PUBLIC COMMENT PERIOD FOR
DRAFT WATER QUALITY CERTIFICATION AMENDMENT

CALIFORNIA DEPARTMENT OF WATER RESOURCES AND
LOS ANGELES DEPARTMENT OF WATER AND POWER
SOUTH STATE WATER PROJECT HYDROPOWER
FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2426

To: Interested Parties

On March 16, 2022, the California Department of Water Resources' (DWR) and the Los Angeles Department of Water and Power (LADWP) (collectively, Licensees) requested an amendment of the South State Water Project Hydropower (Project) water quality certification (certification) from the State Water Resources Control Board (State Water Board).

The Licensees requested an amendment to specific provisions of the certification, specifically related to: Minimum Instream Flows (Condition 3); Ramping Rates (Condition 5): Large Woody Material Management (Condition 6); and Gravel Enhancement (Condition 7). The Licensees' amendment request is in part to: allow United Water Conservation District to receive its full water deliveries of 3,150 acre-feet, when available; align large woody material management with the United States Forest Service requirements; and provide for a gravel assessment to determine the need for gravel augmentation.

This draft certification amendment does not constitute a final action by the State Water Board. The State Water Board is releasing this draft certification amendment to provide the public with an opportunity to review and comment on draft amended conditions developed to protect water quality and beneficial uses.

The **draft amendment to conditions of the Project certification** is attached. Additional information regarding the Project and State Water Board's process is available on the **Project webpage**, at: *https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/ferc_2426_14797/ferc2426.html*

The certification comment period is from the date of this notice until Tuesday, February 14, 2023. **Comments on the draft certification amendment must be received by 5:00 pm on February 14, 2023**, and can be submitted electronically or by mail as follows:

Email: WR401Program@waterboards.ca.gov
or
Mail:
State Water Resources Control Board
Division of Water Rights – Water Quality Certification Program
Attn. Andrea Sellers
P.O. Box 2000
Sacramento, CA 95812-2000

As background, the Project is part of the State Water Project (SWP), which is the largest state-owned and operated water storage and delivery project in the United States. The Project is located along the southern end of the West Branch of the SWP in Los Angeles County, California, between the towns of Castaic and Gorman. The Project has an installed capacity of 1,349,290 kilowatts.

KEEP INFORMED OF PROJECT MILESTONES

To receive emails related to the Project, interested persons should enroll in the "Water Rights Water Quality Certification" e-mail notification service. Instructions on how to sign up for the **State Water Board's Email Subscription List** are outlined below:

1. Visit:
http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml
2. Provide your name and email in the required fields.
3. In the categories below the email and name fields, select "Water Rights," then "Water Rights Water Quality Certification."
4. Click the "Subscribe" button.
5. An email will be sent to you. You must respond to the email message to confirm your membership on the selected list(s).

By enrolling in this email list, you will receive notices for Division of Water Rights' Water Quality Certification Program pertaining to the Project's certification process. You can enroll or un-enroll from the email subscription service at any time. If you do not have internet access or do not wish to participate in the email subscription list, you may contact Andrea Sellers by email to: **WR401Program@waterboards.ca.gov** to request to receive notices by mail.

If you have questions regarding this notice, please contact Andrea Sellers by email to: **WR401Program@waterboards.ca.gov**.

Parker Thaler
Parker Thaler
Water Quality Certification Program Manager
Division of Water Rights

1/30/2023
Date

Enclosure: Draft Amended Conditions for Water Quality Certification for South State Water Hydropower

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Via eFiling to FERC Docket P-2426

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ENCLOSURE:
DRAFT AMENDED CONDITIONS FOR WATER QUALITY CERTIFICATION
FOR SOUTH STATE WATER HYDROPOWER

The State Water Resources Control Board (State Water Board) is proposing to amend the California Department of Water Resources' (DWR) and the Los Angeles Department of Water and Power's (LADWP) South State Water Project Hydropower (Project) water quality certification (certification) to modify Conditions 3, 5, 6, and 7. Draft deletions are shown in ~~strikeout~~. Draft additions are shown in **bold underlined** text. The page numbers and section associated with the **original certification text** that is proposed to be updated as part of this draft amendment are referenced in ***bold italics*** after the applicable title of the condition or rationale section.

