

State Water Resources Control Board

AUG 25 2017

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

Dear Secretary Bose:

COMMENTS ON READY FOR ENVIRONMENTAL ANALYSIS AND PRELIMINARY TERMS AND CONDITIONS FOR YUBA RIVER DEVELOPMENT PROJECT, FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246; YUBA AND NEVADA COUNTIES

On June 26, 2017, the Federal Energy Regulatory Commission (FERC) issued a Notice of Ready for Environmental Analysis (REA) and an accompanying request for comments, protests, recommendations, and preliminary terms and conditions regarding a new license for the Yuba River Development Project (Project or YRDP), FERC Project No. 2246.

Yuba County Water Agency (YCWA), which owns and operates the Project, submitted an *Application for New License Major Project – Existing Dam* (Final License Application or FLA) on April 27, 2014. Following submittal of the FLA, YCWA and interested stakeholders continued to negotiate potential terms and conditions for the new license. On October 27, 2016, YCWA filed a letter with FERC documenting its intent to amend the FLA with potential agreed-upon Forest Service Federal Power Act (FPA) Section 4(e) conditions. The Forest Service filed a letter with FERC on November 7, 2016, supporting the potential 4(e) conditions outlined in YCWA's October 27, 2016 letter. On November 4, 2016, YCWA filed a letter with FERC describing three potential 10(j) conditions. Then, on December 1, 2016, YCWA filed another letter documenting five ultimately agreed-upon potential 10(j) conditions. The California Department of Fish and Wildlife filed a letter with FERC on December 19, 2016, supporting the potential 10(j) recommendations outlined in YCWA's December 1, 2016 letter. YCWA amended its FLA on June 5, 2017 to include potential 4(e) conditions, potential 10(j) recommendations, and YCWA's proposed protection, mitigation, and enhancement measures.

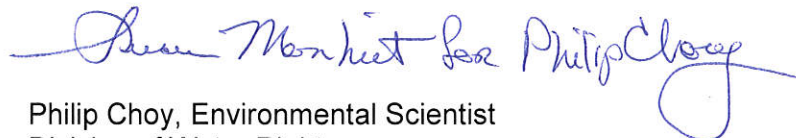
In accordance with a Memorandum of Understanding executed between the FERC and the State Water Resources Control Board (State Water Board) on November 19, 2013, State Water Board staff is providing the attached comments and preliminary terms and conditions in response to the FERC's Notice of REA.

If you have questions regarding this letter or the attachments, please contact me at (916) 341-5408 or by email at Philip.Choy@waterboards.ca.gov. Written correspondence should be directed to:

AUG 25 2017

State Water Resources Control Board
Division of Water Rights - Water Quality Certification Program
Attention: Philip Choy
P.O. Box 2000
Sacramento, CA 95812-2000

Sincerely,



Philip Choy, Environmental Scientist
Division of Water Rights

Enclosures: Attachment A – Comments on Notice of Ready for Environmental Analysis for the
Yuba River Development Project

Attachment B – Preliminary Terms and Conditions for Yuba River Development
Project

cc: Mr. Curt Aikens
Yuba County Water Agency
1220 F Street
Marysville, CA 95901

Mr. James Lynch
HDR Inc.
2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833

Mr. Thomas Holley
Nation Marine Fisheries Service
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814

Ms. Anna Allison
Department of Fish and Wildlife
1701 Nimbus Road
Rancho Cordova, CA 95670

Ms. Alison Willy
U.S. Fish and Wildlife Service
650 Capitol Mall, Room 8-300
Sacramento, CA 95814

Ms. Amy Lind
Tahoe and Plumas National Forests
631 Coyote St.
Nevada City, CA 95959

Mr. Adam Laputz
Central Valley Regional Water Quality
Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670

Mr. Geoff Rabone
Yuba County Water Agency
1220 F Street
Marysville, CA 95901

ATTACHMENT A:
COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

The following comments are provided by State Water Resources Control Board (State Water Board) staff in response to the notice of Ready for Environmental Analysis (REA) issued on June 26, 2017, by the Federal Energy Regulatory Commission (FERC or Commission) for the Yuba River Development Project (YRDP or Project), Project No. 2246. The Project is owned and operated by Yuba County Water Agency (YCWA or Licensee).

State Water Board Section 401 Authority

Prior to obtaining a new license from FERC, YCWA must obtain water quality certification (certification) from the State Water Board, pursuant to Section 401 of the federal Clean Water Act (33 U.S.C. §1341). Section 401 of the federal Clean Water Act requires any applicant for a federal license or permit which may result in discharge to navigable waters to obtain certification from the state in order to ensure the discharge will comply with the state's water quality standards and other appropriate requirements of state or federal law. The State Water Board is the certifying agency under Section 401 for the Project. Accordingly, the State Water Board may set conditions implementing Clean Water Act requirements, including the requirements of Section 303 of the Clean Water Act for water quality standards and implementation plans, or to implement "any other appropriate requirement of State law." (33 U.S.C. § 1341(d)).

On August 24, 2017, YCWA requested certification for the Project. The State Water Board may request additional information to clarify, amplify, correct, or otherwise supplement the contents of the application. Supplemental information may include evidence of compliance with appropriate state laws, including the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (Basin Plan). (Cal. Code Regs., tit. 23, § 3836.). In addition, the State Water Board must analyze potential Project-related environmental effects to the Yuba River drainage prior to making a determination that continued operation of the Project will be protective of the designated beneficial uses of the watershed.

Designated Beneficial Uses of the Yuba River

The Central Valley Regional Water Quality Control Board has adopted, and the State Water Board and the United States Environmental Protection Agency (USEPA) have approved, the Basin Plan. The Basin Plan designates the beneficial uses of waters within each watershed basin, and establishes water quality objectives designed to protect those uses pursuant to Section 303 of the Clean Water Act (33 U.S.C. § 1313). The beneficial uses together with the water quality objectives that are contained in the Basin Plan and state and federal anti-degradation requirements constitute water quality standards.

The existing designated beneficial uses of the Project area are categorized in two surface waterbodies.

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

1. Yuba River: Sources to Englebright Reservoir

Existing designated beneficial uses for the Yuba River from sources to Englebright Reservoir are municipal and domestic supply, irrigation, stock watering, hydroelectric power generation, contact and noncontact recreation, canoeing and rafting, cold freshwater habitat, cold water spawning habitat, and wildlife habitat. No potential uses have been designated for the Yuba River from sources to Englebright Reservoir.

2. Yuba River: Englebright Dam to Feather River

Existing designated beneficial uses for the Yuba River from Englebright Dam to the Feather River are irrigation, stock watering, hydroelectric power generation, contact and noncontact recreation, canoeing and rafting, warm and cold freshwater habitat, warm and cold water migration, warm and cold water spawning habitat, and wildlife habitat. The Basin Plan further clarifies that any segment with both warm and cold beneficial use designations will be considered cold waterbodies for the application of water quality objectives and the beneficial uses of any identified water body generally apply to its tributary streams. No potential uses have been designated for the Yuba River from Englebright Dam to the Feather River.

303(d) Listed Impairments

Section 303(d) of the Clean Water Act requires the identification of waterbodies in each state that do not meet, or are not expected to meet, water quality standards (i.e., impaired waterbodies). The 2008-2010 303(d) list (303(d) list) is the most current list that USEPA has approved. The 303(d) list designates impairments in the vicinity of the Project for the following pollutants or stressors: water temperature (Yuba River South Fork¹), arsenic (Kanaka Creek), pH (Deer Creek [Yuba County]), and mercury (New Bullards Bar Reservoir, Englebright Lake, Yuba River Lower², Yuba River Middle Fork; Yuba River North Fork; and Yuba River South Fork).

New Bullards Bar Reservoir, Englebright Lake, Yuba River Lower, Yuba River Middle Fork, and Yuba River North Fork are within the Project area. Kanaka Creek, Deer Creek (Yuba County), and the Yuba River South Fork are outside the Project area but are immediate sources to waterbodies within the Project area.

Kanaka Creek flows into the Yuba River Middle Fork. Deer Creek (Yuba County) flows into the Yuba River Lower. Yuba River South Fork flows into Englebright Reservoir.

¹ Yuba River South Fork is defined as the South Fork of the Yuba River from Spaulding Reservoir to Englebright Reservoir.

² Yuba River Lower is defined as the Yuba River from Englebright Dam to the Feather River.

ATTACHMENT A:
COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

California Environmental Quality Act

Issuance of a certification is subject to the California Environmental Quality Act (CEQA). YCWA will act as the lead agency in satisfying CEQA requirements for relicensing of the Project, while the State Water Board will be a responsible agency. CEQA requires: an analysis of the environmental impacts of the Project, including cumulative impacts; the identification of mitigation measures that could minimize any significant effects on the environment; and a monitoring-reporting program to ensure compliance with adopted mitigation measures. As a responsible agency, the State Water Board will submit comments on YCWA's scoping and draft environmental documents, and will use the environmental document in making required CEQA findings, adopting CEQA mitigation measures, and informing issuance of any certification.

Yuba County Water Agency Water Rights

The Project is a multi-purpose project that operates to provide multiple benefits, including: flood control; water supplies for irrigation; municipal and domestic uses fishery benefits; and hydroelectric power production. YCWA holds multiple water rights issued by the State Water Board Division of Water Rights (Division) for Project operations. Table 1 provides a summary of YCWA's water rights.

Hydroelectric power is generated at New Colgate and Narrows 2 powerhouses under authorization from FERC and eight water right licenses issued by the Division. The total amount of water to be diverted from the sources (combined direct diversion under License 11565 (Application 5631), License 435 (Application 2197), License 436 (Application 3026), License 777 (Application 5004), License 3050 (Application 9516), License 5544 (Application 10282), License 11566 (Application 15205), and License 011567 (Application 15563) shall not exceed 3,766,300 acre-feet (ac-ft) per year. The total amount of water to be placed to beneficial use (total flow through both power plants consisting of combined direct diversion plus withdrawal from storage) under License 11565 (Application 5631), License 435 (Application 2197), License 436 (Application 3026), License 777 (Application 5004), License 3050 (Application 9516), License 5544 (Application 10282), License 11566 (Application 15205), and License 011567 (Application 15563) shall not exceed 4,223,300 ac-ft per year.

Water Right Permits 15026 (Application 005632), 15027 (Application 015204), and 15030 (Application 015574) (collectively Permits) authorize diversion of water for storage at New Bullards Bar Reservoir and direct diversion of water for consumptive use downstream. Per State Water Board Revised Decision 1644 (RD-1644), adopted on July 16, 2003 and as revised in accordance with State Water Board Orders WR 2008-0014 and 2008-0025, the Permits contain minimum instream flow requirements for the protection of fish and other public trust resources in the Yuba River downstream of Englebright Dam.

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

Table 1. Summary of YCWA's Water Rights

Application No./ Permit ID/ License ID	Priority Date and Face Amount acre- feet (ac-ft) or acre-feet per year (ac-ft/yr)	Source	Purpose of Use	Diversion and Storage in cubic feet per second (cfs) and acre-feet per year (ac-ft/yr)	Places of Use (Powerhouse)
A002197/001154/ 000435	2/11/1921 511,784.3 ac-ft	North Yuba River	Fish and Wildlife Preservation and Enhancement; Power	700 cfs @ North Yuba River 5,000 ac-ft/yr @ New Bullards Bar Reservoir	New Colgate
A003026/001354/ 000436	9/07/1922 10,000 ac-ft	North Yuba River	Fish and Wildlife Preservation and Enhancement; Power	10,000 ac-ft/yr @ New Bullards Bar Reservoir	New Colgate
A005004/002604/ 000777	4/30/1926 15,000 ac-ft	North Yuba River	Fish and Wildlife Preservation and Enhancement; Power	15,000 ac-ft/yr @ New Bullards Bar Reservoir	New Colgate
A005631/015025/ 011565	7/30/1927 3,528,027.8 ac-ft/yr	North Yuba River, Middle Yuba River, Yuba River, and Oregon Creek	Fish and Wildlife Preservation and Enhancement; Power	1,800 cfs @ North Yuba River; 240 cfs @ Oregon Creek; 810 @ Middle Yuba River; 1,800 cfs @ Yuba River; 490,000 ac-ft/yr @ New Bullards Bar Reservoir	New Colgate; Narrows 2

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

Table 1. Summary of YCWA's Water Rights

Application No./ Permit ID/ License ID	Priority Date and Face Amount acre- feet (ac-ft) or acre-feet per year (ac-ft/yr)	Source	Purpose of Use	Diversion and Storage in cubic feet per second (cfs) and acre-feet per year (ac-ft/yr)	Places of Use (Powerhouse)
A005632/015026/ Not Applicable	7/30/1927 1,159,000 ac-ft/yr	North Yuba River and Yuba River	Domestic; Irrigation; Fish and Wildlife Preservation and Enhancement; Recreational; Industrial; Other	43 cfs @ North Yuba River; 1,550 cfs @ Yuba River; 490,000 ac-ft/yr @ New Bullards Bar Reservoir	Not Applicable
A009516/006106/ 003050	3/01/1939 72,397.8 ac-ft/yr	North Yuba River	Fish and Wildlife Preservation and Enhancement; Power	100 cfs @ North Yuba River	New Colgate
A010282/008330/ 005544	9/12/19415 335ac-ft/yr	North Yuba River	Fish and Wildlife Preservation and Enhancement; Power	5,335 ac-ft/yr @ New Bullards Bar Dam	New Colgate; Narrows 2
A015204/015027/ Not Applicable	2/20/1953 246,000 ac-ft/yr	North Yuba River and Yuba River	Domestic; Irrigation; Fish and Wildlife Preservation and Enhancement; Recreational; Industrial; Other	240,000 ac-ft @ New Bullards Bar Reservoir; 6,000 ac-ft/yr @ Yuba River	Not Applicable

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

Table 1. Summary of YCWA's Water Rights

Application No./ Permit ID/ License ID	Priority Date and Face Amount acre- feet (ac-ft) or acre-feet per year (ac-ft/yr)	Source	Purpose of Use	Diversion and Storage in cubic feet per second (cfs) and acre-feet per year (ac-ft/yr)	Places of Use (Powerhouse)
A015205/015028/ 011566	2/20/1953 456,895 ac-ft/yr	North Yuba River, Middle Yuba River, and Yuba River	Power	800 cfs @ Yuba River; 245 cfs @ North Yuba River; 3,900 ³ ac-ft/yr @ New Bullards Bar Reservoir	New Colgate; Narrows 2
A015563/015029/ 011567	10/02/1953 614,206.4 ac-ft/yr	North Yuba River, Middle Yuba River, Yuba River, and Oregon Creek	Power	910 cfs @ Yuba River; 177,400 ⁴ ac-ft/yr @ New Bullards Bar Reservoir	New Colgate; Narrows 2
A015574/015030/ Not Applicable	10/9/1953 514,000 ac-ft/yr	North Yuba River, Middle Yuba River, Yuba River, and Oregon Creek	Domestic; Irrigation; Fish and Wildlife Preservation and Enhancement; Recreational; Industrial; Other	514,000 ⁵ ac-ft/yr @ New Bullards Bar Reservoir	Not Applicable

³ Includes off-stream storage at Our House Dam.

⁴ Includes off-stream storage at Our House Dam and Log Cabin Diversion Dam.

⁵ Includes off-stream storage from Out House Dam and Log Cabin Diversion Dam.

ATTACHMENT A:
COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

State Water Board Revised Decision 1644

In 1988, a coalition of fishery groups (the "United Groups") filed a complaint with the State Water Board regarding approximately 24 miles of aquatic habitat in the Yuba River extending from Englebright Dam downstream to the Yuba River's confluence with the Feather River near Marysville (lower Yuba River). The United Groups complainants contended that the instream-flow requirements in YCWA's Permits and the fish screening facilities at major diversions on the lower Yuba River did not provide an adequate level of protection for various species of fish. Following an initial investigation, the State Water Board deferred action on the complaint until after the California Department of Fish and Game's (now the California Department of Fish and Wildlife or CDFW) Lower Yuba River Fisheries Management Plan (DFG Plan) was received.

After receipt of the DFG Plan, the State Water Board scheduled a hearing on November 13, 1991, to consider the issues raised in the United Groups complaint and the CDFW recommendations. This hearing was postponed due to a lawsuit filed by YCWA in federal court seeking to enjoin the State Water Board from considering revisions to water temperature and instream flow requirements specified in YCWA's Permits. Following the court's denial of YCWA's request for a preliminary injunction, the State Water Board held 14 days of hearing in 1992 to receive testimony from interested parties on Yuba River fishery and water right issues.

After the 1992 hearings, the Division prepared a staff analysis of the record dated July 1994. A draft water right decision, dated April 28, 1996, was also prepared, but not acted upon by the State Water Board. Following distribution of the 1996 draft decision on February 10, 1999, the State Water Board scheduled a second evidentiary hearing to receive new evidence that became available following the 1992 hearing. The second hearing was postponed at the request of YCWA and CDFW in order to provide interested parties an opportunity to develop a settlement proposal to be presented to the State Water Board.

