook salmon and steelhead (salmonid) rearing habitat in the lower Tuolumne River from La Grange Dam downstream to the confluence with the San Joaquin River (original Section 10(j) Condition 4). The modeling done by the License Applicants demonstrates that the Service's proposal could achieve increased production, albeit at a higher flow volume than included in the AFLA.

a. Floodplain Restoration

The Service recommendations included a suite of actions targeted at restoring and enhancing floodplain in the lower Tuolumne River. The importance of California Central Valley floodplain habitats as productive foraging areas and predator refuge for rearing juvenile salmon, compared to main river channels, has been well documented (Grosholz and Gallo, 2006; Jeffres et al., 2008; Bellmore et al., 2013). Inundated floodplains can enhance juvenile salmonid growth and survival because water temperatures, prey biomass, and velocities are more favorable compared to main channel habitat (Kjelson et al., 1981; Ahearn et al., 2006). Juveniles that spend more time rearing in off-channel habitats and enter the ocean environment at a larger body size may have increased survivorship (Sommer et al. 2001; Satterthwaite and Carlson 2015). The actions described in the Service's initial recommendations included determining appropriate amounts of habitat that should be restored to benefit juvenile salmonids based on the sites for floodplain restoration and providing for a specific number of acre-days of available inundated floodplain habitat from February to June. These acre-days were determined based on modeling calculated using daily flow data which is obtained from the Operations Model output as well as the License Applicants' floodplain inundation report. Additionally, the Service proposed general metrics for where and how the habitat should be restored to provide high-quality habitat for juvenile salmonids, which included surface lowering and riparian plantings in the areas to be restored.

The Service's habitat restoration proposal also included placement of a specific number of pieces of LWM to be placed in the river and floodplain to create habitat for rearing juvenile salmonids and replenishment of that LWM at regular intervals to replace LWM that is blocked from

reaching the lower river by the Projects. The addition of LWM is expected to enhance aquatic habitat by increasing habitat heterogeneity, providing velocity refuges for juvenile salmonids, enhancing macroinvertebrate substrata, adding structural complexity to the channel by modifying local hydraulics and sediment transport, and providing bank protection (i.e. Roni et. al. 2014; Ruediger and Ward, 1996; Abbe and Montgomery, 1996; Dolloff 1983; Bryant et al. 2005). The addition of LWM, located in areas that are inundated at minimum instream flows, would provide habitat during critically dry water years, when floodplain inundation is not expected to occur.

b. Coarse Gravel Augmentation

The Service included a recommendation to FERC for gravel augmentation. Our recommendation is based on an amount of gravel that would provide 1:1 replacement of coarse sediment withheld by New Don Pedro Dam over the course of the license term. The Service recommended placement of gravel such that the holes created by gravel mining get filled-in first (coarse material overlain with spawning gravel). To achieve the 1:1 replacement the Service used the 2004 Coarse Sediment Management Plan developed for the Tuolumne River Technical Advisory Committee (McBain and Trush 2004) that estimated an average of 18,800 cubic yards per year of coarse sediment retention.

2. AFLA Proposal

The License Applicants' AFLA proposal relies on flow volumes that are lower in most cases than the Service's original flow proposal (original Section 10(j) Condition 2), increased predation control, spawning and rearing habitat improvements, building and operating a restoration hatchery and reduction in redd superimposition at target escapement levels. Some of these concepts are described further below.

Based on the discussions to date between the Service and License Applicants, it is understood that implementation of the restoration hatchery for fall-run Chinook salmon was not included in the modeling results presented by License Applicants. Therefore, that specific element of the AFLA was not considered in any further assessment of refining recommendations by the Service.

a. Predation

The AFLA proposes construction of a barrier weir where fish counting and separation would occur. Additionally, under the AFLA the License Applicants would implement a long-term predator control and suppression strategy using incentives and other measures to target and reduce black and striped bass populations.

The License Applicants indicated these actions are targeted to annually reduce mortality rates for rearing and migrating salmonid fry and parr by 20% above Charles Road (RM 24.9) and by 10% below Charles Road compared to estimated current levels. This reduction in predation is included in the License Applicants' Chinook salmon and steelhead population models. The Service's proposal did not include any direct predation management as a strategy for reducing juvenile salmonid mortality in the Tuolumne River. Rather, the Service anticipated that that the flow and habitat restoration proposals included in the Service's original Section 10(j) conditions

would make in-river conditions less favorable for non-native predators while increasing suitability for juvenile salmonids.

b. Habitat

The License Applicants took an approach primarily focused on maintaining and improving spawning and rearing habitat in the upper 13 miles of river immediately downstream of La Grange Dam and placing boulders to improve structural complexity in in-stream habitat for juvenile salmonids in up to eight miles of river in the upper portion of the lower river between the Projects and the barrier weir.

