# State Water Resources Control Board

March 14, 2023

Mr. Jeremiah McNeil, Acting Manager
Hydropower License Planning and Compliance Office
California Department of Water Resources
**Sent via email**: **Jeremiah.McNeil@water.ca.gov**

Mr. Simon Zewdu, Director
Power Transmission Planning, Regulatory, and Innovation Division
Los Angeles Department of Water and Power
**Sent via email**: **Simon.Zewdu@ladwp.com**

**South State Water Project Hydropower**
**Federal Energy Regulatory Commission Project No. 2426**
**Los Angeles County**
**Quail Lake, Pyramid Lake, Piru Creek, Cañada De Los Alamos/Gorman Creek, and Castaic Creek**

**AMENDMENT TO WATER QUALITY CERTIFICATION**

Dear Mr. McNeil and Mr. Zewdu:

On March 16, 2022, the State Water Resources Control Board (State Water Board), Division of Water Rights received the California Department of Water Resources' (DWR) and the Los Angeles Department of Water and Power's (LADWP) (collectively, Licensees) request for an amendment to the water quality certification (certification) for the South State Water Project Hydropower (Project), Federal Energy Regulatory Commission (FERC) Project No. 2426. The amendment request is focused on: Condition 3: Minimum Instream Flows; Condition 5: Ramping Rates; Condition 6: Large Woody Material Management; and Condition 7: Gravel Enhancement.

**Project Background**
The Project is part of a larger water storage and delivery system, the State Water Project (SWP), which is the largest state-owned and operated water supply 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 consists of: (1) Quail Lake; (2) lower Quail Canal; (3) Peace Valley Pipeline Intake Embankment; (4) Peace Valley Pipeline; (5) Gorman Bypass Channel; (6) William E. Warne Powerplant; (7) Warne Transmission Line; (8) Pyramid Dam and

Lake; (9) Angles Tunnel and Surge Chamber; (10) Castaic Powerplant; (11) Elderberry Forebay Dam; and (12) Elderberry Forebay and Castaic Transmission Line.

On January 30, 2020, the Licensees applied to FERC to relicense and continue to operate the existing Project for a 50-year term. The Executive Director of the State Water Board issued a certification for the Project on January 26, 2022. FERC has not yet made a decision on issuance of the new FERC license for the Project.

**California Environmental Quality Act**

As the California Environmental Quality Act (CEQA) lead agency, DWR released a draft Initial Study and Mitigated Negative Declaration (IS/MND) for the FERC relicensing of the Project on March 22, 2021, with the comment period concluding on April 21, 2021. DWR adopted the final IS/MND and Mitigation Monitoring and Reporting Program (MMRP) and filed a Notice of Determination with the Office of Planning and Research on June 24, 2021. The final IS/MND did not identify any significant and unavoidable impacts, and incorporated mitigation, where necessary, to reduce all potentially significant impacts to a less than significant level.

The State Water Board, in its role as a responsible agency under CEQA, reviewed and considered the environmental effects described in DWR's final IS/MND during development of this certification amendment. A responsible agency must account for monitoring and reporting of mitigation measures within its purview. (See Cal. Code Regs., title 14, §§ 15096(g) and 15097(d).) As a condition of certifying the broader Project in January 2022, the State Water Board required compliance with the mitigation measures identified in the IS/MND, as well as compliance with water quality-related monitoring and reporting identified in DWR's MMRP. DWR and LADWP are responsible for implementing each mitigation measure and providing verification of implementation.

This amendment does not change implementation or reporting for the mitigation measures identified in DWR's final IS/MND. Mitigation Measure GEO-1: *Prevention of Erosion Damage to Infrastructure* is incorporated into Condition 2 of the Project certification and Mitigation Measure MAND-1: *Development of Flood Warning Signage* is incorporated into Condition 11. Conditions 2 and 11 each require the Licensees maintain records demonstrating compliance with the associated mitigation measures.

The State Water Board will file a Notice of Determination with the Office of Planning and Research within five days of issuance of this certification amendment. (Cal. Code Regs., title 14, § 15075.)