CONDITION 3. Minimum Instream Flows *(Section 5, pages 25-26)*

Unless otherwise approved by the Deputy Director, from FERC license issuance until the Minimum Instream Flows Plan has received all necessary approvals, outflows from Pyramid Dam to Pyramid reach, as measured by United States Geological Survey (USGS) gage no. 11109525[10], are required to match the natural inflow into Pyramid Lake to the extent operationally feasible, consistent with safety requirements and in accordance with the authorizations provided by FERC on October 28, 2009 (FERC 2009). At a minimum, the purpose of the Minimum Instream Flows Plan is to ensure that the methodology for measuring minimum instream flows is clear and the flows are met in order to protect water quality and beneficial uses.

No later than three months following issuance of the FERC license, the Licensees shall submit a Minimum Instream Flows Plan to the Deputy Director for review and consideration of approval. The Licensees shall file the Deputy Director-approved Minimum Instream Flows Plan, together with any required plan modifications, with FERC. The Licensees shall implement the Minimum Instream Flows Plan upon Deputy Director and any other required approvals. Any changes to the Minimum Instream Flows Plan shall be approved by the Deputy Director prior to implementation. The Minimum Instream Flows Plan shall be developed in consultation with the Forest Service, USFWS, CDFW, and State Water Board staff. Minimum instream flows shall be set to protect water quality and the beneficial uses by waterway reach and waterbody. At a minimum, minimum instream flows shall be established for outflow from Pyramid Lake into Piru Creek. ~~Minimum instream flows may vary by water year type, quantity, and timeframe.~~ At minimum, the Minimum Instream Flows Plan shall include:

- Purpose of the plan;
- Quantifiable instantaneous and daily averaged instream flow thresholds that will be met or exceeded and identified compliance locations;
- Detailed description of how and where minimum instream flows from the natural watersheds upstream of Pyramid Lake will be measured or calculated;
- Equipment that will be used by the Licensees to monitor instream flows in compliance with requirements of this certification. Information on how the

[10] USGS gage no. 11109525 is located on Piru Creek below Pyramid Lake near Gorman, California.

equipment will be deployed, set (e.g., frequency of data collection), operated, calibrated, and maintained;

- Detailed description of how, where, and when minimum instream flows will be released from Pyramid Dam to ensure releases match the timing and volume, within 90 percent, of all-natural sources of inflow into Pyramid Lake.
    - During non-storm times, use a time-step of two hours or less during the day and 12 hours or less during the night for volume matching.
    - During storm events, use a time-step of two hours or less for volume matching;
- Evaluation of the feasibility of upgrading existing stream flow gages to ensure instantaneous stream flow measurements occur at 15-minute intervals consistent with USGS standards and provide a recommendation for the upgrade and installation of gages based on the evaluation. Identify locations for and timeline for installation of additional stream flow telemetry gages to improve the accuracy and timing of flows released at Pyramid Dam. Ensure all stream flow gages are calibrated for the full range of possible unimpaired flows; and
- Description of un-gaged flow modeling methodology that will be used for overland water flows into Pyramid Lake from all un-gaged sources during rain events, which includes different terrain types. The methodology should provide for adjustments to account for terrain changes (e.g., post-wildfire).

The Licensees shall post all flow and other applicable water data to the California Data Exchange Center or successor website, within 24-hours of flow measurement, unless otherwise approved by the Deputy Director.