The parties were unable to agree on a joint settlement proposal and the State Water Board began the second evidentiary hearing on February 22, 2000. Among the subjects addressed at the hearing in 2000 were the potential benefits and impacts of the minimum flow requirements proposed in the 1996 draft decision, the alternative minimum flow requirements proposed by YCWA, the feasibility of complying with the maximum water temperature requirements in the 1996 draft decision, and the loss of fish in the vicinity of major water diversion facilities on the lower Yuba River.

Following 13 additional days of evidentiary hearing, a revised draft decision dated November 7, 2000, was distributed to the hearing participants. In accordance with provisions of the Bagley-Keene Open Meeting Act (Gov. Code § 11120 et seq.), the State Water Board also provided an opportunity for public comment on the proposed decision. The State Water Board received extensive comments at the State Water Board's monthly workshop meetings on December 4, 2000 and January 11, 2001. On March 1, 2001, the State Water Board adopted

ATTACHMENT A:
COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

Decision 1644 which includes several revisions to the November 7, 2000 draft decision. On May 17, 2001, the State Water Board adopted State Water Board Order WR 2001-08, which made additional revisions to Decision 1644 and dismissed several pending petitions for reconsideration.

Decision 1644 establishes revised instream flow requirements in the lower Yuba River and requires specified actions to provide suitable water temperatures for anadromous fish and reduce fish losses at water diversion facilities. However, due to evidence that it is not always feasible to provide water of suitable temperatures for protection of Chinook salmon and steelhead trout, this decision does not establish mandatory water temperature requirements beyond the requirements previously agreed to in a 1965 agreement between YCWA and CDFW.

Several lawsuits challenging adoption of Decision 1644 were consolidated under the title *Browns Valley Irrigation District vs. State Water Resources Control Board* (Yuba County, Superior Court Case No. CV PT 01-0000224). The Court concluded that the State Water Board should reconsider Decision 1644 in light of additional evidence that was not in existence at the time Decision 1644 was adopted. In accordance with provisions of Code of Civil Procedure section 1094.5(e) regarding consideration of new evidence, the Court remanded the matter to the State Water Board with instructions to vacate and reconsider Decision 1644 in light of the additional evidence.

On June 5 and 6, 2003, the State Water Board held a hearing to augment the record and consider the additional evidence specified by the Court. On July 16, 2003, the State Water Board filed State Water Board Order WR 2003-0016, *Vacating Water Right Decision 1644 and Adopting Revised Water Right Decision 1644 (Revised Decision 1644 or RD-1644) Following Consideration of Additional Evidence Specified by Yuba County Superior Court*.

RD-1644 established instream flow requirements for the protection of fish in the lower Yuba River between Englebright Dam and Marysville as conditions of YCWA's Permits. RD-1644 specified two sets of instream flow requirements applicable to YCWA's Permits: (1) interim flow requirements that were in effect between the date of original adoption of Decision 1644 in 2001 and implementation of long-term flow requirements; and (2) long-term flow requirements which were scheduled to come into effect on April 21, 2006. The long-term flow requirements were delayed to March 1, 2007 (State Water Board Order WR 2006-0009) to allow for the State Water Board's consideration of the proposed settlement agreement called the Lower Yuba River Accord (Yuba Accord). The effective date for the long-term flow requirements was delayed again to April 1, 2008 (State Water Board Order WR 2007-0002-DWR) to allow Yuba Accord pilot studies. The Yuba Accord flow regime was implemented in 2006 and 2007 as pilot projects, pursuant to State Water Board Orders WR 2006-0009 and WR 2007-0002-DWR, respectively.

ATTACHMENT A:
COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

On November 22, 2005, FERC approved an amendment to the Project license that contains flow fluctuation criteria (ramping criteria) similar to those specified in RD-1644. Minimum instream flows in the FERC license were not amended, nor required to be amended to implement flows specified in State Water Board Order RD-1644.

State Water Board Order WR 2008-0014

On April 27, 2007, YCWA filed a petition for modification of the Permits and a petition for long-term transfer of up to 200,000 ac-ft per year of water under Permit 15026. The petitions were submitted to enact changes to the Permits in order to allow implementation of the Yuba Accord. On March 18, 2008, the State Water Board issued State Water Board Order WR 2008-0014 which amended the flow requirements in RD-1644, and approved YCWA's petition for long-term transfer of water, subject to specified terms and conditions. The Yuba Accord consists of a Fisheries Agreement, Conjunctive Use Agreements, and a Water Purchase Agreement. The Fisheries Agreement is relevant to FERC, as the Fisheries Agreement requires YCWA to maintain instream flows in the lower Yuba River. The Fisheries Agreement (including Yuba Accord flow requirements) would be effective only until the Project receives a renewed long-term license from FERC.

The State Water Board recognized that the Yuba Accord is a set of carefully negotiated agreements among a wide range of interests. In order to enable the Yuba Accord to go into effect, and to fulfill the State Water Board's public trust obligations, the State Water Board incorporated the flows contained in Exhibit 1 of the Fisheries Agreement into RD-1644 with conditions, including conditions allowing for adaptive management. Unlike the Fisheries Agreement, which shall expire upon issuance of a new FERC license, RD-1644 does not have an expiration date. The signatories to the Fisheries Agreement explained that flows were intended as a starting point to develop instream flow requirements for the new Project license that could be modified based on future data collection. With anticipation that lower Yuba River flows could be altered, the State Water Board specifically reserved jurisdiction to reopen RD-1644, if appropriate, after FERC has completed the relicensing process for the Project if the "State Water Board determines such changes to be necessary or appropriate in light of any changes to the release, bypass, reservoir capacity, fish protection or related requirements in the Federal Energy Regulatory Commission license." (State Water Board Order WR 2008-0014, Term 4, pp. 58-59.)

The Yuba Accord was constructed to address prioritized biological considerations in the lower Yuba River. A group of experts assigned limiting factors to various salmonid life stages then, using professional judgement (in the absence of direct scientific evidence), ranked the biological considerations. The River Management Team (RMT) was established to collect scientific data to monitor the effects of the Yuba Accord flow regime per the Fisheries Agreement. The RMT ensures reasonable and prudent disbursement of funds based on specific prioritized goals for monitoring studies, actions, and activities. Primary areas of focus include:

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

- Monitor and evaluate the effectiveness of the implementation of the Yuba Accord, including flow schedules, Conference Year flows, and the Water Purchase Agreement;
- Evaluate the condition of fish resources in the lower Yuba River; and
- Evaluate the viability of lower Yuba River fall-run Chinook salmon and any subpopulations of the Central Valley steelhead and spring-run Chinook salmon Evolutionarily Significant Units (ESUs) that may exist in the Lower Yuba River.

On April 8, 2013, the RMT provided the draft Lower Yuba River Accord, River Management Team Interim Monitoring and Evaluation Report (draft Interim M&E Report) to help inform the FERC relicensing process. The draft Interim M&E Report addresses two over-arching goals:

- Evaluate whether implementation of the Yuba Accord maintains fish in "good condition" and promotes "viable salmonid populations" in the lower Yuba River.
- Identify and evaluate relationships between flows and water temperatures resulting from implementation of the Yuba Accord, and fish population and aquatic habitat attributes.

RMT findings and additional scientific evidence since implementation of the Yuba Accord flow regime are intended to inform the FERC relicensing process and if appropriate, changes to flows prescribed in RD-1644.

RMT Findings

The RMT produced the draft Interim M&E Report, dated April 8, 2013. The draft Interim M&E Report synthesizes data collected during Yuba Accord flow implementation (2006-2012) and made some comparison of pre-Yuba Accord and post-Yuba Accord years to evaluate the impacts of the Yuba Accord on salmonid populations.

Water Temperature Conditions

The draft Interim M&E Report included an evaluation of salmonid life stage-specific upper tolerance water temperature index values. The draft Interim M&E Report determined that the lower Yuba River thermal conditions from 2006 to 2012 were suitable for salmonids.

Chinook Salmon

The draft Interim M&E Report found that the Chinook salmon spawning season may be extended by approximately one to two weeks during Yuba Accord years as compare to pre-Yuba Accord years. Based on estimated Chinook salmon carrying capacity⁶ and spawning habitat-flow relationships, the draft Interim M&E Report suggests that the flow provided under the Yuba Accord does not appear to be limiting Chinook salmon spawning in the lower Yuba River.

⁶ The draft Interim M&E Report estimates the lower Yuba River could support up to a maximum of approximately 55,000 redds based on the assumption that one redd requires an area of 119.5 ft². The 119.5ft² redd area was calculated based on the amount of occupied and unoccupied area within a cluster of observed redds.

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

The draft Interim M&E Report provides juvenile Chinook salmon emigration monitoring data. Peak salmonid emigration is generally fairly early in the year (late December to early March) with the bulk of emigrants being small (30-49 mm in fork length). Size at emigration is an important factor that influences juvenile salmonid survival. The draft Interim M&E Report identified an extremely low Chinook salmon return rate to the Yuba River, on the order of 0.0004 percent⁷. Only 0.002 percent of tagged fish were recovered as adults in the ocean and rivers. The draft Interim M&E Report indicates that the low return rates suggest potential overwhelming out-of-basin mortality influences.

Juvenile Chinook salmon were generally found close to shore and rarely encountered in water deeper than 4.9 feet; however, juvenile Chinook salmon were found considerably further from shore in the Marysville Reach near the confluence of the Yuba and Feather rivers. The Marysville reach receives backwater effects from the Feather River and has an extended shallow sandy bar on which large woody material (LWM) collects. Juvenile salmonids are often associated with instream cover such as LWM. The draft Interim M&E Report cited Technical Memorandum 06-02, which found a total of 15 key pieces (i.e., pieces exceeding 25 inches in diameter and 25 feet in length and showing channel morphological influence) of LWM in all study sites with only a few of these key pieces located in the active channel that could provide structure for rearing juvenile salmonids.

Steelhead Trout

The draft Interim M&E Report found that a majority of the steelhead trout in the lower Yuba River exhibit predominantly a residential life history pattern, as opposed to a migratory life history pattern. The draft Interim M&E Report hypothesizes that steelhead trout residency may be attributed to the cooler water temperatures in the lower Yuba River. This reduction in phenotypic plasticity could reduce the long term persistence of steelhead trout in highly variable environments such as the Central Valley (McEwan 2001).

United States Fish and Wildlife Service Comments

In a letter dated, June 19, 2014, the United States Fish and Wildlife Service (USFWS) provided comments on the draft Interim M&E Report. USFWS commends the RMT for implementing the diverse set of studies since implementation of the Yuba Accord, but asserted that clear, beneficial effects of the Yuba Accord are not provided in the draft Interim M&E Report. Furthermore, USFWS provided suggestions to clarify the draft Interim M&E Report and address apparent data gaps and inconsistent conclusions. USFWS comments and concerns should be included in the evaluation of the draft Interim M&E Report and the Yuba Accord flow regime.

Additional Considerations

⁷ 708,750 juvenile Chinook salmon were caught in the lower Yuba River and tagged from 2003-2005. From 2002-2012, only 3 tagged salmon were recovered in the Yuba River as adults.

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

State Water Board staff appreciates the RMT's monitoring efforts and development of the draft Interim M&E Report. However, the draft Interim M&E Report, as the title states, should be interpreted as a draft document. Evaluation of the Yuba Accord flow regime on population-level effects to salmonids in the lower Yuba River using the draft Interim M&E Report may not be appropriate. RMT members from resource agency and non-governmental organizations expressed significant concerns regarding the draft Interim M&E Report and those concerns have yet to be incorporated into the document.

The draft Interim M&E Report provides data from Yuba Accord Schedules 1, 2, and 3 water year types. Yuba Accord Schedules 4, 5, 6, and Conference Years did not occur in the time period analyzed. Therefore, the complete Yuba Accord flow regime has not been evaluated and to interpret population-level findings in the draft Interim M&E Report as indicative of the entire Yuba Accord flow regime would be inappropriate.

Although the draft Interim M&E Report concluded that salmonid population trends in the lower Yuba River appeared similar to trends in other Central Valley Rivers during Yuba Accord years, this comparison was not statistically evaluated. A thorough analysis of juvenile salmonid growth, survival, and outmigration during Yuba Accord years remains unavailable despite significantly low pre-Yuba Accord return rates.

State Water Board staff anticipates that a final M&E Report⁸ will be included in the evaluation for Project certification. The final M&E Report should address resource agency and non-governmental organization concerns and data collected from Schedule 5 and 6 years that have since occurred.

Supplementary Scientific Evidence and Evaluation of the lower Yuba River since Implementation of the Yuba Accord

Scientific studies and reports, outside the RMT process, are also available, which provide additional information to evaluate the Yuba Accord flow regime and lower Yuba River conditions.

The *Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-run Chinook Salmon and Central Valley Spring-run Chinook Salmon and the Distinct Population Segment of California Central Valley Steelhead (NMFS 2014)* identifies and prioritizes specific recovery actions to benefit anadromous salmonids in the Yuba River⁹. The following are NMFS recovery actions for the Yuba River that could be addressed through Project operations and/or protection, mitigation, or enhancement measures (PM&E Measures)

- Develop and implement a program to reintroduce spring-run Chinook salmon and steelhead to historic habitats upstream of Englebright Dam. The program should include

⁸ According to the draft Interim M&E Report, a final M&E Report was anticipated to be released by 2016.

⁹ Section 5.8.7 Yuba River Recovery Actions, Table 5-19 pp. 253-259.

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

feasibility studies, habitat evaluations, fish passage design studies, and a pilot reintroduction phase prior to implementation of the long-term reintroduction program.

- Improve spawning habitat in the Englebright Dam Reach (Englebright Dam [RM 24] downstream to the Deer Creek confluence [RM 23]) through habitat rehabilitation and a long-term gravel injection program (Pasternack 2009).
- Develop programs and implement projects that promote natural river processes, including projects that add riparian habitat and instream cover. Develop and implement a large woody material restoration program along the lower Yuba River utilizing sources of wood that enter upstream reservoirs.
- Increase floodplain habitat availability in the lower Yuba River.
- Create and restore side channel habitats to increase the quantity and quality of off channel rearing and spawning areas in the Yuba River.
- Implement flow fluctuation and ramping rates found to be protective of embryos and juveniles.
- Evaluate whether salmonid straying between the Feather and Yuba rivers can be minimized through flow management.
- Identify the benefits, risks, and costs associated with various techniques and locations for spatially segregating spring-run Chinook salmon and fall-run Chinook salmon during spawning in the Yuba River. If the benefits sufficiently outweigh the risks and costs, then implement a project to segregate spring- and fall-run Chinook salmon.

The *Rehabilitation Concepts for the Parks Bar to Hammon Bar Reach of the Lower Yuba River* (CBEC et al. 2010) and *Hydrologic and Geomorphic Analysis to Support Rehabilitation of the Lower Yuba River, Parks Bar to Marysville* (CBEC 2013) reports were funded by USFWS to support the development of lower Yuba River enhancement projects for juvenile salmonids. The CBEC 2010 report provides a foundation for planning enhancement projects using riparian planting, creating secondary channels and backwaters, enhancing floodplains, providing in-channel habitat, and additional rehabilitation elements. Potential rehabilitation projects were also identified.

The CBEC 2013 report further develops the rehabilitation projects identified in the CBEC 2010 report and expands the territory of potential locations. The CBEC 2013 report identifies the following habitat enhancement methods for specific sites on the lower Yuba River:

1. Floodplain grading – lower floodplain elevation to increase the frequency and duration of inundation to provide functional juvenile salmonid rearing habitat.
2. Riparian vegetation planting - planting predominantly cottonwood trees to increase structural complexity and species diversity.
3. LWM placement - placing LWM in the active channel to influence hydraulic and geomorphic complexity in the channel, and enhance habitat for juvenile salmonid rearing and macroinvertebrates.

ATTACHMENT A:
COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

The CBEC 2013 Report describes 18 specific site locations in the lower Yuba River from Parks Bar to Marysville to implement enhancement methods listed above. Each site was selected as a candidate for rehabilitation based on various factors relating to the success, longevity, and applicability of the enhancement methods.

Inundation Area for Salmonid Rearing and Alternative Flow Regimes for the Lower Yuba River (Reedy 2017)

The Reedy 2017 report analyzed hydrologic regimes in the lower Yuba River using United States Army Corp of Engineers (USACE) Hydrologic Engineering Center's Ecosystem Functions Model (HEC-EFM) tool, which is designed for analysis of how flow regimes meet ecological parameters of seasonality, duration, and frequency. Reedy (2017) found, as compared to without Project¹⁰, "for 67 percent of years, which is most relevant to salmonid populations, Yuba Accord flows reduced inundated area in bank and floodplain zone by 38-50 percent for minimum durations of 3, 21, and 60 days." It found that the Project has significant impacts on the availability and abundance of juvenile salmonid rearing habitat.

Hammon Bar Riparian Enhancement Project

The Hammon Bar Riparian Enhancement Project, implemented by the South Yuba River Citizens League (SYRCL), was designed to evaluate methods and document potential benefits of riparian planting in the lower Yuba River floodplain. Thousands of cottonwood and willow cuttings were planted on Hammon Bar in the lower Yuba River in 2011 and 2012 (SYRCL 2013).