Additionally, the License Applicants proposed to improve gravel quality and suitable spawning habitat in the upper river. Cleaning gravels in the spring as proposed would increase turbidity to the River and potentially reduce predation pressure on outmigrating juvenile salmonids. The Service understands that increased egg-to-emergence survival rates of juvenile salmonids as a result of gravel cleaning were included in the License Applicants' population modeling results.

c. In-Stream Flows and Outmigration

The License Applicants' proposal places emphases on increasing survival of juvenile salmonids in the upper 25 miles of the lower river and therefore the AFLA is based on optimizing in-channel habitat in order to maintain juvenile salmonids in this portion of the river, upstream of the proposed barrier weir. Under the AFLA proposal, flows in the late winter and early spring are intended to maximize in-channel fry and juvenile rearing in the river above the weir. Once juvenile salmonids are of sufficient size for outmigration (i.e. smolt-sized), the License Applicants' proposal would provide for pulse flows to encourage smolt-sized juveniles to outmigrate from the upper river to the San Joaquin River, quickly passing the lower part of the lower Tuolumne River where habitat conditions are less suitable for longer-term survival.

II. Summary of Understanding from Discussions

Based on the discussions and additional review of the initial proposals described in the preceding section, the Service has developed the following general understanding on the individual subjects that follow.

A. Flow Volumes and Management

The License Applicants provided an assessment of instream flow releases in water years 1971-2012 comparing Base Case (the current FERC-required flow) and AFLA release volumes in the Tuolumne River. This assessment indicates that total flows released to the river, as well as the proposed AFLA releases are higher than the currently required minimum during the late winter and spring of the preponderance of years (57%) when compared to Base Case conditions. Furthermore, AFLA proposed spring pulse flows are significantly higher than the current license conditions. Model results also show that in many years, additional flow volume is available to provide either additional pulse flows to benefit outmigrating smolts and potentially optimize

juvenile floodplain rearing habitat for specific durations in the many years where the modeled resulting releases from Don Pedro exceed the required releases.

B. Habitat

The Service understands the differences in approach to supporting rearing juveniles and their subsequent outmigration from the Tuolumne River between the AFLA and Service initial proposals. The Service's experience and multiple additional studies in Central Valley watersheds has shown that access to functional floodplain habitat provides significant benefits to juvenile salmonid growth and potentially survival, which often decreases the reliance solely on flow-related actions (e.g. Sommer et al. 2001; Grosholz and Gallo, 2006; Jeffres et al., 2008; Bellmore et al., 2013; Satterthwaite and Carlson 2015). Optimizing the design, implementation and long-term success of habitat improvements will require a thorough understanding of in-stream flows and continued assessment and active management through time. Through our collective discussions, the Service believes that an approach that allows long-term, strategic habitat improvement and management can be successful. This approach will need to incorporate both the AFLA primary strategy of supporting juvenile salmonids with in-river habitat during lower flow conditions and the Service's approach of optimizing existing and potential future juvenile rearing habitat during higher flow conditions.

C. Predation

The License Applicants' proposal relies in large part on a predation management strategy that includes a barrier weir and predator control and suppression strategies. The Service agrees that predation rates on juvenile salmonids likely have a significant impact on their populations and predation management would be beneficial, if reductions in predation rates consistent with the AFLA modeled results can be achieved. The Service will participate with the License Applicants to provide technical assistance as they undertake and refine their predation management strategy over time.

III. Policy Direction and Refined Recommendations

The Service proposed a set of recommendations included in the USDOI Response Letters based on studies from multiple river systems, including the Tuolumne River, successes achieved in other areas and on best available science. However, following discussions with License Applicants, the Service recognizes that the flow proposal included in the USDOI Response Letter for Don Pedro includes proposed volumes of water as a license condition that are difficult for the License Applicants to manage in the context of their FERC license without significant effects to overall water supply and operation of the Projects. For this reason, the Service proposes to focus on flow beyond the License Applicants needs that can be made available in some year types and long-term improvements to habitat that can be made to improve salmonid survival in the Tuolumne River.

In addition to the License Applicants' proposed AFLA flows, Revised Section 10(j) Condition 2 will provide flows in the lower Tuolumne River downstream of La Grange. Any flows required by a new license for Don Pedro will be passed through La Grange and measured for compliance

purposes downstream of La Grange. Accordingly, the original Section 10(j) Conditions 2 and 7 in the DOI Response Letter for La Grange are being withdrawn as previously noted.