**Noticing and Comments**

On April 12, 2022, the State Water Board provided public notice of the Licensees' request for an amendment to the Project certification, pursuant to California Code of Regulations, title 23, section 3858, by posting information describing the amendment request on the Water Quality Certification Program Public Notices webpage and noticing the "Water Rights Water Quality Certification" email subscription list. The State Water Board received comments from DWR, California Department of Fish and Wildlife,

and United States Department of Fish and Wildlife Service. On January 30, 2023, State Water Board staff released a draft certification amendment for public review and comment. The comment period ended on February 14, 2023. The State Water Board received one comment letter from American Whitewater. All comments were considered in the development of this certification amendment.

**Supporting Information for Certification Amendment**
This amendment includes modifications to Conditions 3, 5, 6, and 7 and associated rationale, as appropriate.

Condition 3 requires the Licensees to submit a Minimum Instream Flows Plan to the Deputy Director for the Division of Water Rights (Deputy Director) that specifies the methodology for measuring minimum instream flows. A minor modification was made to Condition 3 to remove the following sentence, "Minimum instream flows may vary by water year type, quantity, and timeframe." This sentence was unnecessary as Condition 3 requires that minimum instream flows be released from Pyramid Dam to ensure releases match the timing and volume, within 90 percent, of all-natural inflow sources to Pyramid Lake.

Condition 5 requires the Licensees to implement ramping rates when making water deliveries to United Water Conservation District (UWCD) via the Pyramid Reach. Modifications were made to Condition 5 to include a new ramping rate schedule for water deliveries. The new ramping rate schedule will allow UWCD to receive its allocation of up to 3,150 acre-feet and includes opportunities for recreational boating days while mimicking a natural hydrograph. Additionally, changes have been made to Condition 5 to allow for increases in the acre-feet amount of water delivered to UWCD, following additional CEQA analysis and Deputy Director approval.

Condition 6 requires the Licensees to develop and implement a Large Woody Material Management Plan. Condition 6 has been revised to update the requirements in the Large Woody Material Management Plan to be consistent with the United States Forest Service 4(e) Condition 43: *Downstream Passage of Large Woody Material* while ensuring water quality protections.

Condition 7 required the Licensees to develop and implement a Gravel Enhancement Plan. Condition 7 has been revised to require a gravel assessment of Pyramid Reach if it is reasonably foreseeable that Southern California steelhead will be reintroduced to Project-impacted areas. Condition 7 further allows for development and implementation of a Gravel Enhancement Plan, if determined necessary, based on the gravel assessment.

**Amendment Approval**
The State Water Board finds that the certification amendment, included as Attachment 1 (clean version) and Attachment 2 (strikethrough/underline version), will comply with state water quality standards and other appropriate requirements of state law. The State Water Board hereby amends the Project certification as detailed in Attachment 1. The language in Attachment 1 shall replace the applicable language in the

January 26, 2022 Project certification, as reflected in Attachment 2 (underline/ strikethrough version).

Approval of this Project certification amendment is granted with the following conditions:

- This certification amendment is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to California Water Code section 13330 and California Code of Regulations, title 23, division 3, chapter 28, article 6 (commencing with section 3867).
- This certification amendment is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a FERC license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to California Code of Regulations, title 23, section 3855, subdivision (b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
- This certification amendment is conditioned upon total payment of any fee required under California Code of Regulations, title 23, division 3, chapter 28 and owed by the applicant.

All documents and other information that constitute the public record for this amendment will be maintained by the Division of Water Rights and are available for public review at the following address:

State Water Resources Control Board
Division of Water Rights
1001 I Street, Sacramento, CA 95814

Documents are available at this location by appointment only. Please email **dwr@waterboards.ca.gov** to discuss options for document review.

If you have questions regarding this certification amendment, please contact Ms. Andrea Sellers, Project Manager in the Water Quality Certification Program of the Division of Water Rights, by email to **Andrea.Sellers@waterboards.ca.gov** or by phone at (916) 327-8449.