Monitoring data from 2011 to present supports the feasibility of riparian plantings in the lower Yuba River and associated habitat benefits (R. Hutchinson, SYRCL, 2017, pers. comm.) Initial plantings continue to grow and persist, despite significantly high flows (up to 95,000 cfs at Marysville) in the lower Yuba River in early 2017. Additionally, the plantings have trapped LWM migrating downstream and facilitated fine sediment deposition. Natural cottonwood seedling establishment has been documented on the newly deposited fine sediment (R. Hutchinson, SYRCL, 2017, pers. comm.). The results of the Hammon Bar Enhancement Project identify riparian planting as a valuable habitat enhancement method that supports natural processes (e.g., riparian recruitment and sediment deposition) and increases riverine complexity and cover for rearing juvenile salmonids.

¹⁰ Without Project refers to lower Yuba River flow conditions if the YRDP did not exist but other dams, diversions, and hydropower facilities in the watershed operated normally (i.e., with PG&E's Drum-Spaulding Project).

ATTACHMENT A:
COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

General Comments

Comment 1: Introduction

The Yuba River Development Project has existing direct and cumulative effects on water resources, aquatic resources, and threatened and endangered species. Additionally, continued operations under changed conditions would have potential effects to these resources. The segment of the Yuba River upstream of Englebright Dam includes beneficial use designations for cold freshwater habitat, cold water spawning habitat, and wildlife habitat. Established dams segment the North Fork of the Yuba River (New Bullards Bar Dam), Oregon Creek (Log Cabin Diversion Dam), and Middle Fork of the Yuba River (Our House Diversion Dam). These dams are barriers to upstream migration of fishes and amphibians such as rainbow trout and foothill yellow-legged frogs, which can reduce population size, species resistance, species resilience, and genetic variability. Additionally, the diversion of water from the Middle Yuba River through the Lohman Ridge Diversion Tunnel and from Oregon Creek through the Camptonville Diversion Tunnel modifies the natural flow regime downstream of the diversion dams. Natural flow regimes have been linked to biotic integrity, geomorphic diversity, and habitat benefits.

The segment of the Yuba River downstream of Englebright Dam (lower Yuba River) includes beneficial use designations for cold freshwater and spawning habitat. The current upstream extent of spring-run Chinook salmon migration in the Yuba River is Englebright Dam. Spring-run Chinook salmon's life history includes summer adult holding periods and year-round juvenile rearing in the Yuba River. This species depends on year-round adequate flows and temperature regimes to successfully persist in the Yuba River. Regulated flows from the Project have attributed to river incision and decreased floodplain connectivity, both contributing to the loss of riparian recruitment and juvenile salmonid rearing habitat. Furthermore, New Bullards Bar operations have a significant effect on water temperature in the lower Yuba River (Technical Memorandum 02-01).

Specific Comments

Comment 1: General Process

State Water Board staff appreciates the collaborative nature of YRDP relicensing discussions. Interested stakeholders and YCWA have contributed a significant level of effort and time to reach agreement on potential FERC license conditions.

On April 27, 2014, YCWA submitted an Application for New License Major Project – Existing Dam (Final License Application or FLA). Since submittal of the FLA, YCWA and interested stakeholders have continued to negotiate potential terms of the new FERC license. On October 27, 2016, YCWA filed a letter with FERC documenting its intent to amend the FLA with potential agreed-upon Forest Service Federal Power Act (FPA) Section 4(e) conditions (potential 4(e) conditions). The United States Forest Service (USFS) filed a letter with FERC, on November 7, 2016, supporting the potential 4(e) conditions outlined in YCWA's October 27, 2016 letter. On

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

November 4, 2016 and on December 1, 2016, YCWA filed a letter with FERC documenting potential agreed-upon FPA 10(j) recommendations (potential 10(j) recommendations). CDFW filed a letter with FERC, on December 19, 2016, supporting the potential 10(j) recommendations outlined in YCWA's December 1, 2016 letter. YCWA filed with FERC an amended FLA (Amended FLA) on June 5, 2017.

The Amended FLA contains and references various measures that have been discussed and negotiated between stakeholders and YCWA. This was done in an effort to develop FERC license conditions that would address USFS, USFWS, and CDFW resource objectives in the context of YCWA's interests and capabilities. State Water Board staff has participated in the discussions to provide guidance regarding the State Water Board's regulatory requirements, but did not approve or agree to any measures. State Water Board encourages settlement agreements and the State Water Board's staff generally sees positive benefits in the agreed-upon potential 4(e) conditions and potential 10(j) recommendations.

However, the State Water Board has not evaluated the Project under CEQA or completed its analysis of water quality. The State Water Board cannot prejudge YCWA's request for certification in connection to the relicensing; therefore, it would be inappropriate for the State Water Board to enter into any settlement agreements or provide any potential certification conditions. An evaluation of impacts under CEQA and potential impacts to water quality must be completed before the State Water Board can issue a certification and associated conditions. The State Water Board is not bound by the agreed-upon terms, although it is cognizant of the benefit of settlement agreements in addressing complex, multi-benefit water decisions.

In order to streamline implementation plans that would normally require post-licensing resource agency consultation, State Water Board staff developed Attachment B - Preliminary Condition 9 to avoid repeating agency consultation. Preliminary Condition 9 does not require the Licensee to consult with resource agencies on specific implementation plans if that implementation plan has been discussed and agreed to by YCWA and resource agencies during the relicensing process.

Comment 2: Non-Project Impacts to the Project area

Similar to many rivers along the Sierra Nevada Mountain Range in California, significant alterations to the Yuba watershed from non-Project related factors are apparent. To evaluate past, current, and future Project impacts to beneficial uses of water in the Yuba River watershed, and for consideration in evaluating cumulative impacts, non-Project related impacts to the Project area are identified below.

Upstream of Englebright Dam

Upstream of New Bullards Bar Dam, hydropower influences on the North Yuba River are limited to the South Feather Hydroelectric Project (SFHP) (FERC Project No. 2088) and Deadwood Creek Project powerhouse (FERC Project No. 6780). South Feather Water and Power Agency

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

owns and operates SFHP's Slate Creek Diversion Dam on Slate Creek, a tributary to the North Yuba River, for hydropower and water supply. Per water right license 010940, South Feather Water and Power Agency can divert 34,200 ac-ft of water per year for storage at Slate Creek Diversion Dam. The Deadwood Creek Project powerhouse is located on the shoreline of New Bullards Bar Reservoir. The Deadwood Creek Project is owned and operated by Hydro Sierra and does not have any storage reservoirs or out-of-basin water exports.

The Middle Yuba River and South Yuba River contain significant hydropower and water diversion infrastructure. The Drum-Spaulding Project (FERC No. 2310) is, in part, located on the South Yuba River, and consists of 29 reservoirs, 12 powerhouses, and three diversion dams. The Drum-Spaulding Project is owned and operated by Pacific Gas and Electric Company (PG&E) for hydropower. The Yuba-Bear Project (FERC No. 2266) is, in part, located on the Middle Yuba River and South Yuba River, and consists of nine on-stream reservoirs, three off-stream impoundments, four powerhouses, and two diversion dams. The Yuba-Bear Project is owned and operated by Nevada Irrigation District for hydropower and water supply. Significant amounts of water are diverted and exported out of the Yuba River watershed by the Drum-Spaulding and Yuba-Bear projects.

Downstream of Englebright Dam

The YRDP is the most downstream hydropower facility in the Yuba River watershed. However, reservoirs and water diversions used for other hydropower power projects and water use purposes are located on Deer Creek and Dry Creek, which enter the Yuba River below Englebright Dam. Additionally, water is diverted just upstream of Daguerre Point Dam on the lower Yuba River to eight YCWA Member Units (i.e., water districts).

The Yuba River downstream of Englebright Dam has experienced significant alteration due to non-Project related factors that, although historic, continue to influence biotic and hydraulic processes in the lower Yuba River. The alterations are discussed below.

Gold Mining

Hydraulic gold mining in the mountains of the Yuba River Basin released significant amounts of sediment into the Yuba River watershed. James et al. (2009) estimated that the volume of sediment production as a result of hydraulic mining was 684 million cubic yards in the Yuba River Basin, with residual deposit in the lower Yuba River at over 250 million cubic yards as of 1917. The lower Yuba River was estimated to have aggraded approximately 18 meters at Parks Bar and approximately 5 or 6 meters near Marysville. The rapid aggradation dramatically altered the morphology of the lower Yuba River. In 1884, the Sawyer Decision, *Woodruff v. North Bloomfield Gravel Mining Co.* (C.C.D.Cal. 1884) 18 Fed. 753, prohibited the discharge of debris in the Sierra Nevada regions. By the early 20th century, upstream mining debris was depleted and the Yuba River has since been in the status of degradation and incision.

ATTACHMENT A:
COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

Debris Collection and Flood Control Facilities

As a result from the influx of mining debris, the Yuba River was a highly unstable channel that led to severe flooding. To trap mining debris and reduce flooding, the Debris Commission (now USACE) built Daguerre Point Dam in 1906 on river-mile¹¹ 11.4 and Englebright Dam in 1941 on river-mile 23. Though YCWA does not own Daguerre Point Dam or Englebright Dam, these facilities are critical infrastructure in operation of the multi-use Project. The dams themselves affect downstream beneficial uses.

Daguerre Point Dam is 24 feet high. The impoundment is full of sediment and allows LWM, fine sediments, and some cobble to pass. Daguerre Point Dam has a fish ladder on the north and south side, and has been identified by USFWS as a partial barrier¹² to salmonid migration. Daguerre Point Dam is the upstream limit to sturgeon, striped bass, and American shad migration on the Yuba River.

Englebright Dam is 260 feet high. Englebright Dam creates Englebright Lake, an approximately 9-mile long impoundment with a surface area of 815 acres. Englebright Dam restricts coarse sediment transport and inhibits the transport of fine sediment in the lower Yuba River. Buoyant LWM can pass Englebright Dam. Englebright Dam is the upstream limit to salmonid migration in the Yuba River.

Levees

Approximately seven miles of levees were constructed from the 1860s through the 1960s around the town of Marysville and on the north and south banks of the lower Yuba River to prevent flooding. The levees reduced the sinuosity and floodplain width of the lower Yuba River.

Training Walls

In the early 20th century, cobble training walls were created by dredging activities. Training walls 20 to 75 feet tall lined approximately fifteen miles of both the north and south side of the lower Yuba River (Adler 1980). Below Daguerre Point Dam a shorter, third training wall was created between the trainings walls on the north and south side of the lower Yuba River. The training walls promote scour and the formation of a permanent, stable channel, which reduces floodplain width and connectivity as well as river sinuosity.

¹¹ River-mile is the length of river, in miles, from the confluence of the Feather River and the Yuba River to the location of interest.

¹² Daguerre Point Dam has a history of failures and blockages at its fish ladders. Daguerre Point Dam may also delay spring-run Chinook salmon migration as a result of extended holding periods below Daguerre Point Dam.

**ATTACHMENT A:
COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)**

Comment 3: Project Impacts on Lower Yuba River Resilience

The Project reduces the resilience of the lower Yuba River to recover from certain types of historic, and potentially future, disturbances. New Bullards Bar Dam has a storage capacity of 966,103 ac-ft and stores water from the Middle Yuba River, Oregon Creek, and the North Yuba River. New Bullards Bar Dam and Englebright Dam¹³ capture winter storm freshets and reduce storm flows in the lower Yuba River.

Frequent flood flows are important for geomorphic processes, biotic cues (i.e., emigration and immigration), and riverine productivity (i.e., rearranges substrate, connection to floodplain habitat). CBEC et al. (2010) analyzed a 106-year record period of lower Yuba River discharge data to compare flood magnitude from 1904-1969 (i.e., before New Bullards Bar Dam construction) and from 1970-2009 (i.e., after New Bullards Bar Dam construction). The magnitude of flood flows that occur or is exceeded every 1.5 years was reduced by 67 percent (i.e., from 20,100 cfs to 6,700 cfs) at the Smartsville gage location after construction of New Bullards Bar Dam. The magnitude of flood flows with a 5 year return period was reduced by 40 percent (i.e., from 61,400 cfs to 36,900 cfs).

Additionally, regulated Project flows confound the lower Yuba River's ability to recover from historic disturbances (i.e., as discussed in Comment 2). Instream flows below 4,130 cfs¹⁴ in the lower Yuba River are regulated by YCWA. Regulated flows promote channelization that restricts river heterogeneity, reduces channel migration, and prevents floodplain connectivity. CBEC (2010) hypothesized that limited woody riparian plant diversity is due, in part, to alternation of the natural flow regime and channel incision, both of which are influenced by regulated flows.

Episodically; however, the lower Yuba River does experience very large flows beyond the Project's capacity to control. CBEC et al. (2010) found that larger, less frequent flood flows (i.e., 20 and 50 year return periods) do not show clear change between the pre and post New Bullards Bar Dam construction periods. Large flows influence channel and floodplain morphology and supply the lower Yuba River with fine sediment for riparian recruitment. In 2017, the large winter flows eroded a portion of the middle training wall and deposited fine sediment throughout the lower Yuba River.

Comment 4: Minimum Instream Flows

Flow regimes consist of flow magnitude, timing, duration, frequency, and rate of change. The natural flow regime is a critical component that supports the Clean Water Act objective to

¹³ Englebright Dam water elevation is controlled, in part, by YRDP operations upstream and at Narrows 2 powerhouse.

¹⁴ Narrows 2 powerhouse, owned and operated by YCWA, has a maximum flow capacity of 3,400 cfs. Narrows 1 powerhouse, owned and operated by PG&E, has a maximum flow capacity of 730 cfs. YCWA determines the flow rates for Narrows 1 and Narrows 2 for each day (Narrows 1 and Narrows 2 Coordinated Operations Plan, filed with FERC on April 19, 2016).

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

"restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (Section 101(a)). Project facilities and operations inherently alter the natural flow regime. YCWA should, to the extent practical, develop a flow regime that promotes the Clean Water Act objective and meets Basin Plan criteria.

YCWA, in consultation with resource agencies, developed streamflow protocols to reduce Project impacts to the beneficial uses of water in the Middle Yuba River below Our House Diversion Dam and in Oregon Creek below Log Cabin Diversion Dam (Proposed Condition AR1). Controlled Project spills at Our House Diversion Dam (Proposed Condition AR2), Log Cabin Diversion Dam (Proposed Condition AR12), and New Bullards Bar Dam (Proposed Condition AR4) were also developed and agreed to by YCWA and relevant resources agencies. State Water Board staff is generally in support of Proposed Conditions AR1, AR2, AR4, and AR12. However, Proposed Condition AR4 does not discuss flows through the proposed New Bullards Bar Dam Auxiliary Flood Control Outlet (Flood Control Outlet). If constructed, flows through the Flood Control Outlet should be considered a spill event and included in Proposed Condition AR4.

YCWA did not reach agreement with resources agencies on streamflow protocols for the North Yuba River below New Bullards Bar Dam (Proposed Condition AR10), and the Yuba River below Narrows 2 Powerhouse (Proposed Condition AR3). The proposed conditions are discussed below.

North Yuba River below New Bullards Bar Dam (Proposed Condition AR10)

The current FERC license requirement for instream flow in the North Yuba River below New Bullards Bar Dam (NBB Reach) is five cfs throughout the year, which is significantly lower than without-Project flows. A minimum five cfs streamflow in the North Yuba River below New Bullards Bar Dam may not be adequate to protect the beneficial uses below New Bullards Bar Dam.

The habitat in the NBB Reach is heavily altered. YCWA surveyed the NBB Reach for aquatic benthic macroinvertebrates (BMI) in 2012 using California Surface Water Ambient Monitoring Plan (SWAMP) methods (data and analysis presented in Technical Memorandum 03-01). Multi-metric index (MMI) scores and Index of Biotic Integrity (IBI) scores were calculated to assess ecological impacts of hydropower on BMI assemblages. Although the reliability of the calculated indices scores was low¹⁵, the IBI score was 21 and MMI was 16 and classified per MMI standards¹⁶ as poor condition.

¹⁵ Only 325 organisms were collected per grid, which is below the standard minimum of 500 organisms per grid used for IBI and MMI scoring.

¹⁶ The MMI score assesses the ecological structure and function of streams. MMI scores are classified as follows: 0 to 32 are poor, 33 to 66 are fair, and 67 to 100 are good.

ATTACHMENT A:
COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

YCWA also surveyed the NBB Reach for fish populations in 2012 and 2013 (data and analysis presented in Technical Memorandum 03-08). Rainbow trout population and biomass estimates in the NBB Reach were substantially lower than biomass estimates of average North Sierra streams of this width (Gerstung 1973). Additionally, the presence of large numbers of nonnative smallmouth bass (2,300 fish/mile in 2012 and 181 fish/mile in 2013) suggests habitat disturbance. Foothill yellow-legged frogs and western pond turtles were not observed in the NBB Reach (Technical Memorandum 03-04 and Technical Memorandum 03-06, respectively).