Investments in long-term habitat strategies may be more cost-effective and beneficial over time than some of the individual activities proposed by the License Applicants, such as a restoration hatchery or boulder placement. These longer term investments can provide the opportunity for meaningful habitat improvements on the lower Tuolumne River. The Service's proposed Revised Section 10(j) Conditions are included in Section IV of this letter and are described in more detail below. The Revised Section 10(j) Conditions are focused on creating a framework for improving conditions for fall-run Chinook salmon in the Tuolumne River.

A. Tuolumne Partnership Advisory Committee

License Applicants will create a Tuolumne Partnership Advisory Committee (TPAC) to provide recommendations to the License Applicants on development and implementation of the Spill Management Plan and Lower Tuolumne River Habitat Improvement Program and Associated Capital Fund and Annual Funding as described below and in Section IV of this letter. The TPAC will consist of the Service, License Applicants, and City and County of San Francisco (CCSF). Other parties, including the National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW), will be encouraged to participate as full members in the TPAC. The Service believes that participation of NMFS and CDFW will support the success of the Spill Management Plan and Lower Tuolumne River Habitat Improvement Program and Associated Capital Fund and Annual Funding. The role of the TPAC will be to provide recommendations to the License Applicants and will be further defined by a Memorandum of Understanding to be developed by all participating parties. Decision making authority related to Spill releases and selection of projects and funding for habitat improvements will rest with the License Applicants, however, the License Applicants will strive to exercise that authority consistent with the recommendations of the TPAC whenever possible. Revised Section 10(j) Condition 4, included in Section IV below, would require creation of the TPAC.

B. Spill Management Plan

The License Applicants' modeling demonstrates that under the Districts' Preferred Plan described in the AFLA, in wetter years there is often a quantity of water above License Applicants' needs which is spilled or released to the river. This water may be useful to benefit aquatic species and their habitat. Accordingly, the Service and the License Applicants have developed a Spill Management Plan that would provide additional targeted flow to benefit fall-run Chinook salmon during spring and fall months when available. The concept for the plan is described below and the Revised Section 10(j) Condition 2: Spill Management Plan is included in Section IV of this letter. This Revised Section 10(j) Condition 2 is intended to replace in their entirety the original Section 10(j) USFWS Conditions 2 and 7 previously filed in the Don Pedro proceeding.

1. Concept for Spill Management Plan (SMP)

Under the AFLA, modeled flows released to the lower Tuolumne River from the Don Pedro Reservoir exceed the License Applicants' proposed required instream flows in 25 years of the 42 year period of record (1971-2012; see Appendix C, pg. 18 of the License Applicants' May 14, 2018 filing with FERC). Flows released to the river in excess of required flows are referred to as "Spill". When projected to be available, the License Applicants will make reasonable efforts to manage Spill in accordance with flow recommendations developed by the TPAC.

The primary goal of the SMP is to attempt to maximize the benefit of Spill events for fall-run Chinook salmon floodplain rearing through the control of Spill flow rates, timing, and duration as described below and further developed through the SMP. Based on information in the record before FERC in this proceeding, the initial governing metrics for the SMP are proposed as follows:

a. Timing

The target months for management of available flow volumes in the SMP for floodplain rearing are March and April. The rationale for these target months is (a) by early March, reasonably reliable predictions of total runoff volume expected to occur are available from Bulletin 120 prepared by the California Department of Water Resources (CDWR) and (b) studies of fall-run Chinook salmon on the Tuolumne River demonstrate that March and April are among peak months for fall-run Chinook rearing (see W&AR-06). There may be exceptions to these target months as recommended by the TPAC, for example, in years when significant winter precipitation events might result in earlier Spill.

b. Duration of SMP Releases

Previous research shows significant increases in macroinvertebrate and phytoplankton populations with intermittent floodplain inundation of 2 or more weeks (Grosholz and Gallo, 2006; Ahearn et al. 2006; Heady and Merz 2007; Moyle et al. 2007; Matella and Merenlender, 2015). Therefore, the target minimum duration of a managed Spill release to enhance floodplain rearing is 15 days. There may be exceptions to this duration based on recommendations of the TPAC.

c. Flow Targets

The Service and License Applicants have agreed to target a managed Spill release of no less than 1750 cfs and to try to limit occurrences of Spill releases between 500 cfs and 1700 cfs at the La Grange gage except during recession flows. Flows will be shaped to the extent practicable to include recession rates recommended by the TPAC.

d. Spring Outmigration Pulse Flow

If the forecasted Spill volume in March is less than 55,000 acre-feet, the managed Spill may be added to the spring outmigration pulse flow identified in the AFLA (see Exhibit E, Section 5.6.10). Alternatively, based on recommendation of the TPAC, any Spill volume of less than

55,000 acre-feet may be used to improve in-channel rearing, riparian recruitment and survival or temperature management consistent with the flow targets articulated in paragraph c, above.

e. Fall Adult Migration Attraction Pulse Flow

In the event there is excess water available on September 1 of any year, as described below, the TPAC may recommend release of such excess water as an adult fall-run Chinook salmon migration attraction flow, subject to the following:

- If on September 1, the Don Pedro Reservoir water surface elevation is above 801.9 feet, the TPAC will meet and confer on the use of the unused portion of the managed Spill volume
- Any such water will be used before October 7
- Use of the water will not, by itself, result in the Don Pedro Reservoir water surface elevation being less than 801.9 ft as of October 7.