Section 3.5 Rationale for Condition 5: Ramping Rates *(Section 3, page 12)*

Sudden changes in instream flow can adversely impact a number of water quality parameters and beneficial uses. Aquatic organisms can be stranded as water levels rapidly decrease and expose previously inundated habitat. Project operations can cause abrupt instream flow and stage fluctuations in stream reaches that may strand, wash out, or otherwise impact aquatic species. Rapid changes in instream flow can increase turbidity and increase or decrease water temperature in waters of the state that may result in adverse or lethal effects to species, and that violate applicable water quality objectives. Additionally, abrupt instream flow and stage changes can create dangerous and even lethal conditions for the public engaging in fishing and other water recreation activities.

Ramping rates are necessary for water deliveries made from the Project to United Water Conservation District (UWCD). UWCD receives water as part of the Ventura County Watershed Protection District's long-term water supply contract with DWR.

UWCD receives up to 3,150 acre-feet (AF) per year of SWP **Table A[A]** water**, typically** through releases by DWR into the Pyramid Reach[8]. **UWCD may also be contractually eligible for deliveries of SWP water under Article 21 of SWP long-term water supply contracts or through acquisitions from other SWP contractors.** SWP water is delivered to UWCD between November 1 and the end of February each water year. Per the water supply contract, these water deliveries may be made over a period of a few days, ramping flows up and down to simulate the hydrograph of a typical storm event, or they may be released more gradually over a longer period.

Condition 5 requires DWR and LADWP to ~~develop and~~ implement up-ramping and down-ramping rates for discharges associated with **SWP** water deliveries to UWCD. **The ramping rates prescribed in Condition 5 are generally intended to mimic natural storm hydrographs. Condition 5 also includes a provision for water contact recreation opportunities.** Implementation of this condition will help avoid unreasonable impacts to water quality and beneficial uses associated with sudden changes in flow related to Project operations. Potentially impacted beneficial uses include: wildlife habitat; warm freshwater habitat; cold freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and water contact recreation.

CONDITION 5. Ramping Rates *(Section 5, pages 27-28)*

5(A) Ramping Rates (for flows up to and equal to 3,150 acre-feet from November through February)

Upon ~~L~~**l**icense issuance, the Licensees shall implement up- and down-ramping rates for Project water releases from Pyramid Dam to support **State Water Project (SWP)** water deliveries to United Water Conservation District **(UWCD)**.

The Licensees, in releasing water for ~~United Water Conservation District (~~**UWCD**~~)~~ down Pyramid Reach (stretch of Piru Creek from Pyramid Lake to Lake Piru), shall follow the requirements outlined below **for releases up to and equal to 3,150 acre-feet**, unless otherwise approved by the Deputy Director:

- The released water shall not adversely affect listed species;
- **Water deliveries shall be made between November 1 and February 28/29;**
- ***Up-ramping.* For releases of up to and equal to 100 cubic feet per second (cfs), up-ramping shall be conducted in a manner that increases discharge**

[A] Table A refers to a SWP water allocation requested by SWP water contactors and approved for delivery by DWR. At the time of this certification amendment, annual reporting of SWP Table A allocations are posted online at: https://water.ca.gov/Programs/State-Water-Project/Management/Bulletin-132.

[8] Pyramid reach refers to the 18.1-mile-long section of Piru Creek, which extends from the spillway or low-level outlet at Pyramid Dam (impounding Pyramid Lake) to the normal maximum water surface elevation of Lake Piru.

by no more than double in any one-hour period. For releases exceeding 100 cfs, up-ramping shall be conducted to ensure discharge increases are no more than double in any two-hour period;