Sincerely,

Eileen Sobeck
Executive Director

Enclosures: Attachment 1: Amended Certification (Clean Version)
Attachment 2: Amended Certification (Strikethrough/Underline Version)

ec: Martha Guzman, Regional Administrator
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Kimberly D. Bose, Secretary
Federal Regulatory Energy Commission
**Via eFiling to FERC Docket P-2426**

Ramon Gamez
Los Angeles Department of Water and Power
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cc: Interested Parties List

**ATTACHMENT 1 – SOUTH STATE WATER PROJECT HYDROPOWER WATER QUALITY CERTIFICATION AMENDMENT FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2426 (CLEAN VERSION) MARCH 2023**

Below are amendments to the January 2022 water quality certification (certification) issued for the California Department of Water Resources' (DWR) and the Los Angeles Department of Water and Power's (LADWP) (collectively, Licensees) South State Water Project Hydropower (Project). The amendments modify Conditions 3, 5, 6, and 7 of the Project certification and associated rationale. The page numbers and section associated with the **original January 2022 certification text** 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. 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 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 license 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 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;

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[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.

- *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 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 Licensee shall target maintaining discharges that do not fluctuate by more than 100 cfs during this time period. 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 and receipt of Deputy Director and any other required approvals. When feasible, the Licensees shall target providing additional weekend recreational flow days for whitewater boating;
- Temporary changes to the measures established in Condition 5(A) may be implemented if the Licensees get written approval from the Forest Service and Deputy Director to adjust the schedules to address operational, safety, 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

[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

- 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).

**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 Management Plan to ensure protection of water quality and beneficial uses by passing large woody material from Pyramid Lake to the downstream reach of Piru Creek in a way that supports the natural function of the river. Allowing the passage of large woody material below Pyramid Lake into 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 of the LWMMP shall be 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. As part of the development of the LWMMP, the Licensees shall consult with American Whitewater to determine if there are measures that may be implemented to identify and address large woody material that may be hazardous to whitewater recreationalists. At a minimum, the LWMMP shall include:

- Purpose of the plan;
- A 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; and 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 30$^{th}$ 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;

- An implementation schedule for large woody material management;
- Method(s) for transporting large woody material below Project facilities to the reach downstream of Pyramid Dam;
- Any measures that will be implemented to identify and address large woody material that may be hazardous to whitewater recreationalists; and
- Documentation of consultation with Forest Service, NMFS, CDFW, USFWS, and State Water Board staff on the development of the LWMMP and any modifications thereto and consultation with American Whitewater on measures that may be implemented to identify and address large woody material hazards to whitewater recreationalist. The documentation shall include 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)*

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. If listed anadromous fish are reintroduced to the Pyramid Reach, an assessment of spawning gravels in the Pyramid Reach will be necessary to evaluate if Pyramid Dam is inhibiting suitable gravel composition for reintroduced listed anadromous fish and, if necessary, to inform adaptive management actions. 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

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 (Condition 13).

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

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 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).

**ATTACHMENT 2 – SOUTH STATE WATER PROJECT HYDROPOWER WATER QUALITY CERTIFICATION AMENDMENT FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2426 (STRIKETHROUGH/UNDERLINE VERSION) MARCH 2023**

Below are amendments to the January 2022 water quality certification (certification) issued for the California Department of Water Resources' (DWR) and the Los Angeles Department of Water and Power's (LADWP) (collectively, Licensees) South State Water Project Hydropower (Project). The amendments modify Conditions 3, 5, 6, and 7 of the Project certification and associated rationale. Deletions are shown in ~~strikeout~~. Additions are shown in **bold underlined** text. The page numbers and section associated with the **original January 2022 certification text** 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;

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

- Equipment that will be used by the Licensees to monitor instream flows in compliance with requirements of this certification. Information on how the 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;**

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**[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.

- ***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 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 Licensee shall target maintaining discharges that do not fluctuate by more than 100 cfs during this time period. 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 and receipt of Deputy Director and any other required approvals. 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];~~

**[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.~~

- ~~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;~~
- ~~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 into 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. **As part of the development of the LWMMP, the Licensees shall consult with American Whitewater to determine if there are measures that may be implemented to identify and address large woody material that may be hazardous to whitewater recreationalists.** 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; and 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;

- **Any measures that will be implemented to identify and address large woody material that may be hazardous to whitewater recreationalists; 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 **on the development of the LWMMP and any modifications thereto and consultation with American Whitewater on measures that may be implemented to identify and address large woody material hazards to whitewater recreationalist. The documentation shall**~~,~~ includ**e**~~ing~~ 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 (Condition 13).** ~~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).