Alternatively, if recommended by the TPAC, Spill may be used for the purpose of temperature management.

Flow releases recommended by the TPAC during the fall period for adult migration or temperature management will be coordinated with releases from other San Joaquin River tributaries to the extent possible to maximize potential benefits to salmonid populations throughout the larger watershed.

f. Adaptive Management

It is recognized that habitat conditions in the lower Tuolumne River can change over time due to naturally occurring events or as a result of habitat improvement projects, for example, as proposed to occur under the Lower Tuolumne River Habitat Improvement Fund described below. Within six months of the 12th anniversary of the issuance of the new Don Pedro license, the License Applicants will initiate the necessary studies to develop a revised rearing habitat vs. flow relationship on the lower Tuolumne River, which shall reflect and document the changes that have occurred since license issuance using the results of study W&AR-04 as baseline habitat conditions. Changed habitat conditions, or any other data and information that has been developed through the SMP, may be used to guide recommendations of the TPAC. This report will be provided as a draft to individual members of the TPAC for a 60-day review prior to filing with FERC. Any comments from TPAC members which are not resolved in the License Applicants' filing will be noted in the License Applicants' report to FERC.

g. Reporting

The License Applicants will file with FERC by January 31 of the calendar year following the occurrence of a Spill, a report describing the actual flows that occurred under the SMP, the final TPAC recommendations for that year's Spill use, and any proposed changes to the SMP. A draft report for review and comment will be provided to the individual members of the TPAC at least 60 days prior to the filing with FERC.

h. TPAC Recommendations

The TPAC will meet monthly or more frequently starting in the first January after license issuance on or about the 10th of each month to review the License Applicants' projections of potential Spills, and discuss use of any identified Spill volumes. In the March meeting, if not sooner, the TPAC will strive to reach unanimous agreement on the purpose, timing, duration and flow rate for that year's SMP. The initial TPAC recommendation can be adjusted as better information becomes available related to forecasted hydrology. By April 10, the TPAC will make reasonable efforts to recommend any final adjustments to that year's SMP. The License Applicants retain ultimate control over actual Spill amounts, timing and management.

i. Determination of Spill Available for SMP

The License Applicants operate the Project for a variety of purposes, including water supply, flood control, recreation, hydroelectric generation, FERC license requirements and other beneficial uses. For purposes of this SMP, project Spill volumes will be estimated by the License Applicants using the 90% runoff exceedance value as published by CDWR in Bulletin 120, current reservoir water levels, License Applicants' project water supply demands, FERC license requirements, and any other lawful activity within the discretion of the License Applicants. Actual Spill will depend on real time hydrologic and water management conditions. The License Applicants will not be required to operate the Project in a manner that creates or retains a Spill, or prioritize the creation or maintenance of a Spill in making its discretionary decisions regarding the operation of the Project.

C. Long-Term Habitat Restoration

The Service believes that there is great opportunity for long-term habitat restoration on the Tuolumne River, but that time is needed to fully develop the vision for restoration, and then for development and implementation of actions, which is not consistent with FERC timelines for license issuances. Because of this, the Service is proposing development of a long-term habitat strategy to be implemented with a restoration fund created by the License Applicants. The Service is proposing Revised Section 10(j) Condition 3:Development and Implementation of Lower Tuolumne River Habitat Improvement Program and Associated Capital Fund and Annual Funding. This Revised Section 10(j) Condition 3 is intended to replace in their entirety the Service's original Section 10(j) Conditions 3 and 4 for Don Pedro. In addition, the habitat improvement projects to be facilitated by Revised Section 10(j) Condition 3 would occur downstream of La Grange and are intended to enhance the lower Tuolumne River in coordination with operation of Don Pedro. Accordingly, the Service's original Section 10(j) Conditions 3 and 4 in the DOI Response Letter for La Grange are being withdrawn, as previously noted.