- ***Down-ramping.*** **Down-ramping shall be conducted by stepping down flow over the course of a three-day period. On day 1 of down-ramping, the releases shall be reduced by two-thirds (to a flow magnitude approximately equal to 33 percent of the peak release rate). On day 2, releases shall be reduced by two-thirds (to a flow magnitude approximately equal to 11 percent of the original peak release rate). On day 3, releases shall be reduced to appropriate minimum instream flows (Condition 3). Down-ramping shall be implemented in a stepped manner, with a minimum of four decreases on day 1, a minimum of three decreases on day 2, and a minimum of two decreases on day 3. The three day down-ramping period may be shortened to one or two days when minimum instream flows exceed 33 percent or 11 percent of the peak release rate, respectively. Down-ramping days may or may not be consecutive (e.g., flows decreases on Day 2 may be extended over a longer term than one day to support whitewater boating flows) as long as the down ramping rate generally mimics a natural hydrograph;**
- **When UWCD's requested SWP Table A[B] water deliveries volume is sufficient (i.e., scheduled delivery of 660 acre-feet or greater), the release schedule shall accommodate a discharge of between 300 cfs and 700 cfs from 8:00 am to 5:00 pm on a Saturday to facilitate whitewater boating. The maximum discharge of 700 cfs for whitewater boating flows may be adjusted based on additional flow data and recreational use information following a request from the Licensees to and approval by the Deputy Director. When feasible, the Licensees shall target providing additional weekend recreational flow days for whitewater boating.**
- ~~Releases shall follow the following ramping rate schedules:~~
  - ~~Schedule A. For a one-day release starting Saturday, 100 cubic feet per second (cfs) from 04:00 am-07:00 am, then 300 cfs from 08:00 am-17:00 pm, then 200 cfs from 18:00 pm-0100 am Sunday, then 100 cfs from 02:00 am - 07:00 am, then return to base condition[11];~~
  - ~~Schedule B. For a two-day release starting Saturday, 100 cfs from Day 1 04:00 am -07:00 am, followed by 300 cfs from 08:00 am to Sunday 16:00 pm, then 200 cfs from Sunday 17:00 pm - 24:00 (midnight), then 100 cfs Monday 01:00 am - 07:00 am, then return to base condition;~~

[B] Table A refers to a SWP water allocation requested by SWP water contactors and approved for delivery by DWR. Annual reporting of SWP Table A allocations can here accessed here: https://water.ca.gov/programs/state-water-project/management/bulletin-132

~~[11] Base conditions refers to flows in place prior to the start of water deliveries.~~

- ~~Alternative Schedule~~. Temporary changes to the **measures established in Condition 5(A)** ~~ramping rates in Schedule A and Schedule B~~ may be implemented if the Licensees get written approval from the Forest Service and Deputy Director to adjust the schedules to address operational, safety, ~~and~~ **or** ~~endangered~~ **listed** species protection needs;

- The Licensees shall inform the Forest Service and State Water Board staff of the planned release at least four days prior to release implementation. **In the event that UWCD requests a SWP delivery with less than four days lead time, the Licensees shall inform the Forest Service and State Water Board staff within 24 hours of approving the delivery schedule; and**
- **Once sufficient water deliveries of 660 acre-feet or greater are confirmed, the Licensees shall provide an implementation schedule for whitewater and other recreationalists that may be impacted by the release by: (1) posting a public notice at an easily accessible location on the internet; and (2) providing notice to an e-mail contact list consisting of interested parties established in Condition 14 (Annual Consultation Meeting).**
- ~~The Licensees shall make a good faith effort to secure agreement as needed from UWCD to ensure the water delivery release schedule will meet the requirements above. If agreement with UWCD cannot be reached, the Licensees shall meet with the Forest Service, State Water Board staff, other interested agencies, and stakeholders to discuss alternatives. Any alternative that does not meet the schedule outlined in Schedule A or Schedule B of this condition, shall comply with the approvals required in the Alternative Schedule of this condition.~~

5(B) Evaluation of Ramping Rates (for flows greater than 3,150 acre-feet from November through February)