Current flow and habitat conditions in the NBB Reach do not appear to support the native fauna. The Amended FLA includes Proposed Condition AR10, *Maintain Minimum Streamflow below New Bullards Bar Dam*.

Proposed Condition AR10 may not be protective of resources in the NBB Reach. Proposed Condition AR10 provides flows between 10 to 25 percent of adult rainbow trout weighted usable habitat. Minimal adult habitat and limited spawning gravel does not support the viability of rainbow trout in the NBB Reach. Additionally, Proposed Condition AR10 may not provide tolerable water temperatures for rainbow trout downstream of New Bullards Bar Dam.

Multiple flow regimes were proposed by various stakeholders during relicensing negotiations. State Water Board staff suggests that the Commission evaluate a range of flows in the North Yuba River below New Bullards Bar Dam, as shown in Table 2.

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

Table 2. Range of minimum streamflows (cfs) for the North Yuba River downstream of New Bullards Bar Dam by month and water year type. Water year type is defined in Proposed Condition WR2.

Month	Wet Water Year	Above Normal Water Year	Below Normal Water Year	Dry Water Year	Critically Dry Water Year
October 1 - 30	13-90	13-90	13-90	13-90	7-90
November 1-30	13-90	13-90	13-90	13-90	7-90
December 1 - 31	13-90	13-90	13-90	13-90	7-90
January 1 - 31	13-90	13-90	13-90	13-90	7-90
February 1- 29	13-100	13-100	13-100	13-100	7-100
March 1 - 31	11-250	12-120	13-120	13-120	7-120
April 1 - 30	5-300	5-220	5-140	5-140	5-140
May 1- 31	5-300	5-220	5-120	5-120	5-120
June 1 - 30	5-300	5-220	5-120	5-120	5-120
July 1 - 31	11-150	12-100	13-100	13-100	7-100
August 1 - 31	11-90	12-90	13-90	13-90	7-90
September 1— 30	11-90	12-90	13-90	13-90	7-90

Yuba River below Narrows 2 (Proposed Condition AR3)

Current instream flows required in the Yuba River below Narrows 2 Powerhouse were developed as part of the Fisheries Agreement in the Yuba Accord and incorporated into YCWA's water right Permits (as previously described).

The Amended FLA includes Proposed Condition AR3, *Maintain Streamflows Downstream of Narrows 2 Powerhouse and Narrows 2 Full Bypass*. Proposed Condition AR3 includes Yuba Accord flow schedules and associated minimum instream flows with an alteration to the flow regime for Conference Years. Specifically, the Conference Year flow schedule would be replaced with the minimum flow schedules in Article 33 of YCWA's existing FERC License, issued in 1963 and amended in 1966.

Proposed Condition AR3 may not achieve a level of Yuba River protection and enhancement adequate to offset Project impacts. The Amended FLA identified the following "high stressors"

ATTACHMENT A:
COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

to salmonids that could be ameliorated by the flow regime: floodplain habitat availability, natural river morphology and function, and fry and juvenile rearing physical habitat structure. Proposed Condition AR3 does not adequately address these stressors.

Further analysis and coordination of the timing and magnitude of flows in the lower Yuba River could benefit all life stages of spring-run Chinook salmon, fall-run Chinook salmon, and steelhead trout. Specific components of the flow regime that could be altered to offset Project impacts are discussed below.

Spring Flows

Project operations create an unnatural spring hydrograph in wetter water year types. Under current operations during wet years, the Project releases high flows in winter to meet the USACE 170,000 ac-ft flood storage reserve space in New Bullards Bar Reservoir from September 15 through March 31 each year. Once flood storage requirements are lifted on April 1 each year, YWCA begins to store water in New Bullards Bar Reservoir, dropping instream flows to minimum levels. Minimum levels are quickly ramped up in May and June for water deliveries. The unnatural spring hydrograph greatly reduces floodplain inundation frequency and duration, adversely affecting juvenile salmonid rearing and riverine productivity. Proposed Condition AR3 does not provide a natural hydrograph in spring during wet years.

Spring Pulse Flows

As discussed in the draft Interim M&E Report, the ratio of lower Yuba River to Feather River water temperature and flow magnitude has a significant influence on the number of spring-run Chinook salmon that enter the lower Yuba River. A pulse flow in spring during drier water year types may cue spring-run Chinook salmon to enter the Yuba River. A spring pulse flow may also provide a cue for out-migrating juvenile salmonids.

Winter Pulse Flows

New Bullards Bar Dam and Englebright Dam capture winter storm freshets and reduce storm flows in the lower Yuba River. Winter pulses clean spawning gravels (i.e., removes summer algae growth) and provide cues for adult steelhead trout migration and juvenile spring-run Chinook salmon emigration. Proposed Condition AR3 does not address the loss of winter pulse flows as a result of Project operations.

During relicensing negotiations, YCWA was concerned that a potential winter pulse flow would require a significant amount of water to be released to meet the flow requirement of RD 1644 Term 3(e). In regards to a potential winter pulse flow requirement, RD-1644 Term 3(e) states:

"During the period from November 1 to March 31, permittee shall not reduce the flow downstream of Englebright Dam to less than the minimum streamflow release or bypass

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

established under (d)¹⁷ above; or 65 percent of the maximum flow release or bypass that has occurred during that November 1 to March 31 period; or the minimum streamflow requirement that would otherwise apply, whichever is greater.”

A winter pulse flow may occur in the November 1 through March 31 timeframe. If winter pulse flows become a requirement of the Project FERC license, minimum flow requirements per RD-1644 would be increased through March 31. RD-1644 Term 3(e) was developed without consideration of a winter pulse flow term. However, the State Water Board anticipated revisions to RD-1644 and specifically reserved jurisdiction to reopen State Water Board WR 2008-0014 and RD-1644 in light of any changes to the release, bypass, reservoir capacity, fish protection or related requirements in the new FERC license. Such a proceeding would be the opportunity to address concerns regarding water storage.

Conference Years

In Conference Years per the Yuba Accord, YCWA would meet with the Member Units and the parties to the Fisheries Agreement and the Water Purchase Agreement, to develop a strategic management plan to balance water supply and lower Yuba River instream flow needs for that year. This includes the release of any supplemental flows recommended by the RMT and approved by the State Water Board Deputy Director for Water Rights (Deputy Director). The Ecological Group (Proposed Condition GEN1) serves as the new FERC license-consultation group. For Conference Years, the Ecological Group should meet with the Licensee to determine potential additional instream flows for the purposes of fisheries resources benefit.

Proposed Flows

Multiple flow regimes have been proposed during the relicensing process. In addition to the flow regime in Proposed Condition AR3, State Water Board staff suggests that the Commission evaluate a range of flows for the lower Yuba River in the NEPA document, as shown in Table 3 and Table 4. Table 3 presents minimum instream flows that address specific components of the natural flow regime (e.g., spring flows, spring pulse flows, winter pulse flows), as discussed above.

¹⁷Per RD-1644 Term 3(d): “During the period from September 15 to October 31, permittee shall not reduce the flow downstream of Englebright Dam to less than 55 percent of the maximum release or bypass level that has occurred during that September 15 to October 31 period or the minimum streamflow requirement that would otherwise apply, whichever is greater.”

**ATTACHMENT A:
COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)**

Table 3. Minimum streamflows (cfs) for the lower Yuba River measured at Marysville (USGS Gage 11421000) by month and water year type. Water year types are defined in Proposed Condition WR3.

Water Year Type	1	2	3	4	5	6	Conference
Oct-01	500	500	500	400	400	350	350
Nov-01	500	500	500	500	500	350	350
Dec-01	500	500	500	500	500	350	350
Jan-01	500	500	500	500	500	350	350
Feb-01	500	500	500	500	500*	350**	350***
Mar-01	700	700	500	500	500	350	350
Mar-23	3500	700	500	500	500	350	350
Apr-01	3500	2500	900	600	500	350	300
Apr-16	3500	2500	900	900	600	500	300
May-01	2000	1400	1150	900	850	750	395
May-16	2000	1000	900	600	400	400	300
Jun-01	1500	800	500	400	400	350	245
Jun-16	1500	500	500	400	400	350	150
Jul-01	700	500	500	400	400	350	150
Aug-01	600	500	500	400	400	350	150
Sep-01	500	500	500	400	400	350	150
Oct-01	500	500	500	400	400	350	350

* includes pulse flow of February 1 through February 2: 3,000 cfs, February 3: 1,850 cfs, February 4: 1,000 cfs, February 5: 750 cfs, February 6: 600 cfs.

** includes pulse flow of February 1 through February 2: 2,850 cfs, February 3: 1,700 cfs, February 4: 850 cfs, February 5: 600 cfs, February 6: 450 cfs.

*** includes pulse flow of February 1 through February 2: 2,745 cfs, February 3: 1,595 cfs, February 4: 745 cfs, February 5: 495 cfs, February 6: 345 cfs.

Table 4 presents lower Yuba River streamflow regime that preserves the Yuba Accord benefits in drier water year types and provides greater flows in wetter water year types.

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

Table 4. Minimum streamflows (cfs) for the lower Yuba River as a percent of unimpaired runoff and flow measured at Marysville(USGS Gage 11421000). Water year types are defined in Proposed Condition WR3.

Water Year Type	1	2	3	4	5	6	Conference
Oct-01	500	500	500	400	400	350	350
Nov-01	500	500	500	500	500	350	350
Dec-01	500	500	500	500	500	350	350
Jan-01	500	500	500	500	500	350	350
Feb-01	75% or 500*	40% or 500**	500	500	500	350	350
Mar-01	75% or 700*	40% or 700**	500	500	500	350	350
Mar-23	75% or 700*	40% or 700**	500	500	500	350	350
Apr-01	75% or 1000*	40% or 700**	700	600	500	350	300
Apr-16	75% or 1000*	40% or 800**	700	900	600	500	245
May-01	75% or 2000*	40% or 1000**	900	900	600	500	245
May-16	75% or 2000*	40% or 1000**	900	600	400	400	245
Jun-01	75% or 1500*	40% or 800**	500	400	400	300	245
Jun-16	75% o 1500*	40% or 500**	500	400	400	150	150
Jul-01	700	500	500	400	400	150	150
Aug-01	600	500	500	400	400	150	150
Sep-01	500	500	500	400	400	350	150
Oct-01	500	500	500	400	400	350	350

* 75 percent of unimpaired flow or Yuba Accord flow requirement, whichever is greater. Maximum percent of unimpaired flow requirement is 10,000 cfs.

** 40 percent of unimpaired flow or Yuba Accord flow requirement, whichever is greater. Maximum percent of unimpaired flow requirement is 10,000 cfs.

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

Additionally, the State Water Board is in the process of updating the *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Bay-Delta Plan) to protect beneficial uses in the Bay-Delta watershed. The Bay-Delta Plan is being updated in two separate phases. Phase I addresses flow requirements in the San Joaquin River and salinity requirements in the southern Delta. Phase II addresses, in part, new and modified requirements for inflows from tributaries to the Sacramento River (including the Yuba River) and Delta outflow. Phase II proposed amendments are in development; however, the Scientific Basis Report prepared in support of Phase II analyzes flows in a range of 35 to 75 percent of unimpaired flow year round from major tributaries to the Sacramento River (including the Yuba River). State Water Board staff suggests that the Commission consider evaluating a minimum of two flow regimes within the range of 35 to 75 percent of unimpaired flow year round (e.g., 35 to 45 percent of unimpaired flow, 45 to 65 percent of unimpaired flow, etc.), measured at Marysville. Additional information regarding the State Water Board's Phase II update of the Bay-Delta Plan is available at:

http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/comp_review.shtml.

If the substitute environmental document for Phase 2 of the State Water Board's Delta Plan proceedings is released prior to FERC's determination of alternatives, the alternatives in this document should also help inform which ranges of flow would be most helpful for study.

Additional Habitat Protection, Enhancement, and Mitigation Measures

Flows alone may not be adequate to provide the necessary conditions to support viable fishery populations in the lower Yuba River. The draft Interim M&E Report identified extremely low salmonid return rates and small size at juvenile Chinook salmon emigration. Habitat enhancement actions that create higher quantity and quality of juvenile salmonid rearing habitat may be needed to offset Project impacts. Additional habitat could be achieved through streambank grading to increase wetted area and floodplain connectivity. Higher quality habitat could be achieved through riparian planting, LWM placement, and off-channel (e.g., side channels and swales) habitat development. Implementation and effectiveness monitoring would likely be developed for any habitat enhancement measure(s). Potential habitat enhancement is included in Attachment B - Preliminary Condition 3.

Comment 5: Lower Yuba River Riparian Corridor and Ramping Rate

YCWA, to an extent, regulates ramping rates in the lower Yuba River through powerhouse operations and reservoir storage. Ramping rates can influence the riparian community along the river margin as native seed-dispersing trees require slow recession rates to match the rate of root growth.

The riparian corridor is important for water temperature and water quality, and supports the greatest diversity of wildlife species of any habitat in California, including aquatic species within

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

channel edge habitats (CALFED 2000). A healthy riparian corridor would also provide a source of LWM in the lower Yuba River where only 15 key pieces¹⁸ of LWM were found during Relicensing Study 06-02.

The Amended FLA includes Proposed Condition AR9, *Control Project Ramping and Flow Fluctuation Downstream of Englebright Dam*. Proposed Condition AR9 includes ramping and flow fluctuation requirements in April 1 through July 15 to prevent a greater than 2.5 cm/day drop in stage. Reedy et al. (2016) identified a maximum recession rate of 2.5 cm/day, citing recommendations by Mahoney and Rood (1998) and Stella et al. (2006), for riparian vegetation seedling establishment. State Water Board staff suggests that the Commission evaluate Proposed Condition AR9 and a riparian recession rate from April 1 through August 31 that would capture the entire cottonwood seed and native willow dispersal period in the lower Yuba River (SYRCL 2016).

As stated in the Amended FLA on page BA8-25, "in consideration of the timeframe required for riparian vegetation establishment, under the Proposed Action [Proposed Condition AR9] riparian habitat and instream cover would continue to represent a moderate to high stressor to juvenile spring-run Chinook salmon." Therefore, additional immediate actions to restore riparian habitat and instream cover (e.g., riparian planting and instream LWM placement) may be appropriate. Riparian planting and LWM placement in the lower Yuba River is feasible. Riparian planting has been shown to be successful in the lower Yuba River (Hammon Bar Enhancement Project) and a plan for LWM placement in the lower Yuba River has been developed by YCWA (Narrows 2 Mitigation Plan).

Comment 6: Proposed Condition WR3- Lower Yuba River Water Year Types

The Amended FLA includes Proposed Condition WR3, *Determine Water Year Types for Conditions Pertaining to Narrows 2 Powerhouse and Narrows 2 Full Bypass*. Proposed Condition WR3 was not discussed during relicensing negotiations and therefore, YCWA did not reach agreement with resource agencies on Proposed Condition WR3.

Proposed Condition WR3 determines water year types based on the North Yuba Index, which is an indicator of the amount of water available in the North Yuba River at New Bullards Bar Reservoir that can be utilized to achieve flows in the lower Yuba River through operations of New Bullards Bar Reservoir. The index is comprised of two components: (1) active storage in New Bullards Bar Reservoir at the commencement of the current water year and; (2) total inflow to New Bullards Bar Reservoir for the current water year, including diversions from the Middle Yuba River and Oregon Creek to New Bullards Bar Reservoir. Total inflow (component 2) is calculated from the California Department of Water Resources (DWR) published Bulletin 120, each year. DWR Bulletin 120 is published each month in February, March, April, and May.

¹⁸ "Key pieces" of LWM is defined in Technical Memorandum 06-02 as all LWM that exceeded half of the average bankfull widths for each reach, exceeded 25 inches in diameter and 25 feet in length, or showed morphologic influence (e.g., trapping sediment or altering flow patterns).

**ATTACHMENT A:
COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)**

Per the Yuba Accord flow regime, water year types are determined beginning in February. However, Proposed Condition WR3 deviates from the Yuba Accord water year type determination as follows: "when the current water year type is a Schedule 5, 6, and Conference Year, the applicable water year type will not be re-evaluated in February due to the inaccuracy of the February forecast."

State Water Board staff does not support removing re-evaluation of the water-year type in February when the current water year type is a Schedule 5, 6, and Conference Year. Providing water year type Schedule 5, 6, and Conference Year flows during actual wet water years could have unnecessary impacts to aquatic biota and habitats. However, State Water Board staff acknowledges that DWR-Bulletin 120 February forecasts do have a level of variability from the March, April, and May forecasts. Therefore, when the current water year type is a Schedule 5, 6, and Conference Year, evaluating the current February forecast as a percent of average historic February conditions (e.g., snowpack, runoff, or precipitation) to determine the February flow regime may be appropriate.