Revised Section 10(j) Condition 3 requires the License Applicants to set up a fund and would commit to providing the funding identified in the AFLA, totaling $38,000,000 for capital costs and an additional annual increment not to exceed $1,000,000 for O&M, monitoring and reporting, for implementing actions that protect and enhance salmonid populations and aquatic habitat. The outline of the Lower Tuolumne River Habitat Improvement Program (LTRHIP) and

associated fund, potential projects to be included in the program, and estimates of the amount of restoration that could be accomplished through the Program are described further below. The Revised Section 10(j) Condition 3, included in Section IV of this letter, for establishment of the LTRHIP would be in lieu of the License Applicants' proposed hatchery, boulder placement, and hyacinth funding enhancement measures. The associated fund would support non-flow resource measures that enhance habitat for native salmonid species in the lower Tuolumne River. Through process that will be described in a Memorandum of Understanding to be developed after license issuance, the TPAC would recommend selection of specific improvement projects to be implemented with monies from the fund.

1. Lower Tuolumne River Habitat Improvement Fund

The Service proposes that the License Applicants establish an interest-bearing account to fund the LTRHIP's non-flow enhancement measures. The total capital contribution from the License Applicants to the LTRHIP account will be $38 million, which would be contributed to the LTRHIP account in increments of $9.5 million, the first of which will be contributed no later than six months after FERC's approval of the final LTRHIP (see Section IV below). After the first contribution, additional contributions of $9.5 million shall be made by the License Applicants within six months of the 6th, 9th, and 12th anniversaries of license issuance, subject to the following exception. Once the amount of uncommitted funds available in the LTRHIP account reaches $19 million (inclusive of interest) in year eight following license issuance, the License Applicants may withhold further contributions until the uncommitted balance becomes less than $9 million.

Annual funding for O&M, environmental monitoring, and reporting associated with enhancement projects selected by the TPAC shall be provided by the License Applicants, not to exceed $1 million per year for the term of the new license. This annual funding shall be in addition to the LTRHIP capital funding account.

a. Fund Management

The License Applicants will be responsible for dispersing monies from the LTRHIP account, as recommended by the TPAC. Costs associated with participation in the TPAC will not be reimbursable. The License Applicants will be responsible for executing and implementing contracts for design, permitting, construction, monitoring, and reporting related to the improvement projects. All such contracts will be available for review by the TPAC members. The License Applicants' costs associated with the administration of the fund and of contracts will be reimbursable from the LTRHIP fund, not to exceed $100,000 per year.

Interest earned will be accrued in the fund and available for use. Unless otherwise proposed via the LTRHIP and agreed upon by the License Applicants, the LTRHIP account will be terminated within three months of the expiration of the license and will not be available for disbursement for improvement projects during the term of any annual license following expiration of the new license for Don Pedro. Any funds remaining in the LTRHIP account on the date of the expiration of the new license will be returned to the Districts upon termination of the LTRHIP account.

2. LTRHIP

Funds in the LTRHIP account may be used to plan, design, implement, and construct specific in-channel, riparian, and floodplain improvements in the lower Tuolumne River that benefit native salmonid species, with the first priority being the uppermost 25 miles of the lower Tuolumne River. Types of enhancement projects for which funds are available may include spawning habitat improvements, floodplain habitat improvements, riparian restoration, improved connectivity between river channel and adjacent floodplains, slough development, improvements to in-channel structural complexity, and LWM installation and replacement.

a. Selection of Restoration Projects

Restoration improvement projects to be implemented using the LTRHIP fund will be prioritized and recommended by the TPAC. The TPAC will prioritize capital projects that individually cost less than $5 million. The TPAC shall develop a systematic approach to evaluating preferred enhancement projects. The primary beneficiaries of the improvement projects shall be native salmonid species. The project selection process shall follow the Spawning Habitat Integrated Rehabilitation Approach (SHIRA) process, or some other technically rigorous approach approved by the TPAC. The TPAC's selection of enhancement projects shall be based on scientific justification, and shall include consideration of the cost-effectiveness of the enhancement project.

The fund will be used to develop and implement restoration on the Tuolumne River. The parties will strive to find long-term solutions that are cost-effective and feasible given the water supply constraints. We believe that the SHIRA process will provide a model for restoration in the spawning reach of the lower Tuolumne River immediately and has shown additional positive results in addressing rearing and outmigration habitat improvements in recent years. The Service has had success on other streams implementing SHIRA with partners. This approach is one that we think could be used on the Tuolumne River to improve habitat conditions for salmonids.

b. SHIRA

Implementation of SHIRA-based approaches on several Central Valley watersheds has shown this general approach to be highly successful in balancing improvements to aquatic habitats and salmonid populations in systems where overall water availability is limiting. Generally, a SHIRA-based approach focuses on utilizing traditional approaches for improving salmonid spawning and rearing habitat to decrease differences between exiting riverbed elevations and adjacent floodplain habitats. Through time, this allows for improvements to in-stream habitat for salmonids, more frequent activation of existing floodplain habitats at lower flow levels and potential additional active floodplain reconnection at a much lower cost and with less overall impact to riverine habitats to achieve successful results.