After completion of a California Environmental Quality Act (CEQA) document evaluating implementation of flushing flows and/or ramping rates in excess of 3,150 acre-feet in the Pyramid Reach, the Licensees may request Deputy Director approval for water deliveries in excess of 3,150 acre-feet between November 1 through February 28/29. In advance of submittal of such request, the Licensees shall consult with CDFW, UWCD, USFWS, Forest Service, National Marine Fisheries Service (NMFS), American Whitewater, and State Water Board staff. At a minimum, the consultation shall focus on whether the increased water deliveries are reasonably protective of water quality and beneficial uses in the Pyramid Reach. The consultation shall specifically address the degree to which the flow deliveries mimic natural hydrology and what, if any, flow adjustments may be implemented to provide for additional beneficial uses (e.g., water contact recreation, specifically whitewater boating flows) while providing for protection of other beneficial uses (e.g., wildlife habitat; warm freshwater habitat; cold freshwater habitat; migration of aquatic organisms; and spawning, reproduction, and/or early development).

As part of the request for Deputy Director approval of water deliveries greater than 3,150 acre-feet, the Licensees shall submit: documentation of consultation and the consulting agencies' comments and recommendations; any changes to the water deliveries and/or other management actions proposed by the Licensees in response to the comments; and a description of how any recommendations proposed by the Licensees incorporate or address the agencies comments and recommendations. The Deputy Director may approve, deny, or require changes to the extent necessary to ensure reasonable protection of beneficial uses. The Licensees shall file any Deputy Director approval for water deliveries in excess of 3,150 acre-feet with FERC. The Licensees shall implement the new flows and/or other management actions after receiving Deputy Director and any other required approvals.

Section 3.6 Rationale for Condition 6: Large Woody Material Management ***(Section 3, Page 13)***

Pyramid Dam blocks downstream movement of woody material from the Upper Piru Creek watershed that would otherwise support habitat for native fish species. Anchored or lodged woody material can create complex in-channel hydraulics that promote zones of scour and deposition, creating accumulations of spawning gravels, providing hydraulic refugia (Bisson et al. 1987), and creating pools by forcing flows to scour channel beds and banks. Woody material enriches native fish species aquatic habitat by supplying nutrients and substrate for aquatic organisms (Anderson et al. 1978). Condition 6 requires DWR and LADWP to develop a Large Woody Material~~s~~ Management Plan to ensure protection of water quality and beneficial uses by **passing** ~~adding~~ large woody material **from Pyramid Lake to the downstream reach of Piru Creek** ~~to the Project area~~ in a way that supports the natural function of the river. **Allowing the passage of large woody material below Pyramid Lake in Piru Creek supports the natural transport of woody material into the river system downstream of Pyramid Dam.** Implementation of this condition will help avoid unreasonable impacts to water quality and beneficial uses related to fish and habitat, and helps support a dam owner's requirement under Fish and Game Code 5937 to maintain fish in good condition below a dam.

CONDITION 6: Large Woody Material Management ***(Section 5, pages 28-29)***

No later than one year following FERC license issuance, the Licensees shall submit a Large Woody Material Management Plan (LWMMP) to the Deputy Director for review and consideration for approval. The Deputy Director may require modifications as part of any approval. Unless otherwise approved by the Deputy Director as part of LWMMP approval, the goal ~~for~~ **of the** LWMMP shall be~~: (1) to achieve an average of 50 pieces of large woody material per river mile in Pyramid Reach between Pyramid Dam and Fish Creek; and (2) that 70 percent of the large woody material shall be between 10- and 18-feet-long (with 20 percent of that having rootwads) and 30 percent shall be between 12- and 24-inches in diameter, as measured four feet from the larger end (with 20 percent of that having rootwads).~~ **to facilitate the passage of large woody material from**