Comment 7: New Colgate Powerhouse Intakes

New Bullards Bar Reservoir is a deep reservoir that thermally stratifies, creating a large cold water pool. New Colgate Powerhouse has the flexibility to extract water from New Bullards Bar Reservoir at an upper intake (1808 feet elevation) and a lower intake (1627.5 feet elevation). However, current New Colgate Powerhouse operations exclusively draw water from the lower intake.

Operations of New Bullards Bar Dam and New Colgate Powerhouse influence water temperature in the lower Yuba River (YCWA Technical Memorandum 02-01). Extracting water from the upper and lower intake could conserve the cold water pool for salmonid spawning and holding and provide warmer water that could benefit juvenile salmonid rearing. Refined water temperature control could also promote instream productivity and steelhead trout anadromy.

To the extent feasible, YCWA should draw water from both New Colgate Powerhouse intakes and develop a plan to operate and maintain the upper and lower intakes. A potential operation and maintenance plan is included in Attachment B - Preliminary Condition 8.

Comment 8: Fish Entrainment through Diversion Tunnels

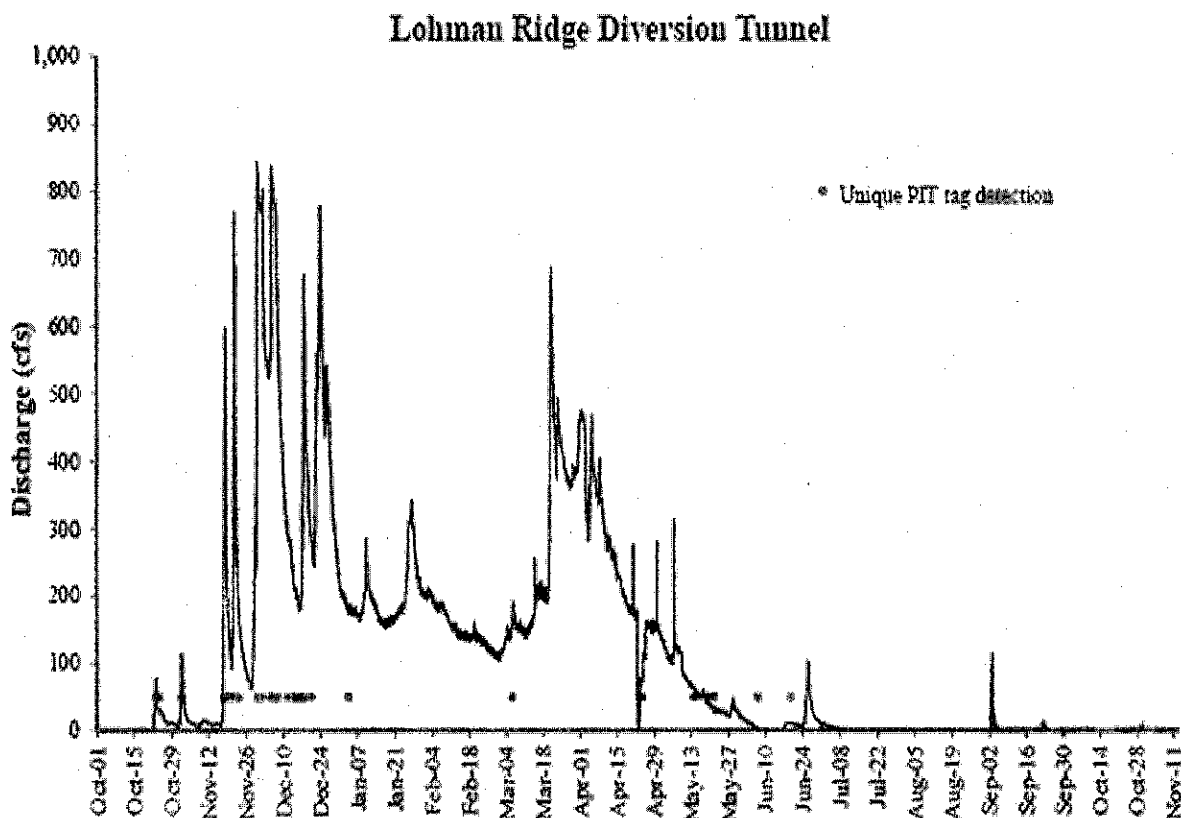
YCWA diverts up to 860 cfs from the Middle Yuba River through the Lohman Ridge Diversion Tunnel to Oregon Creek and up to 1,100 cfs from Oregon Creek through the Camptonville Diversion Tunnel to the North Yuba River (New Bullards Bar Reservoir). In 2012 and 2013, YCWA conducted Relicensing Study 03-11, *Entrainment*, to assess the level of fish entrainment through the diversion tunnels. For Study 03-11, rainbow trout served as a surrogate for all fish in each watershed. The Lohman Ridge Diversion Tunnel entrained 48 of the 159 tagged Middle Yuba River rainbow trout, representing 30 percent. The Camptonville Diversion Tunnel entrained 8 of the 379 tagged Oregon Creek rainbow trout, representing 2.1 percent. Of the 48

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

Middle Yuba River rainbow trout entrained in the Lohman Ridge Diversion Tunnel, 31 were again entrained in the Camptonville Diversion Tunnel. Study 03-11 suggests that the primary location of entrainment and loss of rainbow trout biomass is on the Middle Yuba River through the Lohman Ridge Diversion Tunnel, while less entrainment occurs through the Camptonville Diversion Tunnel.

Entrainment at the Lohman Ridge Diversion Tunnel peaks around two key times, the onset of water diversion in the fall and the curtailment of water diversion in the spring. During Study 03-11, which took place during one dry water year type, entrainment was concentrated from October 22 through December 20 and from April 23 through June 19 (Graph 1). Of the 48 rainbow trout entrained, 2 rainbow trout were entrained outside of the fall and spring concentration periods.

Graph 1. Graph displaying flow and rainbow trout detections in the Lohman Ridge Diversion Tunnel from 2012-2013.



Relicensing participants spent a significant level of effort and time discussing potential and appropriate PM&E measures to address entrainment at the Lohman Ridge and Camptonville diversion tunnels. Potential PM&E measures that were discussed included fish screens, barrier

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

nets, various exclusion technologies (bubbles, lights, noise), stocking, off-site mitigation, and diversion tunnel closures.

The Amended FLA includes Proposed Condition AR11, *Periodically Close Lohman Ridge Diversion Tunnel*. Proposed Condition AR11 contains periodic spring and fall tunnel closures. If end-of-March New Bullards Bar Reservoir storage is 775,000 ac-ft or greater and the subsequent April is a Wet water year type (as defined in Proposed Condition WR2), YCWA will close the Lohman Ridge Diversion Tunnel in spring. If May is a Wet, Above Normal, or Below Normal water year type (as defined in Proposed Condition WR2), YCWA will close the Lohman Ridge Diversion Tunnel in fall. Over the 41 year record, tunnel closures in Proposed Condition AR11 are modelled to occur in spring approximately 17 percent of the years (7/41 years), and in fall approximately 61 percent of the years (25/41 years). Proposed Condition AR11 is also a USFS potential 4(e) condition¹⁹.

The approach to mitigate for entrainment through spring and fall tunnel closures is supported by State Water Boards staff. Spring tunnel closures minimize impacts when young of the year rainbow trout emerge from the gravel and fall tunnel closures minimize impacts when Study 03-11 found the majority of entrainment. Furthermore, tunnel closures have the additional benefit of reestablishing in part the natural hydrograph below the diversion dams to enhance native fauna and habitat.

However, Proposed Condition AR11 may not provide adequate protection to the beneficial uses of the Middle Yuba River. Significant levels of entrainment occurred in Study 03-11 during a dry water year type, yet Proposed Condition AR11 only addresses entrainment in wetter water year types. Additionally, the number of tunnel closures in the spring and fall may not adequately offset entrainment or support viable aquatic populations. An alternative suggested during relicensing discussions that could adequately protect resources include Lohman Ridge Diversion Tunnel closure every year in fall, and in spring if the end-of-March New Bullards Bar Reservoir storage is 775,000 ac-ft or greater and the subsequent April is a Wet or Above Normal water year (as defined in Proposed Condition WR2). Potential protection measures are included in Attachment B - Preliminary Condition 10.

Contrary to the Amended FLA tables, titled *List of YCWA's proposed conditions and the Relicensing Participants that YCWA understands agree with YCWA's proposed Condition...*, Foothill Water Network did not agree to Proposed Condition AR11 (G. Reedy, SYRCL, 2017, pers. comm.).

Comment 9: North Yuba River below New Bullards Bar Dam Habitat

New Bullards Bar Dam is located on the North Yuba River approximately 2.4 miles above the confluence of the North Yuba River and the Middle Yuba River. New Bullards Bar Dam

¹⁹ Proposed Condition AR11, *Periodically Close Lohman Ridge Diversion Tunnel*, was included in the USFS November 7, 2016 letter, which identified USFS and YCWA agreed-upon potential 4(e) conditions.

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

prevents the downstream transport of LWM and sediment. Downstream affected areas include the 2.4 mile section of the North Yuba River (NBB Reach), the 8.2 mile section of the Yuba River from the confluence of the Middle Yuba River and North Yuba River to Englebright Dam (New Colgate Reach), and Yuba River below Englebright Dam²⁰.

Large Woody Material

YCWA estimated approximately 70,000 cubic yards of floating LWM had accumulated in New Bullards Bar Reservoir in 2017. Despite large inputs of LWM from upstream sources, Technical Memorandum 06-01 identified that LWM was largely absent in the NBB Reach and New Colgate Reach. Furthermore, no key pieces of LWM were found in the NBB Reach or New Colgate Reach. Only 15 key pieces of LWM were found in the lower Yuba River.

The magnitude of LWM supplied by the North Yuba River may impair the function or safety of Project infrastructure at New Bullards Bar Dam if the LWM was allowed to pass over the dam. The Amended FLA includes Proposed Condition GS3, *Implement Our House and Log Cabin Diversion Dams and New Bullards Bar Reservoir Woody Material Management Plan*. Current Operations and Proposed Condition GS3 manage LWM in New Bullards Bar Reservoir by aggregating floating LWM in coves and then removing it from the watershed.

YCWA discusses LWM enhancement in the NBB Reach in the Amended FLA on pages E3 3.3.3-264 and E3 3.3.3-265. YCWA is concerned with implementation, cost, and effectiveness of LWM placement in the NBB Reach. LWM is removed from the Yuba watershed as a result of Project operations and facilities; therefore, mitigation for the removal of LWM from the North Yuba River may be appropriate. Based on Ruediger and Ward (1996) for a fourth order stream, 143 pieces of LWM are estimated to occur in a 2.4 mile section of river²¹.

LWM that is removed from the North Yuba River at New Bullards Bar Reservoir would have otherwise been transported naturally to the lower Yuba River. Therefore, placement of LWM in the lower Yuba River to mitigate for Project related impacts may be appropriate.

Implementation and effectiveness monitoring would likely be developed for LWM enhancement measure. Potential LWM mitigation is included in Attachment B - Preliminary Condition 11.

Sediment

Technical Memorandum 01-01 identified that the North Yuba River at New Bullards Bar sediment yield without-Project is 346, 070 tons/mile²/year and the bedload yield is 51,911 tons/mile²/year. However, the sediment yield and bedload yield with the Project is 0

²⁰ LWM can passively float over Englebright Dam. Coarse sediment transport and some fine sediment are trapped at Englebright Dam.

²¹ Ruediger and Ward (1996) inventoried LWM in streams in the Stanislaus National Forest. A fourth order stream contains, on average, 3.7 stable pieces of LWM per 100 meters. Applying 3.7 stable pieces of LWM to the 2.4 mile NBB reach equals a total of 143 pieces of LWM.

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

tons/mi²/year because New Bullards Bar Dam prevents sediment from continuing down the North Yuba River. Inhibiting the sediment transport regime has negative consequences for aquatic habitat and biota. No spawning gravel suitable for rainbow trout was present at the monitoring sites in the NBB Reach (Technical Memorandum 03-08). In Relicensing Study 03-10, *Habitat Mapping Report*, only 511 square feet of rainbow trout spawning-sized gravel was found in a 1.1 mile section of the NBB Reach. Sediment is limited in the NBB reach.

YCWA discusses sediment injection in the NBB reach in the Amended FLA on page E3 3.3.3-264. YCWA is concerned with implementation, cost, and effectiveness of sediment injection in the NBB Reach. However, sediment transport is stopped as a result of Project facilities. Therefore, mitigation for the removal of sediment from the NBB Reach may be appropriate. Potential sediment mitigation is included in Attachment B - Preliminary Condition 12.

Comment 10: Proposed Condition GS2 - Our House and Log Cabin Sediment Management Plan

On February 10, 2016, the State Water Board issued a certification for sediment pass through (i.e., sluicing) at Our House and Log Cabin diversion dams, for the Log Cabin and Our House Diversion Dams Sediment Passage Project (Sediment Passage Project). Per the February 2016 certification, "any future water quality protection requirements regarding sediment management at these two facilities [Our House and Log Cabin diversion dams] that are adopted in the certification for FERC's long-term operations permit for the YRDP as part of the FERC relicensing process will likely supersede this [February 2016] certification, to the extent that a conflict arises."

Following sediment passage events in January and February 2017, the Our House low level outlet and fish release valve were clogged with debris and sediment. A clogged low level outlet and fish release valve could have significant consequences on YRDP water diversion capabilities, infrastructure safety, and compliance with minimum instream flows below the diversion dams. At the request of YCWA, the State Water Board, on April 5, 2017, issued a temporary amendment to the February 2016 certification for work to clear the clogged valves.

The Amended FLA includes Proposed Condition GS2, *Implement Our House and Log Cabin Diversion Dams Sediment Management Plan*. Proposed Condition GS2 is a comprehensive plan that includes mechanical sediment removal, sediment pass through, emergency protocols, and measures to unclog valves. However, Proposed Condition GS2 does not include monitoring elements to illustrate compliance with Basin Plan objectives or to address 303(d) listed impairments. Potential monitoring requirements associated with sediment management at Our House and Log Cabin diversion dams are included in Attachment B - Preliminary Condition 12.

State Water Board staff also recommends that YCWA replace the Sediment Management Project (current FERC license plan) with the Sediment Management Plan (Proposed Condition

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

GS2) immediately, to allow implementation of sediment management activities included in the Sediment Management Plan in the near term rather than waiting for the relicensing process to be completed. A certification for the Sediment Management Plan would likely supersede the February 2016 certification, to the extent a conflict arises.

Comment 11: Narrows Reach Fish Stranding Prevention Plan

The Narrows 2 powerhouse is frequently the most upstream source of flow to the lower Yuba River during the spring-run and fall-run Chinook salmon spawning and migration seasons. As a result, adult salmonids migrating upstream to spawn are attracted to Narrows 2 flow discharge (i.e., discharge from the Partial Bypass, Full Bypass, and powerhouse tailrace).

Attraction of adult salmonids to the Narrows 2 vicinity has resulted in annual fish stranding or potential stranding events from 2012²² through 2016. One stranded Chinook salmon was found in the vicinity of the Narrows 2 Powerhouse on each of the following days: October 23, 2012²³, October 25, 2012, and October 7, 2013. On October 11, 2013, an estimated six Chinook salmon were stranded in an isolated pool created by changes in Narrows 2 Powerhouse operations, specifically shifts between the Full Bypass and powerhouse flow releases. On October 14, 2014, three Chinook salmon were observed stranded in an isolated pool following another change in Narrows 2 Powerhouse operations. Again, on October 26, 2015, nine Chinook salmon were stranded in the pool adjacent to the Full Bypass. On September 30, 2016, during an annual maintenance outage at Narrows 2 Powerhouse, YCWA identified five fish (presumed Chinook salmon by YCWA) in a pool that had the potential to become isolated from the Yuba River.

Adult Chinook salmon have been stranded at primarily three locations: (1) the north bank that received Partial Bypass spray, (2) the pool directly across from the Partial Bypass on the south bank (isolation pool), and (3) the pool that receives discharge water from the Full Bypass (full bypass pool). In September 2016, YCWA installed a hood on the Partial Bypass to direct spray away from the north bank and into the Yuba River; however, the effectiveness of the hood has not been adequately evaluated due to its recent installation. In December 2015, YCWA filled the isolation pool with sediment and graded the adjacent gravel bar; however, the isolation pool reformed in October 2016 and has the potential to strand fish. In February 2016, YCWA developed a project to notch a gravel bar to maintain connectivity between the Yuba River and the full bypass pool; however, this project was deferred to develop a long term plan to address fish stranding in Narrows 2 vicinity. The long term plan would address the isolation pool, full bypass pool, and other potential stranding locations in the vicinity of the Narrows 2 powerhouse. The long term plan relates directly to YRDP operations and should be included in the FERC

²² State Water Board staff has information regarding stranding incidents at Narrows 2 beginning in 2012. Lack of historic information does not imply that stranding events have not occurred prior to 2012.

²³ Technical Memorandum 7-11 & 7-11a identifies a dead salmon was found on the bank on October 23, 2012. However, the Amended FLA states that no additional information about the species of the October 23, 2012 fish carcass is available.

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

license as a PM&E measure. A potential fish stranding prevention plan is included in Attachment B -Preliminary Condition 17.