UC Davis maintains a comprehensive website (http://shira.lawr.ucdavis.edu/) which includes background information, a detailed process framework, case studies and related publications.

Several Service staff members have extensive experience working with this approach in many of the watersheds included in the case studies.

These methods require significant physical habitat data collection and characterization. However, the Service and License Applicants have assessed existing resources and agree that the substantial information gathered by the License Applicants and others to date is likely sufficient to successfully implement a SHIRA-based approach for the upper portion of the lower Tuolumne River.

Initial planning and implementation utilizing SHIRA is primarily focused on in-stream additions of gravel and in many cases, contouring of existing gravels. The Service believes that gravel cleaning, as proposed in the License Applicants' AFLA, could be a complimentary component of these efforts as a form of contouring and improving existing gravel. Additionally, gravel cleaning would likely reduce the amount of needed gravel augmentation at many sites. The Service, along with several of our partners, has recently completed several in-channel and floodplain reconnection restoration projects in Central Valley watersheds utilizing SHIRA. These efforts range in size and scope from multiple miles to relatively short sections of riverine habitat. These efforts also range from areas where the in-channel elements of SHIRA have been implemented over many years to areas where in-channel and floodplain restoration are being implemented concurrently.

Based on recent success on the Stanislaus River, the Service is confident that existing data and associated information can be utilized to develop targeted restoration sites and a longer-term SHIRA-based implementation approach for the Tuolumne River. Through the Central Valley Project Improvement Act, the Service is actively implementing in-channel and floodplain restoration projects on multiple watersheds that begin to provide significant gains in juvenile in juvenile in-channel and floodplain rearing habitat at relatively modest flows and provide additional floodplain habitat complexity at multiple additional flow increases.

3. Expected Benefits

Based on the Service's experience in other watersheds, we believe that the funding identified by the License Applicants would be sufficient to allow for significant amounts of in-stream habitat improvements, floodplain restoration and monitoring over the lifetime of the license. Because of the importance of restoration on the Tuolumne and the benefits that could be provided by a long-term restoration strategy, the Service commits to work to with partners to research and pursue others appropriate sources of funding that may be leveraged to increase the funding available for restoration work. However, the commitment to funding contained in Revised Condition 3 is not dependent on additional sources of funding.

The Service has recent experience showing that the types of restoration projects described above can be designed, permitted, implemented and monitored. Table 1 in Attachment 1 to this letter provides cost-per-acre estimates and estimated maximum increase in fry capacity of enhanced habitat for recently implemented restoration projects on the Mokelumne, Merced, Stanislaus, and Yuba rivers. All of these projects utilize the general approach for floodplain reconnection/restoration that could be utilized on the Tuolumne. This approach includes sorting

material on site as perched floodplains are excavated and utilizing sorted materials on the newly lowered floodplains (e.g. contouring, providing adequate soils for riparian planting/recruitment), in-channel (e.g. increasing spawning habitat), and improving conditions in the adjacent riparian/upland interface. These costs generally include all aspects from design to implementation and post-project monitoring.

There are many areas adjacent to the lower Tuolumne River that may be suitable for restoration efforts. The Service has searched GIS databases and identified approximately 27 miles adjacent to the lower Tuolumne River that are publically owned, are designated as open space, and/or properties that have existing conservation easements on them (Attachment 1, Table 2). Major efficiencies could be achieved if many or all restoration actions (surface lowering, riparian plantings, LWM augmentation) were conducted at the same area.

Additionally, the Districts will fund up to $1 million per year for operation and maintenance activities, environmental monitoring, and reporting activities. These funds would be available to ensure that performance metrics are met and could include: additional planting, irrigation to increase riparian survival, implementing additional habitat complexity structural elements (e.g. LWM augmentation, boulder placement), coarse sediment/spawning gravel enhancement, and maintenance after initial placement, effectiveness monitoring and reporting.

We believe the LTRHIP and associated funding will be the most beneficial way to create appropriate habitat to support salmonids while avoiding water supply impacts to the License Applicants and their communities.