Pyramid Lake to the downstream reach of Piru Creek. The Licensees shall file the Deputy Director-approved LWMMP **and any subsequent Deputy Director-approved updates thereto**, together with any required plan modifications, with FERC. The Licensees shall implement the LWMMP **and any subsequent Deputy Director approvals thereto** upon Deputy Director and any other required approvals. Any changes to the LWMMP shall be approved by the Deputy Director prior to implementation. The LWMMP shall be developed in consultation with the Forest Service, NMFS, CDFW, USFWS, and State Water Board staff. At a minimum, the LWMMP shall include:

- Purpose of the plan;
- A monitoring and reporting program ~~that describes how the Licensees will evaluate and report on the performance of management efforts related to large woody material. The monitoring and reporting program~~ **that** shall **at a minimum assess and report on large woody material management actions implemented under the approved LWMMP, including the amount of large woody material entering and leaving Pyramid Lake as well as on known or reported potential hazardous conditions associated with the passage of large woody material to the Pyramid Reach. Reports shall be submitted to the Deputy Director, Forest Service, NMFS, CDFW, and USFWS. Reports shall be provided annually to the agencies listed in the preceding sentence by January 30th for the preceding calendar year unless otherwise approved by the Deputy Director. The Licensees may propose updates and adaptive management to the LWMMP based on monitoring results or other information in the record. The Deputy Director may require implementation of additional monitoring, large woody material management measures, or other actions in response to the information provided in the reports or other information in the record;** ~~include evaluation of the amount of large woody material entering the Project and the criteria that will be used to evaluate plan implementation, including the need for adaptive management as outlined below);~~
- ~~Placement of large woody material within the active channel, side channels, and on floodplain benches;~~
- An implementation schedule **for large woody material management**;
- ~~Alternatives~~ **Method(s)** for transporting large woody material below Project facilities to the reach downstream of Pyramid Dam; **and**
- ~~An adaptive management program that describes how the Licensees plan to adjust large woody material management and monitoring methods based on evaluation of information and monitoring results. The program shall identify what triggers may result in implementation of the adaptive management program, for example when the goal of the plan is not being met. The adaptive management process shall include consultation with staff from the State Water Board, NMFS, Forest Service, USFWS, and CDFW; and~~
- Documentation of consultation with Forest Service, NMFS, CDFW, USFWS, and State Water Board staff, including comments and recommendations made in

connection with the LWMMP, and a description of how the LWMMP incorporates or addresses the comments and recommendations.

Section 3.7 Rationale for Condition 7: Gravel Enhancement *(Section 3, Page 13)*

~~While~~ Pyramid Dam blocks all downstream movement of spawning gravels from the Upper Piru Creek watershed, **which may adversely affect spawning gravel availability for listed anadromous fish species including Southern California steelhead (*Oncorhynchus mykiss*), if reintroduced during the life of the FERC license.** ~~the various tributaries to Pyramid Reach not only provide additional flows, but also provide spawning gravels for native fish species. Therefore, it is the first subreach of Piru Creek, below Pyramid Dam downstream to Fish Creek, that is likely to be spawning gravel limited.~~ **If listed anadromous fish are reintroduced to the Pyramid Reach,** ~~Placing~~ **an assessment of** spawning gravels ~~just downstream of Pyramid Dam~~ in **the** ~~this sub~~ **Pyramid** ~~r~~**R**each will **be necessary** ~~help~~ **to evaluate if Pyramid Dam is inhibiting suitable gravel composition for reintroduced listed anadromous fish and, if necessary, to inform adaptive management actions** ~~mitigate for the blockage of gravel by the dam~~. Suitable spawning gravel is necessary below dams to mitigate and minimize direct, indirect, and cumulative impacts of a project's facilities and operations on sediment movement and deposition, river geometry, channel characteristics, and benthic macroinvertebrate communities – a common salmonid food source (Dietrich et al. 1989).