Comment 12: Public Access to the North Yuba River below New Bullards Bar Dam

The North Yuba River below New Bullards Bar Dam is designated for REC-1 beneficial uses. Additionally, Technical Memorandum 08-02 identified the North Yuba River from New Bullards Bar Dam to New Colgate Powerhouse as a high quality reach for whitewater boating and angling. However, the public currently does not have access to the North Yuba River below New Bullards Bar Dam. YCWA owns land directly downstream of New Bullards Bar Dam, which contains a private access road. The Licensee should develop a plan to provide public access to the North Yuba River below New Bullards Bar Dam while ensuring public safety around Project facilities. A potential plan to provide public access to the North Yuba River below New Bullards Bar Dam is included in Attachment B - Preliminary Condition 22.

Comment 13: Proposed Condition GEN4-Coordinated Operation Plan

The Amended FLA includes Proposed Condition GEN4, *Develop and Implement a Coordinated Operations Plan to Assure Licensee's Compliance with the New License for the Yuba River Development Project*. The purpose of Proposed Condition GEN4 is to provide for coordinated operations of the YRDP and the Narrows Project to assure implementation of the flow-related conditions in the YRDP license, including maintenance of flow requirements during normal operations, scheduled outages, and unscheduled outages. A coordinated operations plan influences YCWA's operational capacity to provide dependable flows to the lower Yuba River. As lower Yuba River flows will likely be a condition of the YRDP certification, the State Water Board will likely required status updates on the development of a coordinated operations plan. Lower Yuba River flow requirements for the Project and the Narrows 1 Project²⁴ are anticipated to be similar.

Comment 14: Proposed Condition WR9-Drought Management Plan

The Amended FLA includes Proposed Condition WR9, *Implement Drought Management Plan*. Proposed Condition WR9 was not developed in consultation with resource agencies during the relicensing process. The purpose of Proposed Condition WR9 is to facilitate approval of variances to FERC license conditions so that drought management measures that require a variance to FERC license conditions may be implemented in a timely, efficient, and effective manner. Given California's recent multi-year drought conditions, and the need for variances in a range of projects in the emergency condition, a drought management plan that provides guidance to the Licensee and streamlines requests and agency approval for variances to FERC license (and certification) conditions during significant droughts is supported; however, Proposed Condition WR9 should address the following issues, as discussed below.

²⁴ The Narrows Project FERC license expires in 2023. If PG&E submits an application for a new license, new terms and conditions will be developed for the new license.

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

Conditions under which the Drought Management Plan may be Implemented

Section 2.1 of Proposed Condition WR9 identifies conditions under which YCWA would consider developing a drought plan. A drought condition in the State encompasses an extremely broad area. Drought conditions that do not apply to the Project area should not influence the ability of the Licensee to comply with FERC license conditions.

Additionally, Project implementation plans were developed based on the historic record, which contains "drought conditions" and drier water year types. For example, Proposed Condition WR2 and WR3 identify water year types for above and below Englebright Dam, respectively. Water year types are incorporated into the Licensee's flow-related proposed conditions (e.g., Proposed Conditions AR1, AR2, AR3, AR9, AR10, AR11, RR3). Single drier water year types should not warrant the development of a drought plan, as they are addressed through designation of water year types, including the Conference Year designation.

Review and Implementation of a Specific Drought Management Plan

In the development of a specific drought management plan, the Licensee should notify the Ecological Group and, as appropriate, host an Ecological Group meeting to review YRDP stakeholder concerns regarding a potential specific drought management plan. Also, Proposed Condition WR9 does not require State Water Board approval of a potential drought management plan, only FERC approval. If the Licensee were to proceed with a variance to a certification condition without State Water Board approval, the State Water Board would consider the variance a violation of the certification.

Comment 15: Proposed Condition AR8-Lower Yuba River Monitoring Plan

The Amended FLA includes Proposed Condition AR8, *Implement Lower Yuba River Aquatic Monitoring Plan*. In Proposed Condition AR8, Section 2.3 Narrows 2 Anadromous Salmonid Stranding, requirements may be superseded by a Biological Opinion from NMFS.

Any revisions that substantively differ from approved plans or terms in the water quality certification would require State Water Board Deputy Director approval.

Comment 16: Proposed Condition WR5-New Bullards Bar Reservoir Minimum Pool

The Amended FLA includes Proposed Condition WR5, *Maintain New Bullards Bar Reservoir Minimum Pool*. Proposed Condition WR5 specifies a target minimum pool in New Bullards Bar Reservoir at elevation 1,730 feet, except for drawdowns below this elevation that are necessary to meet the minimum streamflow requirements in the FERC license, to ensure the New Colgate lower intake withdraws water from the cold water pool. Though the importance of cold water is significant for downstream species, a 1,730 feet minimum pool elevation should not preclude YCWA's compliance with FERC license conditions. Various technologies are available that can ensure cold water is accessible to the New Colgate Powerhouse lower intake. In addition, use

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

of both the upper and lower intakes for New Colgate Powerhouse, as discussed in Comment 7, may contribute in the conservation of the cold water pool and lower the 1,730 pool elevation target.

Comment 17: Incidental Observation of Fish Stranding or Potential Fish Stranding

The Amended FLA, on pages E3.3.3-105 through E3.3.3-122, discusses incidental observations of fish stranding in the vicinity of the Narrows 2 Powerhouse from 2012 through 2015. YCWA should include fish stranding and potential standing incidents to present date in the Environmental Report section of the Amended FLA. One event that should be included is provided below.

On September 30, 2016, during an annual maintenance outage at Narrows 2 Powerhouse, YCWA identified five fish (presumed Chinook salmon) in a pool that had the potential to become isolated from the Yuba River. No fish were found in the pool following the annual maintenance outage.

Comment 18: Narrows 2 Intake Extension Project

As a requirement of YCWA's water right Permits and RD-1644, YCWA is required to "diligently pursue development of the Narrows 2 Powerhouse Intake Extension Project (Intake Extension Project) at Englebright Dam...." The Intake Extension Project would extend the intake of the Narrows 2 powerhouse to allow the cooler water that is present at lower levels of Englebright Reservoir to flow through the Narrows 2 powerhouse and into the lower Yuba River to provide cooler water temperatures for aquatic species. YCWA has submitted reports, every six months, to the Deputy Director identifying that the Intake Extension Project is being assessed during the relicensing of the YRDP.

YCWA proposed Study 07-02, *Potential Narrows 2 Powerhouse Intake Extension*, in August 2011. Study 7-2 is comprised of 3 steps:

- Step 1: Assess Ability of Existing Intake and Alternatives to Meet Target Water Temperatures
- Step 2: Develop Conceptual Design for Preferred Alternative
- Step 3: Prepare Report

YCWA filed Technical Memorandum 07-02, *Potential Narrows 2 Powerhouse Intake Extension*, in November 2013. Technical Memorandum 07-02 analyzed Step 1 and found that water temperature-related operational or infrastructure modifications are not needed. Based on the analysis of Step 1, YCWA did not initiate or complete Step 2 and Step 3.

CDFW filed a letter with FERC, dated January 30, 2014, expressing concern over the criteria used to determine whether related operational or infrastructure modifications are needed to

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

provide suitable water temperature in the lower Yuba River. CDFW concerns are summarized below:

1. Technical Memorandum 07-02 used water temperature objectives from the RMT's Lower Yuba River Water Temperature Objectives Technical Memorandum Addendum, dated December 2013 (2013 water temperature objectives). The 2013 water temperature objectives were based on Yuba Salmon Forum²⁵ water temperature indices, which are specific to tolerable limitations in the upper watershed (i.e., above Englebright Dam) for potential anadromous fish reintroduction. The 2013 water temperature objectives are significantly different than the RMT's original 2010 water temperature objectives, which identified lower Yuba River thermal suitability. Use of the 2013 water temperature objectives in Study 07-02 is inappropriate.
2. Technical Memorandum 07-02 used an exceedance value of 10 percent or greater of the upper tolerance of water temperature as an indicator of "potentially impactful conditions" for a specific species/run and lifestage. Additionally, the 2013 water temperature objectives are comprised of the potential upper tolerance levels of salmonids and were never intended to include 10 percent exceedance criteria. Use of a 10 percent or greater exceedance threshold in Study 07-02 is inappropriate.
3. Study 07-02 applied an average exceedance value over every month from the entire period of record. Taking such a lengthy average does not assess extreme short-term conditions, which can have significant impacts to aquatic biota. Potential short term impacts due to water temperature were not assessed in Study 07-02.
4. Technical Memorandum 07-02 did not include analysis using the Relicensing Water Balance/Operations Model and Relicensing Water Temperature Model.

Notwithstanding FERC's November 13, 2014 determination that Study 07-02 is complete, YCWA remains obligated to pursue the Intake Extension Project under its water right permits. There remain reasonably foreseeable situations in which an intake structure at Narrows 2 would be necessary to meet temperature targets for listed fish species in the lower Yuba River. Situations that may necessitate an intake structure include, but are not limited to: 1) habitat enhancement of the lower Yuba River; 2) the operation of Englebright Reservoir at lower water levels than those currently in place; 3) the application of different temperature targets than those recommended by the River Management Team; 4) climate change altering Englebright water inflow temperatures; or 5) the notching of Englebright Dam to accommodate volitional fish passage.

²⁵ The Yuba Salmon Forum is group comprised of members from YCWA; USFS; USFWS; NMFS; USACE; CDFW; State Water Board; Placer County Water Agency; PG&E; tribes; and numerous non-governmental organizations. "The purpose of the YSF [Yuba Salmon Forum] is to identify, evaluate, recommend, and seek to achieve implementation of effective near-term and long-term actions to achieve viable salmonid populations in the Yuba River watershed to contribute to recovery goals, while also considering other beneficial uses of water resources and habitat values in neighboring watersheds, as part of Central Valley salmonid recovery actions" (Addley et al. 2013).

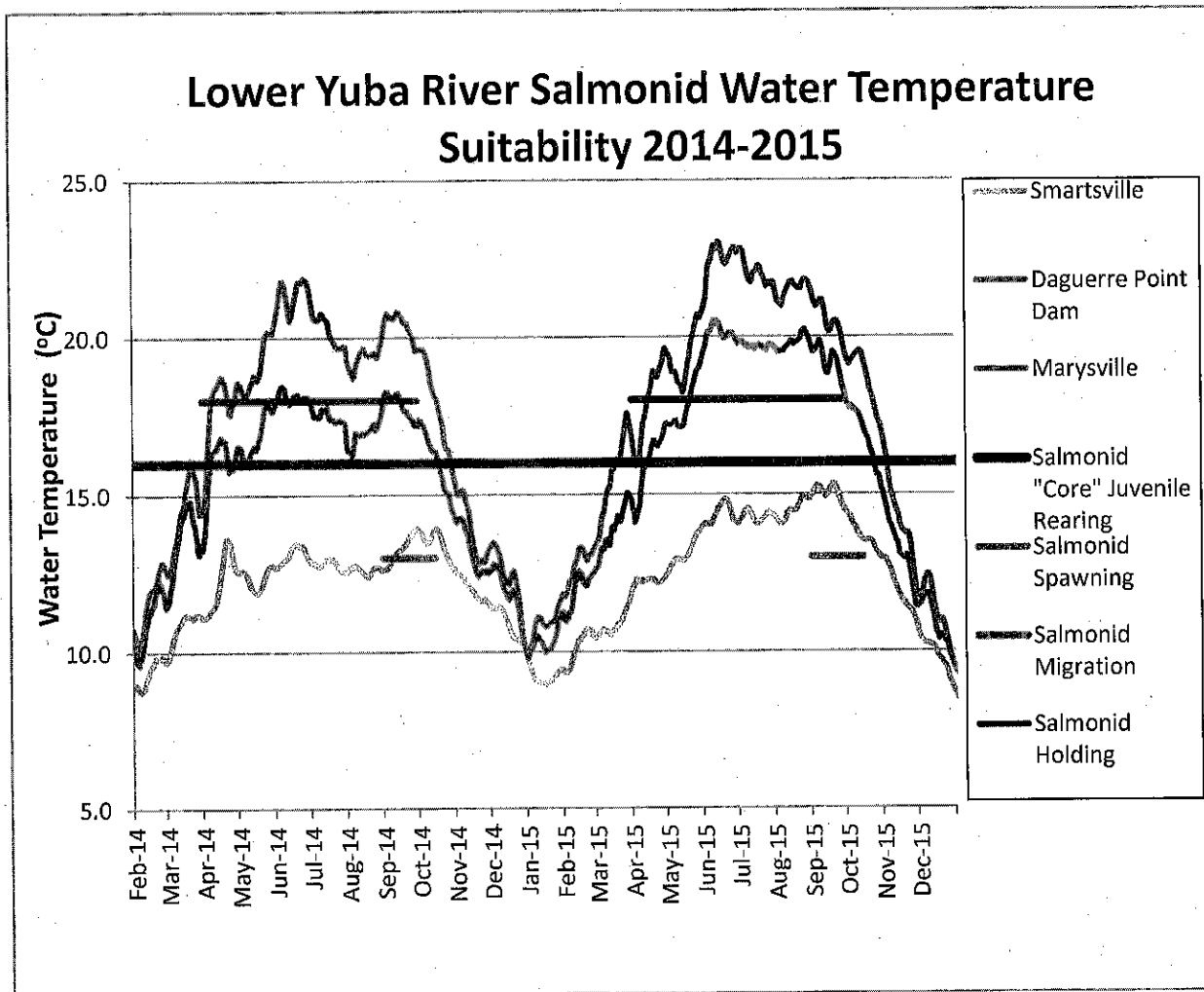
ATTACHMENT A:
COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

The State Water Board is evaluating existing information and may identify additional information needed to make a determination regarding the need for an intake extension structure. Additional information may include a determination of whether Narrows 2 is currently meeting USEPA 2003 temperature standards²⁶ or other temperature criteria deemed appropriate for the lower Yuba River. Of relevance, 2014 through 2015 drought conditions in California resulted in prolonged lower Yuba River thermal conditions that were not suitable for salmonids of various lifestages (Graph 2). In 2014 and 2015, portions of the lower Yuba River were not suitable for most or all of certain salmonid lifestages. Reexamination of the Intake Extension Project in light of recent thermal conditions may be appropriate.

²⁶ The EPA (2003) summer maximum conditions for salmonids are: 16°C degrees Celsius (°C) for salmon/trout juvenile "core" rearing; 13°C for salmon/trout spawning, egg incubation, and fry emergence; 16°C for salmon adult holding prior to spawning; and 18°C for salmon/trout migration (without natural thermal regime).

ATTACHMENT A:
 COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
 FOR YUBA RIVER DEVELOPMENT PROJECT
 (FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

Graph 2. Lower Yuba River water temperatures and salmonid lifestage summer maximum water temperature criteria, in degrees Celsius (°C), shown as Maximum 7-Day Average of the Daily Maximums in Degrees*.



* Salmonid water temperature criteria is referenced from the summer maximum temperature criteria in EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards, dated April 2003. Salmonid lifestage timing is referenced from Relicensing Study 07-02 for spring-run Chinook salmon.

Comment 19: Yuba Salmon Partnership Initiative

The Amended FLA discusses the Yuba Salmon Partnership Initiative (YSPI). The YSPI, comprised of members from YCWA, NMFS, CDFW, American Rivers, Trout Unlimited, and California Sportfishing Protection Alliance, is working to develop a program to allow fish to bypass Englebright Dam and be reintroduced in the North Yuba River upstream of New Bullards Bar Dam. A juvenile fish collection facility would be located upstream of New Bullards Bar Dam (potentially within the FERC Project Boundary (e.g., New Bullards Bar Reservoir)).

ATTACHMENT A:
COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

Agencies with mandatory conditioning authority in the YRDP relicensing (e.g., State Water Board and USFS) are not members of the YSPI nor would the State Water Board be a signatory of any settlement agreement that may be produced. However, a potential YSPI settlement agreement could include activities in New Bullards Bar Reservoir and the lower Yuba River, which may be subject to FERC license amendments and associated State Water Board certification.

Furthermore, the State Board Water has identified Englebright Dam as an integral part of the Project²⁷. Although YCWA is not proposing to include a potential YSPI settlement agreement in the new FERC license, the State Water Board may condition the YRDP appropriately in light of any such YSPI settlement agreement or anadromous fish reintroduction in the future.

Comment 20: USACE Yuba River Feasibility Study

The USACE initiated the Yuba River Ecosystem Restoration Study feasibility phase in 2015 to evaluate opportunities for ecosystem restoration in the Yuba River watershed. This study will provide additional information for State Water Board consideration and environmental analysis. The National Restoration Plan for this study is anticipated to be completed in fall 2017.

Comment 21: Anadromous Fish Reintroduction above Englebright Dam

The State Water Board, through the CEQA process or the water quality certification process, may seek an evaluation and analysis of alternatives for potential anadromous fish reintroduction above Englebright Dam. The State Water Board may condition the Project given the result of the potential anadromous fish reintroduction evaluation and analysis.