IV. Revised Section 10(j) License Conditions

As discussed above, the Service is replacing our original Section 10(j) Condition numbers 2, 3, 4 and 7 in the USDOI Response Letter for Don Pedro in their entirety. In addition, the Service is withdrawing its original 10(j) Condition numbers 2, 3, 4, and 7 in the USDOI Response Letter for La Grange. Recommendations for revised Section 10(j) Conditions 2, 3 and 4 for Don Pedro are as follows:

Revised Section 10(j) Condition 2: Spill Management Plan

Within one year of license issuance, the Licensees shall file with FERC a final Spill Management Plan (SMP), the purpose of which is to maximize the benefit of Spill events for fall-run Chinook salmon floodplain rearing. The SMP shall identify the preferred timing of releases, minimum durations, and preferred flow rates. The initial concept for the SMP agreed to by the Service and the License Applicants is outlined in the U.S, Fish and Wildlife Service's letter to FERC dated October 1, 2018. Any changes from this initial concept shall be documented in the SMP along with information supporting the change. The final SMP shall also contain implementation and adaptive management plans, as well as the final reporting schedule. The SMP shall not interfere with the Project's operations related to water supply management, minimum instream flow releases, flood control, and project safety.

The Licensees shall develop the plan in coordination with U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Wildlife and shall

submit the plan for review and comment by the agencies, detailing any comments of agencies not accepted in the final plan, which shall be submitted to FERC for approval. The Licensees shall implement the plan following approval by FERC.

Licensees will seek recommendations on implementation of the Spill Management Plan from the Tuolumne Partnership Advisory Committee (TPAC). The TPAC will meet monthly or more frequently starting in the first January after license issuance on or about the 10th of each month to review the Licensees' projections of potential Spills, and discuss use of any identified Spill volumes. The Licensees retain ultimate control over actual Spill amounts, timing and management, but will make all reasonable efforts to implement recommendations of the TPAC as to Spill management whenever possible.

Within six months of the 12th anniversary of license issuance, the Licensees will initiate the necessary studies to develop a revised rearing habitat vs. flow relationship on the lower Tuolumne River, which shall reflect and document the changes that have occurred since license issuance using the results of study W&AR-04 as baseline habitat conditions. Changed habitat conditions, or any other data and information that has been developed through the SMP, may be used to guide the recommendations of the TPAC. This report will be provided as a draft to members of the TPAC for a 60-day review prior to filing with FERC. Any comments from TPAC members which are not resolved in the License Applicants' filing will be noted in the License Applicants' report to FERC.

Revised Section 10(j) Condition 3: Development and Implementation of Lower Tuolumne River Habitat Improvement Program and Associated Capital Fund and Annual Funding Accounts

Within one year of license issuance, the Licensees shall submit to FERC a plan to implement the provisions of the Lower Tuolumne River Habitat Improvement Program (LTRHIP) and associated funds described in U.S. Fish and Wildlife Service letter to FERC dated October 1, 2018. The LTRHIP Implementation Plan shall address establishment of the LTRHIP fund account, management of the funds in the account, administration of Tuolumne Partnership Advisory Committee, guidance for selection of recommended enhancement projects by the Tuolumne Partnership Advisory Committee, and the Licensees' obligations with respect to the operation, maintenance, monitoring, and reporting associated with enhancement projects.

The Licensees shall develop the final LTRHIP in coordination with U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Fish and Wildlife, and City and County of San Francisco and shall submit the plan for review and comment by the agencies, detailing any comments of agencies not accepted in the final plan, which shall be submitted to FERC for approval. The Licensees shall implement the plan following approval by FERC.

The LTRHIP associated funding accounts shall have a total capital fund of $38 million to be funded with four equal tranches of $9.5 million beginning within six months of FERC's approval of the LTRHIP Implementation Plan and being fully funded by the 12th anniversary of license issuance. After the first contribution, additional contributions of $9.5 million shall be made by the Licensee within six months of the 6th, 9th, and 12th anniversaries of license issuance. Capital funds may be withheld if uncommitted capital dollars exceed $19 million on the 8th

anniversary of license issuance, but contributions will continue following reduction in uncommitted capital dollars in the fund below $19 million.

The Licensees shall provide annual funding, not to exceed $1 million in any calendar year, for O&M, environmental monitoring and reporting on constructed capital projects. The first installment will be available following FERC approval of the LTRHIP Implementation Plan.

Revised Section 10(j) Condition 4: Creation of Tuolumne Partnership Advisory Committee (TPAC)

Licensee will create a Tuolumne Partnership Advisory Committee (TPAC) to provide recommendations on development and implementation of Revised Section 10(j) Conditions 2 and 3 to the Licensee. The TPAC will consist of the Licensees, U.S. Fish and Wildlife Service, and City and County of San Francisco. Other parties, including the National Marine Fisheries Service and California Department of Fish and Wildlife will be encouraged to participate in the TPAC as full members. Decision making authority related to Revised Section 10(j) Conditions 2 and 3 will rest with the Licensees, however, the Licensees will strive to exercise that authority consistent with the recommendations of the TPAC whenever possible. The parties to the TPAC shall confirm the role and responsibilities of the TPAC in a Memorandum of Understanding that, when signed by all participating entities, shall be submitted by the Licensees to FERC within four months of issuance of the Don Pedro license.