The arroyo toad has specialized breeding habitat requirements that are vulnerable to habitat destruction and alteration due to short- and long-term changes in river hydrology. Piru Creek provides relatively stable reproductive habitat for arroyo toads. Arroyo toad habitat is dominated by silt and sand with patches of gravel (USFWS 2014). Gravel enhancement has the potential to displace arroyo toad habitat by changing the specialized breeding habitat that currently exists in Piru Creek. ~~The condition allows for modifications if implementation of the Gravel Enhancement Plan has or will result in negative effects to arroyo toads or their habitat.~~

Condition 7 requires DWR and LADWP to **conduct a gravel assessment in the Pyramid Reach, upon the request of the Deputy Director, if it is reasonably foreseeable that listed anadromous fish species will be reintroduced into this reach. The gravel assessment will be conducted in consultation with NMFS, CDFW, Forest Service, USFWS, and State Water Board staff to determine if gravel augmentation is needed, and, if necessary to inform gravel enhancement actions (through development and implementation of a Gravel Enhancement Plan) that are needed to ensure that adequate spawning gravel is available for listed anadromous fish species. Condition 7 further requires that gravel enhancement actions, if determined necessary, consider the habitat needs of arroyo toads and ensure that arroyo toads will not be unreasonably negatively impacted by such gravel enhancement actions. Condition 7 provides for the suspension of gravel enhancement actions if one or more resource agency indicates the gravel enhancement actions are negatively impacting sensitive species (Condition13).**

~~develop a Gravel Enhancement Plan to ensure the protection of water quality and beneficial uses by enhancing gravel in the Project area in a way that supports the natural function of the river while protecting native aquatic species, including the arroyo toad. Implementation of this condition will help avoid unreasonable impacts to water quality and beneficial uses.~~

CONDITION 7. Gravel Enhancement *(Section 5, pages 29-30)*

~~No later than three years following FERC license issuance, the Licensees shall submit to the Deputy Director for review and consideration for approval a Gravel Enhancement Plan for annual placement of salmonid spawning gravel in Piru Creek to address the reduced gravel availability in this reach. The Deputy Director may require modifications as part of any approval. The Licensees shall file the Deputy Director-approved Gravel Enhancement Plan, together with any required plan modifications, with FERC. The Licensees shall implement the Gravel Enhancement Plan upon Deputy Director and any other required approvals. Any changes to the Gravel Enhancement Plan shall be approved by the Deputy Director prior to implementation. The Gravel Enhancement Plan shall be developed in consultation with the Forest Service, USFWS, NMFS, CDFW, and State Water Board staff. At a minimum, the Gravel Enhancement Plan shall include:~~

- ~~Purpose of the plan;~~
- ~~An assessment of potential impacts to arroyo toad that may result from gravel enhancement, including identification of any measures to avoid any identified potential impacts or identification of limitations on gravel enhancement efforts needed to protect the arroyo toad;~~
- ~~Identification of gravel sizes to be used for gravel placement;~~
- ~~Identification of gravel sources and storage sites;~~
- ~~Measures for the annual placement of up to 35,203 cubic yards of spawning gravel in Piru Creek, between Pyramid Dam and Fish Creek;~~
- ~~Measures to protect water quality and beneficial uses during gravel placement;~~
- ~~Monitoring and reporting program that describes how the Licensees will evaluate and report on the performance of gravel enhancement efforts. This plan shall address assessment of spawning gravel availability, quantification of spawning gravel use by native *O. mykiss* (including Southern California steelhead when present);~~
- ~~An adaptive management program that describes how the Licensees plan to adjust gravel placement (including the annual gravel replacement quantity) and monitoring methods based on evaluation of information and monitoring results; and~~
- ~~Documentation of consultation with the Forest Service, USFWS, NMFS, CDFW State Water Board staff, including comments and recommendations made in connection with the plan, and a description of how the plan incorporates or addresses the comments and recommendations.~~