²⁷ The State Water Board concluded that Englebright Reservoir serves as an afterbay for New Colgate Powerhouse and a forebay for Narrows 2 Powerhouse (State Water Board RD-1644 Section 3.3.1).

ATTACHMENT A:
COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

References:

- Adler, L.L. 1980. Adjustment of the Yuba River, California, to the Influx of Hydraulic Mining Debris, 1849-1979. A Thesis Submitted in Partial Satisfaction of the Requirement for the Degree Master of Arts in Geography.
- Addley, C., Ross-Smith, K., Graf, P. 2013. Yuba Salmon Forum Summary Habitat Analysis.
- CALFED. 2000. Ecosystem Restoration Program Plan (Volumes 1-4. CALFED Bay-Delta Program).
- CBEC. 2013. Hydrologic and Geomorphic Analysis to Support Rehabilitation Planning for the Lower Yuba River from Parks Bar to Marysville. Report. December 2013.
- CBEC, South Yuba River Citizens League, and McBain & Tush. 2010. Rehabilitation Concepts for the Parks Bar to Hammon Bar Reach of the Lower Yuba River. Report. November 2010.
- EPA. 2003. EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards. April 2003.
- Gerstung, E. 1973. Fish Population and Yield Estimates from California Trout Streams. California Department of Fish and Game.
- Hutchinson, R. 2017. Personal Communication – YRDP Stakeholder Meeting on July 5, 2017.
- James, L.A., M.B. Singer, S. Ghoshal, M. Megison. 2009. Historical Channel Changes in the Lower Yuba and Feather Rivers, California: Long-term effects of contrasting river-management strategies. In L.A. James, S.L. Rathburn, G.R. Whittecar, eds. Management and Restoration of Fluvial Systems with Broad Historical Changes and Human Impacts: Geological Society of America Special Paper 451: 57-81.
- Mahoney, J.M., and S.B. Rood. 1998. Stream flow requirements for cottonwood seedling recruitment—an integrative model. *Wetlands* 18:634–645.
- McEwan, D. 2001. Central Valley Steelhead. In: Contributions to the Biology of Central Valley Salmonids, California Fish and Game, Bulletin 179, Volume 1.
- National Marine Fisheries Service (NMFS). 2014. Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-run Chinook Salmon and Central Valley Spring-run Chinook Salmon and the Distinct Population Segment of California Central Valley Steelhead. California Central Valley Area Office. July 2014.
- Reedy, G. 2017. Inundation Area for Salmonid Rearing and Alternative Flow Regimes for the Lower Yuba River. Final Draft. June 15, 2017.
- Reedy, G. 2017. Personal Communication – YRDP Stakeholder Meeting on July 14, 2017.

ATTACHMENT A:
COMMENTS ON NOTICE OF READY FOR ENVIRONMENTAL ANALYSIS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

Reedy, G. and Don, G. (SYRCL). 2013. Hammon Bar Riparian Enhancement Project Report.

Reedy, G., C. Friedel, and R.Hutchinson. 2016. Cottonwood Seedling Recruitment on the Lower Yuba River Under Existing and Alternative Flow Regimes. Final Draft. December 31, 2016.

Ruediger, R. and J. Ward 1996. Abundance and Function of Large Woody Debris in Central Sierra Nevada Streams. Fish Habitat Relationships Technical Bulletin Number 20.

Stella, J.C., J.J. Battles, B.K. Orr, and J.R. McBride. 2006. Synchrony of seed dispersal, hydrology and local climate in a semi-arid river reach in California. *Ecosystems* 9:1200–1214.

SYRCL. 2016. Seed Release Timing for Riparian Plant Species on the Lower Yuba River.

United States Army Corps of Engineers (USACE). 1972. New Bullards Bar Reservoir, Reservation for Flood Control, Appendix V, Master Manual of Reservoir Regulation Sacramento River Basin, California. Department of the Army, Sacramento District, Corps of Engineers, 1972.

**ATTACHMENT B
PRELIMINARY TERMS AND CONDITIONS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)**

In accordance with the memorandum of understanding (MOU) executed between the Federal Energy Regulatory Commission (FERC) and the State Water Resources Control Board (State Water Board) on November 19, 2013, and to the extent that information is available, State Water Board staff is providing water quality certification (certification) preliminary terms and conditions in response to the notice of Ready for Environmental Analysis (REA) by FERC for the Yuba River Development Project (Project), FERC Project No. 2246. The Project is owned and operated by Yuba County Water Agency (YCWA or Licensee). This document is strictly preliminary in nature, and is being sent to further coordination regarding information needs and potential conditions between FERC and the State Water Board. As such, this document does not reflect a decision by the State Water Board to adopt any particular term or condition, nor does it limit the State Water Board's consideration of terms or conditions different from or in addition to those presented here.

1. Minimum Instream Flows

The State Water Board will likely condition the North Yuba River below New Bullards Bar Dam, Oregon Creek below Log Cabin Diversion Dam, Middle Yuba River below Our House Diversion Dam, and Yuba River below Englebright Dam with minimum instream flows in light of the whole record. The whole record includes, but is not limited to, the: FERC record (including recommendations by resource agencies); final National Environmental Policy Act (NEPA) document; and final California Environmental Quality Act (CEQA) document. Minimum instream flows will likely be specific to water-year types (see Preliminary Condition 4).

2. Ramping Rates

Project operations will likely be subject to ramping rate specifications in order to limit artificial flow fluctuations in Project-affected river and stream reaches, including the Yuba River between the Narrows 1¹ and Narrows 2 powerhouses.

3. Restoration Plan

The State Water Board will likely require that the Licensee develop and implement a restoration plan, in consultation with the relevant resource agencies. The restoration plan should include the total area to be restored, restoration method, performance metrics, maintenance, and implementation and effectiveness monitoring. The restoration, in concert with minimum instream flows and ramping rates, should protect or enhance aquatic habitats, water quality, water temperature, vegetation, fish, wildlife, invertebrates, and other designed beneficial uses of water. A restoration plan would require State Water Board Deputy Director for Water Rights (Deputy Director) approval. The Deputy Director may require revisions to a potential restoration plan. Additionally, the State Water Board may include specific metrics or methods that would appear in or supplement the plan.

¹ Narrows 1 powerhouse is owned and operated by Pacific Gas and Electric Company (PG&E). Per the Coordinated Operations Plan between YCWA and PG&E, dated April 19, 2016, PG&E will operate Narrows 1 powerhouse each day according to the Narrows 1 daily flow volume and flow rate specified by YCWA.

ATTACHMENT B
PRELIMINARY TERMS AND CONDITIONS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

4. Water Year Type Classification

The State Water Board will likely determine the criteria to classify water year types for the Project-affected reaches. Water year type classification criteria for Project-affected waters upstream of Englebright Dam will likely be based on the California Department of Water Resources Bulletin 120 water forecasts. Water year type classification criteria for Project affected waters downstream of Englebright Dam will likely be based on the North Yuba Index². The State Water Board anticipates further refining these classification criteria to address uncertainty in February forecasting.

5. Spill Recession

The State Water Board will likely condition instream flow recession rates off spill events at New Bullards Bar Dam in the North Yuba River, Log Cabin Diversion Dam in Oregon Creek, and Our House Diversion Dam in the Middle Yuba River in light of the whole record. Spill events are defined as water flowing through spill gates or overtopping dams. The objective of the spill recessions is to prevent potential adverse effects caused by rapid changes in regulated streamflow that are inconsistent with recession rates that would occur on a natural hydrograph were the dam not obstructing natural flow. Spill recession rates will attempt to mimic natural recession rates. Operations of the proposed New Bullards Bar Dam Auxiliary Flood Control Outlet on New Bullards Bar Dam will likely be considered a spill event.

6. Streamflow and Reservoir Level Compliance

The State Water Board will likely require the Licensee to develop and implement a Stream Flow and Reservoir Level Compliance Plan to document compliance with streamflow and reservoir level requirements in the new FERC license. At a minimum, this plan should include:

1. Locations where the Licensee monitors streamflow and reservoir levels;
2. Equipment to be used by the Licensee to monitor streamflow and reservoir levels in compliance with requirements of this certification;
3. A description of how the equipment used by the Licensee to monitor streamflow and reservoir levels in compliance with the requirements of this certification is deployed, set (e.g., frequency of data collection), operated, calibrated, and maintained.
4. A description of how data are retrieved from the equipment used by the Licensee to monitor compliance with the requirements in the license related to streamflow and reservoir levels, including frequency of data downloads, quality assurance/quality control procedures, and data storage.

² The North Yuba Index is an indicator of the amount of water available in the North Yuba River at New Bullards Bar Reservoir that can be used to achieve flows on the Lower Yuba River through operations of New Bullards Bar Reservoir. The index is comprised of two components: (1) active storage in New Bullards Bar Reservoir at the commencement of the current water year and; (2) total inflow to New Bullards Bar Reservoir for the current water year, including diversions from the Middle Yuba River and Oregon Creek to New Bullards Bar Reservoir.

ATTACHMENT B
PRELIMINARY TERMS AND CONDITIONS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

5. A description of how streamflow and reservoir level data is provided to the State Water Board.

The Stream Flow and Reservoir Level Compliance Plan will be submitted to the Deputy Director for approval. The Deputy Director may require revisions to the plan.

7. Tunnel Closures at Lohman Ridge and Camptonville Diversion Tunnels

The State Water Board will likely require a schedule to periodically close the Lohman Ridge Diversion Tunnel on the Middle Yuba River and the Camptonville Diversion Tunnel on Oregon Creek. The schedule will likely be determined based on water year types as described in Preliminary Condition 4, and New Bullards Bar Reservoir water level elevation. The goal of this schedule is to restore a more natural hydrograph in Oregon Creek downstream of Log Cabin Diversion Dam and the Middle Yuba River downstream of Our House, and to enhance aquatic habitat quality and quantity for native biota. The objective of the schedule to close the Lohman Ridge Diversion Tunnel is to reduce the number of years when water from the Middle Yuba River and Oregon Creek is diverted to New Bullards Bar Reservoir when New Bullards Bar is spilling or when such a diversion would result in spill at New Bullards Bar Dam, and allow the water to naturally continue down the Middle Yuba River and Oregon Creek instead.

8. New Colgate Powerhouse Intake

The State Water Board will likely condition the operation and maintenance of the upper and lower intakes for New Colgate Powerhouse. Alternatively, the State Water Board may rely on Ecological Group (Preliminary Condition 26) consultation to determine the operation of the upper or lower intake. The upper and lower intakes are separated by approximately 180.5 feet of elevation, providing the Licensee flexibility to extract water within and above the cold water pool in New Bullards Bar Reservoir. The goal of operating both the upper and lower intakes is to provide favorable water temperatures for biota year-round downstream of New Colgate Powerhouse and Englebright Dam. The Licensee may also be required to ensure both intakes are operational and maintained.

9. General Condition for Plans

The State Water Board will likely include a general condition for certification-required plans. This general condition applies to Preliminary Conditions 10-25, each of which requires the Licensee to develop a monitoring and/or implementation plan. The plans should include reporting and consultation requirements, and plan revision guidelines to adaptively manage and monitor beneficial uses affected by Project facilities, maintenance and operations. Each plan is intended to cover the period between FERC's approval of the plan and issuance of a new license (i.e., through the term of the new license and any annual licenses issued by FERC until a new license is issued).

The Licensee shall provide relevant state and federal agencies and interested groups with a minimum 30-day comment period on the plans, which did not receive agreement from relevant resource agencies during the relicensing process. The Licensee shall file the final

ATTACHMENT B
PRELIMINARY TERMS AND CONDITIONS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

plan with the Deputy Director for approval along with documentation of consultation, comments received, and a description of how the final plan incorporates the comments or justification for excluding comments from the final plan. The Deputy Director may require modifications to the plan. Upon Deputy Director approval, the Licensee shall file the approved final plan with FERC. When FERC approves the plan, the Licensee shall implement the plan as approved by FERC.

The plans included or reference in the *Amended Application for a New License Major Project- Existing Dam* (Amended FLA), filed by YCWA with FERC that have been agreed to by all relevant resource agencies during relicensing negotiations, are considered to be "developed in consultation with relevant resource agencies" for the purposes of this certification. In this circumstance, the Licensee is not required to provide the relevant state and federal agencies and interested groups with a minimum 30-day comment period on the plans. The Licensee shall submit the "agreed to plans" to the Deputy Director for approval with documentation of relicensing negotiations. Upon Deputy Director approval, the Licensee shall file the approved plan with FERC. When FERC approves the plan, the Licensee shall implement the plan as approved by FERC. Alternatively, where the plan is finalized prior to issuance of water quality certification, compliance with the plan, including any State Water Board required amendments thereto, may be a condition of the certification absent additional Deputy Director approval.

10. Log Cabin and Our House Diversion Dam Mitigation Plan

The State Water Board will likely require the Licensee, in consultation with relevant resource agencies, to develop and implement a plan to mitigate for Project related impacts to beneficial uses in the Middle Yuba River and Oregon Creek from the Log Cabin and Our House diversion dams and the Lohman Ridge and Camptonville diversion tunnels. Impacts to beneficial uses include, but are not limited to: a barrier to fish and wildlife migration (diversion dams), fish and wildlife entrainment (diversion tunnels), and impaired hydrographs downstream of the diversion dams.

Mitigation shall be commensurate with the level of impact. Mitigation may include, but is not limited to: restoration or enhancement of local aquatic habitat; additional diversion tunnel closures; or other avoidance and minimization strategies. Monitoring may be required to document mitigation effectiveness.

Additionally, the State Water Board may include specific metrics or methods that would appear in or supplement the plan.

11. Large Woody Material Management Plans

Our House and Log Cabin Diversion Dams

The State Water Board will likely require the Licensee, in consultation with the relevant resource agencies, to develop and implement a plan to allow mobile large woody material (LWM) to pass over Our House and Log Cabin diversion dams when conditions permit safe access and working conditions. The primary goal of this plan is to allow the natural

ATTACHMENT B
PRELIMINARY TERMS AND CONDITIONS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

downstream transport of LWM past Our House Diversion Dam on the Middle Yuba River and Log Cabin Diversion Dam on Oregon Creek to improve downstream habitat quality. This plan should consider a protocol for LWM that may be hazardous to Project infrastructure or is too large to safely pass over the dam.

New Bullards Bar Dam and Reservoir

The State Water Board will likely require the Licensee, in consultation with relevant resource agencies, to develop and implement a plan to collect, store, and dispose of LWM in New Bullards Bar Reservoir on the North Yuba River. The objectives of this plan are to ensure the safety of Project facilities and be protective of environmental and recreational resources. The collection, storage, and disposal of LWM at New Bullards Bar Reservoir should avoid adverse effects to federal and state endangered species act and special status species in and around the storage and collection area.

The State Water Board will also likely require the Licensee, in consultation with relevant resource agencies, to develop and implement a plan to mitigate for the reduction of LWM downstream of New Bullards Bar Dam. Mitigation may include, but is not limited to, safely passing LWM over New Bullards Bar Dam or placing LWM in the North Yuba River below New Bullards Bar Dam and in the Yuba River below Englebright Dam. The goal of this plan is to increase the number of LWM below New Bullards Bar Dam in order to improve downstream aquatic habitat. LWM enhancement in the North Yuba River below New Bullards Bar Dam should occur before or concurrent with sediment augmentation below New Bullards Bar Dam (Preliminary Condition 12 in part). LWM enhancement in the Yuba River below Englebright Dam should, to the extent feasible, be anchored. The Licensee shall consult with representatives from the boating community (e.g., American Whitewater) to ensure LWM placement in the river is not hazardous to boaters. The Licensee may also be required to monitor the implementation and effectiveness of LWM augmentation and to submit associated reports to the Deputy Director. Best management practices (BMPs) should be developed to minimize the impact to beneficial uses (e.g., turbidity and wildlife) from LWM placement and installation.

This condition will recognize that it is subordinate to safety determinations by FERC and the California Division of Safety of Dams, and shall include provisions related to safety concerns by other government entities.

Additionally, the State Water Board may include specific metrics or methods that would appear in or supplement the plan.

ATTACHMENT B
PRELIMINARY TERMS AND CONDITIONS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

12. Sediment Management Plans

Log Cabin and Our House Diversion Dams

The State Water Board will likely require the Licensee, in consultation with the relevant resource agencies, to develop and implement a plan to prescribe procedures and guidelines for the management of sediment behind Log Cabin and Our House diversion dams. The objectives are:

1. To maintain or improve the health of the aquatic environment downstream of the dams by allowing the passage of sediments that occur behind the dams.
2. To provide for dam safety and proper functioning of Project facilities, specifically the fish release and low level outlet valves to ensure compliance with certification conditions.

Sediment management methods may include, but are not limited to: conditional passage of sediment through low level outlet valves, based on timing and flow requirements; intermittent mechanical removal of sediment; valve unclogging protocols; and emergency sediment removal. BMPs should be developed for sediment removal activities to minimize the impacts to natural resources. During sediment management activities, the Licensee should monitor turbidity.