V. Conclusion

The Service recognizes that we are presenting this proposal to FERC outside of the normal timeframes for the FERC process and appreciates FERC's consideration of this collaboratively developed proposal. We believe the new recommended conditions are sufficiently developed to allow for a license to be issued under the current FERC licensing process requirements. The conditions will ensure the license "adequately and equitably protect[s], mitigate[s] damages to, and enhance[s] fish and wildlife (including related spawning grounds and habitat) affected by the development, operation, and management" of the Projects on the Tuolumne River. These three collectively developed conditions create an opportunity for flow management and habitat restoration and have the potential for collaboratively achieved restoration outcomes while supporting the License Applicants' goals for water supply.

Thank you again for the opportunity for additional time to develop these conditions in a collaborative process. We sincerely appreciate FERC's facilitation of this effort.

Sincerely,

Paul Souza
Director, Pacific Southwest Region
U.S. Fish and Wildlife Service

cc: Service List

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Attachment 1

Table 1. Recent USFWS floodplain reconnection/restoration projects that have been implemented and are inclusive of design, permitting, and construction costs.

Project	Acres	Material Removed (yds3)	Cost	cost per acre	Estimated Juvenile Salmonid Capacity (fry)[1]
Mokelumne River					
Site 1B	0.94	16,921	$152,289	$162,010	70,370
Site 1C	1.68	42,669	$384,021	$228,584	125,770
Site 2	0.53	12,456	$112,104	$211,517	39,675
Site 9	6.2	147,169	$1,324,521	$213,632	464,160
Merced River					
Henderson Park	16.5	71,855	$2,442,441	$148,027	1,235,270
Merced River Ranch	19.5	91,372	$2,410,632	$123,622	1,459,865
Stanislaus River					
Buttonbush	4.4	11,418	$1,015,739	$230,850	329,405
Yuba River (Implemented)					
Hammond Bar[2]	5	0	$277,482.00	$55,496	374,325
Yuba River Canyon	13.5	23,500	$1,950,000	$144,444	1,010,675
Yuba River (Planned)					
Hallwood Phase 1[3]	90	1,075,000	$4,200,000	$46,667	6,737,850
Long Bar[3]	40	300,000	$2,014,000	$50,350	2,994,600

1- Based on current Central Valley Project Improvement Act, Science Integration Team approach. Assumes individual fry habitat need of 0.054 m^2 and fry access to all acres enhanced by the individual project

2- Riparian planting only

3- Utilizes partnership with commercial gravel company for material removal

Table 2: Summary of lands adjacent to the Tuolumne River that are publicly owned, owned by conservation groups, or have an existing conservation easement on them.

Property Name	Owner/manager	Location	Riverfront (feet) *includes both sides of river if applicable*
San Juaquin NWR	USFWS	Near confluence with SJR	11,163
Dos Rios Ranch	River Partners	Near confluence with SJR	18,605
Grayson River Ranch	Private property	RM 5 to RM 6	5,930
Riverdale Park	Stanislaus County	RM 12.4	340
Tuolumne River Regional Park	Stanislaus County	RM 12.5 to RM 19.5	29,118
Dryden Park Golf Course	City of Modesto	RM 14 to 15	6,315
Modesto Municipal Golf Course	City of Modesto	RM 15.5	1,044
Mancini Park	City of Modesto	RM 17	992
Legion Park	City of Modesto	RM 17 to 18	3,362
Ceres Bluff Regional Park	Stanislaus County	Near RM 20	1,604
Fox Grove Fishing Access	State Lands	Near Albers Road	6,490
Waterford River Walk Park	City of Waterford	Waterford	816
Turlock Lake State Recreation Area	California Dept. of Parks and Recreation	RM 42 to 43	4,156
Bobcat Flat	Friends of the Tuolumne	RM 44 to RM 44.5	24,354
La Grange Regional Park	Stanislaus County	RM 48 to 51.5	10,547
State Lands	CDFW	RM 49 to 50	6,376
TID Land	Turlock Irrigation District	RM 51 to 52.5	11,310
		Total:	**142,522 (~27 miles)**

BEFORE THE
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

CERTIFICATE OF SERVICE

I hereby certify that the U.S. Fish and Wildlife Service supplement to the January 29, 2018 USDOI Response Letters to FERC's REA, for the Don Pedro Project (P-2299) and La Grange Project (P-14581) dated October 1, 2018, has this day been electronically filed with the Federal Energy Regulatory Commission and electronically served on Parties indicating a willingness to receive electronic service and served, via deposit in U.S. mail, first-class postage paid, upon each other person designated on the service list for Project #2299 and Project #14581, compiled by the Commission Secretary.

Dated at Sacramento, California, this 1st of October, 2018

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