The Deputy Director may require a gravel assessment of the Pyramid Reach if it is reasonably foreseeable that listed anadromous fish species will be reintroduced to Project-impacted areas. Within two years following Deputy Director notice of the need for a gravel assessment due to the reasonably foreseeable reintroduction of listed anadromous fish, the Licensees shall conduct and submit the gravel assessment described in this condition to the Deputy Director for review and consideration of approval. The Licensees shall develop the gravel assessment in consultation with NMFS, USFWS, Forest Service, CDFW, and State Water Board staff. At a minimum, the gravel assessment shall analyze spawning gravel availability for listed anadromous fish as determined by visual surveys, available modeling data, and calculated available habitat unless otherwise approved by the Deputy Director. The gravel assessment shall be conducted prior to and following flow events of sufficient magnitude to result in scouring and sediment transport. The gravel assessment shall consider the existing natural habitat conditions, existing natural gravel sources, the ecological functions of Pyramid Reach, and the natural hydrograph of the watershed. The gravel assessment shall evaluate whether existing gravel conditions support listed anadromous fish reintroduction needs. If needed, the gravel assessment shall include a proposal for the amount of gravel needed to support spawning and rearing habitat for listed anadromous fish reintroduction. As part of the gravel assessment submitted for Deputy Director review and consideration of approval, the Licensees shall include documentation of consultation with the agencies, including any comments provided by the agencies and how such comments were addressed.

If the Deputy Director determines that gravel enhancement is necessary, the Licensees shall, within one year of the Deputy Director's determination, submit to the Deputy Director for review and consideration of approval a Gravel Enhancement Plan. The Gravel Enhancement Plan shall be developed in consultation with the Forest Service, USFWS, NMFS, CDFW, and State Water Board staff. The Gravel Enhancement Plan shall describe the actions that will be taken to enhance spawning gravel in the Pyramid Reach. The Deputy Director may require modifications as part of any approval. The Licensees shall file the Deputy Director-approved Gravel Enhancement Plan, together with any required plan modifications, with FERC. The Licensees shall implement the Gravel Enhancement Plan upon Deputy Director and any other required approvals. Any changes to the Gravel Enhancement Plan shall be approved by the Deputy Director prior to implementation.

At a minimum, the Gravel Enhancement Plan shall include:

- **Purpose of the plan;**
- **Potential impacts to arroyo toad and other sensitive species (Condition 13) and their habitat that may result from gravel enhancement, including identification of any measures to avoid potential impacts or identification**

of limitations on gravel enhancement activities needed to protect the arroyo toad and other sensitive species and their habitat;

- **Identification of gravel sizes, sources, and staging locations that will be used;**
- **Identification of the amounts, locations, and anticipated frequency of gravel placement;**
- **Measures to protect water quality and beneficial uses during gravel placement;**
- **A monitoring and reporting program that describes how the Licensees will evaluate and report on the performance of gravel enhancement actions. This program shall address: (a) assessment of spawning gravel availability and quantification of spawning gravel use by listed anadromous fish, as well as the trigger for additional gravel augmentation; and (b) monitoring and assessment of arroyo toads and their habitat, including identification of any potential impacts;**
- **An adaptive management program that describes how the Licensees, in consultation with USFWS, NMFS, Forest Service, CDFW, and State Water Board staff, plan to adjust gravel placement and monitoring methods based on evaluation of information and monitoring results; and**
- **Documentation of consultation with the State Water Board, NMFS, USFWS, Forest Service, and CDFW, including comments and recommendations made in connection with the plan, and a description of how the plan addresses the comments and recommendations.**

If it is determined that Gravel Enhancement Plan implementation is adversely impacting sensitive species (identified in Condition 13), including the arroyo toad, the Licensees shall **immediately** consult with the ~~State Water Board,~~ CDFW, Forest Service, USFWS, NMFS, and State Water Board staff to determine if revisions to the Gravel Enhancement Plan are needed. The Deputy Director may approve a temporary suspension of gravel enhancement activities if one or more resource agencies indicate that gravel enhancement activities are negatively impacting sensitive species (species identified in Condition 13).