The Licensee may also be required to collect bulk sediment samples from each diversion impoundment area to be analyzed by a California-certified laboratory for metals, prior to each sediment management event. Results would be provided to the Deputy Director for review. Deputy Director approval may be required prior to the commencement of a sediment management activities.

Prior to implementing this plan, the Licensee shall obtain the required permits and/or approvals.

New Bullards Bar Reservoir

The State Water Board will likely require the Licensee, in consultation with relevant resource agencies, to develop and implement a plan to mitigate for the reduction in sediment transport past New Bullards Bar Dam in the North Yuba River. Mitigation may include, but is not limited to, sediment augmentation below New Bullards Bar Dam. The goal of this plan is to replace sediment lost downstream of New Bullards Bar Dam in order to improve downstream habitat. Sediment replacement downstream of New Bullards Bar Dam should occur after or concurrent with LWM enhancement below New Bullards Bar Dam (Preliminary Condition 11, in part). The Licensee may also be required to monitor implementation and effectiveness of the sediment augmentation and submit associated reports to the Deputy Director. BMPs should be developed to minimize the impact to beneficial uses (e.g., turbidity and wildlife) from initial sediment placement.

ATTACHMENT B
PRELIMINARY TERMS AND CONDITIONS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

Additionally, the State Water Board may include specific metrics or methods that would appear in or supplement the plan.

13. Water Quality Monitoring Plan

The State Water Board will likely require the Licensee, in consultation with the relevant resource agencies, to develop and implement a plan to monitor water quality. This plan should include monitoring sites at Project reservoirs and locations throughout Project affected stream and river reaches. The monitoring sites should be adequately abundant and spatially distributed to provide data that measures potential impacts to water quality as a result of Project facilities or operations. Water quality monitoring should occur at intervals during the license term to document trends in time and changes in water quality related to operational changes and construction of new Project facilities that may impact water quality or designated beneficial uses of water. At a minimum, this plan should include *in-situ*, water chemistry, recreation related water quality, and bioaccumulation monitoring components. At any point monitoring suggests water quality conditions are in exceedance of Basin Plan water quality objectives, the Licensee shall immediately notify the State Water Board and Central Valley Regional Water Quality Control Board. Additionally, the State Water Board may include specific metrics or methods that would appear in or supplement the plan.

14. Water Temperature Monitoring Plan

The State Water Board will likely require the Licensee, in consultation with the relevant resource agencies, to develop and implement a plan to monitor potential Project effects on water temperature. The objective of this plan is to monitor water temperature flowing into the Project area and in Project reservoirs, impoundments, and affected stream and river reaches. This plan should include an adequate number of sites to track the changes in water temperature entering impoundments, stored in impoundments, and released below impoundments. In flowing water, the Licensee should install and anchor appropriate devices to continuously record water temperature seasonally or throughout the year. In reservoirs, the Licensee should monitor water temperature and thermocline depth by profile sampling near the dam to determine reservoir stratification depths. Water temperature data will identify if Project operations or facilities are impacting thermal conditions for biota (especially rainbow trout, steelhead trout, and Chinook salmon). Additionally, the State Water Board may include specific metrics or methods that would appear in or supplement the plan.

15. Upper Yuba River Aquatic Monitoring Plan

The State Water Board will likely require the Licensee, in consultation with relevant resource agencies, to develop and implement a plan to collect information regarding aquatic resources in Project affected creeks, rivers, and reservoirs upstream of Englebright Dam. At a minimum, monitoring locations should include New Bullards Bar Reservoir, Our House and Log Cabin impoundments, Oregon Creek below Log Cabin Diversion Dam, North Yuba River below New Bullards Bar Reservoir, and Middle Yuba River below Our House Diversion Dam. Additional monitoring locations may be necessary to compare resources with and without Project influence (e.g., location upstream of Project facilities). The objective of this

ATTACHMENT B
PRELIMINARY TERMS AND CONDITIONS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

plan is to collect data on the distribution, abundance, and condition of stream fish (especially rainbow trout (*Oncorhynchus mykiss*)), benthic macroinvertebrates, foothill yellow-legged frogs (*Rana boylei*), western pond turtle (*Actinemys marmorata*), channel morphology (creeks, rivers, and diversion impoundments), riparian vegetation, and LWM. This plan should provide information on Project impacts to designated beneficial uses (e.g., cold freshwater habitat, wildlife habitat, and spawning). Monitoring should also identify the effects to aquatic resources resulting from protection, mitigation, and enhancement measures. At a minimum, this plan should include the following information for each resource monitored:

1. Identify the resources that will be monitored and the frequency that monitoring will occur.
2. Describe where monitoring will occur.
3. Describe the methods YCWA will follow to monitor identified resources.
4. Describe how the collected data will be analyzed.
5. Describe how the data will be made available.
6. Describe how this Plan may be revised, as needed.

Additionally, the State Water Board may include specific metrics or methods that would appear in or supplement the plan, or include specific measures to be taken for adaptive management, based on the data collected.

16. Lower Yuba River Monitoring Plan

The State Water Board will likely require the Licensee, in consultation with relevant resource agencies, to develop and implement a plan to collect information regarding aquatic resources in the Yuba River downstream of Englebright Reservoir. The objective of this plan is to collect data on the distribution, abundance, and condition of benthic macroinvertebrates, channel substrate, riparian vegetation, LWM, and adult and juvenile anadromous fish. This plan should provide information on Project impacts to designated beneficial uses (e.g., cold and warm freshwater habitat, wildlife habitat, and spawning). At a minimum, this plan should include the following information for each resource monitored:

1. Identify the resources that will be monitored and the frequency that monitoring will occur.
2. Describe where monitoring will occur.
3. Describe the methods YCWA will follow to monitor identified resources.
4. Describe how the collected data will be analyzed.
5. Describe how the data will be made available.
6. Describe how this Plan may be revised, as needed.

Additional focus should be attributed to monitoring for stranded salmonids during Narrows 2 Powerhouse flow fluctuations that have a potential to negatively impact anadromous salmonids (e.g., Chinook salmon and steelhead trout). At a minimum, this component should discuss fish stranding surveys (protocols, locations, and triggers), required permits if fish are stranded, and reporting and consultation procedures.

**ATTACHMENT B
PRELIMINARY TERMS AND CONDITIONS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)**

Additionally, the State Water Board may include specific metrics or methods that would appear in or supplement the plan, or include specific measures to be taken for adaptive management, based on the data collected.

17. Narrows Reach Fish Stranding Prevention Plan

The State Water Board will likely require the Licensee, in consultation with relevant resource agencies, to develop and implement a plan to reduce fish stranding in the Yuba River from immediately below Englebright Dam to the Narrows 1 Powerhouse (Narrows Reach). The goal of this plan is to develop permanent or long term measures to reduce or eliminate fish stranding, especially anadromous salmonids, during the range of flows experienced in the Narrows Reach as a result of Project operations and coordinated operations with the Narrows Project. This plan should consider locations in the Narrows Reach where fish stranding has historically or has a potential to occur. Measures to reduce stranding may include, but are not limited to, changes in Narrows 2 operations and/or coordinated operations with the Narrows Project, construction of entrainment deterrents, maintenance of gravel bars and streambanks, or filling of intermittent pools. Measures should include implementation and effectiveness monitoring.

Additionally, the State Water Board may develop specific conditions to address Narrows Reach stranding that would appear in or supplement the plan.

18. Aquatic Invasive Species Management Plan

The State Water Board will likely require the Licensee, in consultation with relevant resource agencies, to develop and implement a plan to manage aquatic invasive species (AIS). The goal of this plan is to establish a framework with specific activities to minimize the spread and impact of AIS on native fauna and habitats. This plan should identify and describe AIS currently established within the Project area and AIS with high potential to become established within the Project area. This plan may include, but is not limited to, the following measures:

1. Implement actions to minimize and prevent the introduction and spread of AIS into and throughout Project-affected waters.
2. Provide education and outreach to ensure public awareness of AIS effects and management throughout Project-affected waters.
3. Implement monitoring programs for early detection of AIS.
4. Ensure all Project AIS management activities comply with federal and State of California laws, regulations, policies, and management plans, and with Forest Service directives and orders regarding AIS.
5. Monitor and minimize the spread of established AIS.

ATTACHMENT B
PRELIMINARY TERMS AND CONDITIONS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

Additionally, the State Water Board may include specific metrics or methods that would appear in or supplement the plan, or include specific measures to be taken if new AIS are discovered in the Project area.

19. Bald Eagle and Peregrine Falcon Plan

The State Water Board will likely require the Licensee, in consultation with the relevant resource agencies, to develop and implement a plan for the protection of bald eagles (*Haliaeetus leucocephalus*) and American peregrine falcons (*Falco peregrinus anatum*) in all areas within and outside of the FERC Project boundary where bald eagle(s) and American peregrine falcon(s) are affected or have the potential to be affected by the Project. This plan should include measures to ensure that Project operations and maintenance and Project related recreation activities do not result in the unauthorized take³ of bald eagles and peregrine falcons. Project related activities should be consistent with federal and State of California laws and regulations relating to bald eagles and American peregrine falcons. This plan may include, but is not limited to, establishing limited operating period, establishing buffer zones, and undertaking monitoring surveys.

20. New Bullards Bar Reservoir Fishery Plan

The State Water Board will likely require the Licensee, in consultation with the relevant resource agencies, to develop and implement a plan to supplement the fishery at New Bullards Bar Reservoir. This plan may include annual fish stocking (i.e. kokanee and rainbow trout), hatchery restrictions to maintain genetic integrity, and other options to promote a healthy fishery. This plan should be consistent with California Fish and Game Code and support REC-1 beneficial uses of water in the North Yuba River. This plan should include a monitoring component to measure the effectiveness of this plan (e.g., creel surveys).

21. Whitewater Boating Flows below Our House Diversion Dam

The State Water Board will likely require the Licensee, in consultation with the relevant resource agencies and interested parties, to develop and implement a plan for the release of whitewater boating flows below Our House Diversion Dam in the Middle Yuba River. This plan should identify the whitewater boating time period, method(s) of public notification, magnitude of flow releases measured at a specific streamflow gage(s), and potential impacts to aquatic biota. This plan should consider water year type forecasts when scheduling boating flows. Whitewater boating flows below Our House Diversion Dam should be designed to uphold REC-1 designated beneficial uses that may have been diminished due to the development of Our House Diversion Dam and the Lohman Ridge Diversion Tunnel.

³ As defined in California Fish and Game Code (Sections 86, 3511, 3503, 3503.5, 3513) and federal Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act.

**ATTACHMENT B
PRELIMINARY TERMS AND CONDITIONS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)**

22. Public Access below New Bullards Bar Dam

The State Water Board will likely require the Licensee, in consultation with the relevant resource agencies and interested parties, to develop and implement a plan to provide public access to the North Yuba River below New Bullards Bar Dam for REC-1 designated beneficial uses. At a minimum, this plan should include development and maintenance of an access road from Marysville Road near New Bullards Bar Dam to a boater put-in location on the North Yuba River below New Bullards Bar Dam. Alternatively, the use and maintenance of the Licensee's access road, which provides access to the North Yuba River below New Bullards Bar Dam, could be used for this plan. This plan should include potential construction (e.g., fencing, warning signs) to protect Project facilities from public vandalism or harm.

23. Drought Management Plan

The State Water Board will likely require the Licensee, in consultation with the relevant resource agencies and interested parties, to develop and implement a plan that outlines overarching guidance for operations during multi-year drought conditions. The plan should include an anticipated schedule to initiate State Water Board and Ecological Group (Preliminary Condition 26) consultation regarding any potential drought-related FERC license or certification variances. If particular conditions are likely to require variance in extended drought periods, the State Water Board may include a drought management term in such conditions.

24. Erosion and Sediment Control Plan

The State Water Board will likely require the Licensee, in consultation with the relevant resource agencies, to develop and implement a plan to minimize undesirable erosion or sedimentation conditions near streams and reservoirs caused from Project operations and maintenance. This plan should contain erosion and sediment reduction protocols for ground-disturbing activities that include, but are not be limited to, routine operations; maintenance; new construction; emergencies within the Project affected area; management of historic properties and integrated vegetation; transportation; and recreation. Protocols shall abide by applicable regulations and reduce impacts to water quality within the Project area.

Additionally, the State Water Board may include specific metrics or methods that would appear in or supplement the plan.

25. Hazardous Material Plan

The State Water Board will likely require the Licensee, in consultation with the relevant resource agencies, to develop and implement a plan for storage, use, transportation, and disposal of hazardous materials in the Project area. This plan should discuss appropriate measures and equipment required to prevent the extent of any hazardous material spill. This plan should also include protocols to prevent adverse impacts to beneficial uses in the event that hazardous materials are spilled. On-site containment for hazardous-chemical

ATTACHMENT B
PRELIMINARY TERMS AND CONDITIONS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

storage shall be placed away from watercourses and include secondary containment and appropriate management as specified in California Code of Regulations, title 27, section 20320. Protocols and methods in this plan shall abide by federal, state and local laws and policies. Additionally, the State Water Board may include specific metrics or methods that would appear in or supplement the plan.

26. Ecological Group

The State Water Board will likely require the Licensee to organize an Ecological Group and host Ecological Group meetings. Ecological Group meetings should convene once per year on a defined date and additional Ecological Group meetings may be held, as appropriate. At a minimum, the Ecological Group should be composed of the Forest Service, United States Army Corps of Engineers, Nation Marine Fisheries Service, United States Fish and Wildlife Service, California Department of Fish and Wildlife, Bureau of Land Management, relevant Tribes, and the State Water Board.

The purpose of the meetings should be to provide a forum for stakeholders to be informed of Project activities and elements impacted by the Project. Discussion topics may include, but are not limited to, monitoring reports and other data from the previous calendar year, license noncompliance, recommendations or revisions to license required monitoring or implementation plans, and scheduled Project facility maintenance.

At least 30 days prior to the Ecological Group Meeting, the Licensee shall make available to the Ecological Group reports and information from the previous calendar year required by the certification, or implementation plans and other relevant meeting material. Within 30 days following each Ecological Group Meeting, the Licensee shall file a meeting summary with FERC and the State Water Board.

27. General Annual Employee Awareness Training

The State Water Board will likely require the Licensee to provide general awareness training on compliance with water quality certification requirements to hydro operation and maintenance staff each year. The training topics should include, but are not limited to, conditions of this certification; special-status species; non-native invasive plants; AIS; sensitive areas known or suspected by Licensee or resource agencies to occur within the Project affected area; and procedures to avoid and minimize adverse effects to beneficial uses.

28. Coordinated Operations Plan with Narrows Project

The State Water Board will likely require the Licensee to file with the State Water Board a Coordinated Operations Plan for the Project and Narrows Project (FERC Project No. 1403). The purpose of this plan is to provide for coordinated operations of the Project and the Narrows Project to assure implementation of the flow-related conditions in the Project license, including maintenance of flow requirements and ramping rates during normal operations, scheduled outages, and unscheduled outages. If Licensee and the licensee for the Narrows Project are unable to reach agreement on this plan within the first 90 days of

ATTACHMENT B
PRELIMINARY TERMS AND CONDITIONS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

the new license term, then Licensee shall advise the State Water Board of the consultations that have occurred between the two licensees. Every 30 days thereafter, the Licensee shall continue to update the State Water Board until the plan is complete and submitted to the State Water Board.

29. Newly Identified Impacts

The State Water Board reserves the authority to require additional conditions and revise current conditions whenever Project-related potential impacts or newly-listed species within the Project-affected area are identified or introduced (e.g., anadromous fish passage above Englebright Dam or emigration of juvenile salmonids through dams or powerhouses) to ensure adequate protection of Basin Plan objectives and beneficial uses.

The State Water Board also reserves the authority to require the Licensee to develop, in consultation with appropriate resource agencies, and conduct studies whenever new Project-related potential impacts or newly-listed species within the Project-affected area are identified or introduced. Such studies should be designed to determine and recommend appropriate measures to minimize new Project-related impacts and impacts or newly-listed species within the Project-affected area.

The following standard conditions will likely apply to this Project in order to protect water quality and beneficial uses over the term of the Project's license and any annual extensions.

30. Unless otherwise specified in the certification or at the request of the State Water Board, data and/or reports must be submitted electronically in a format accepted by the State Water Board to facilitate the incorporation of this information into public reports and the State Water Board's water quality database systems in compliance with California Water Code section 13167.
31. The State Water Board's approval authority includes the authority to withhold approval or to require modification of a proposal or plan prior to approval. The State Water Board may take enforcement action if YCWA fails to provide or implement a required plan in a timely manner.
32. The State Water Board reserves the authority to add to or modify the conditions of a certification to incorporate changes in technology, sampling, or methodologies and/or load allocations developed in a total maximum daily load developed by the State Water Board or the Central Valley Regional Water Quality Control Board.
33. Future changes in climate projected to occur during the license term may significantly alter the baseline assumptions used to develop the conditions in a certification. The State Water Board reserves authority to modify or add conditions in a certification to require additional monitoring and/or other measures, as needed, to verify that Project operations meet water

ATTACHMENT B
PRELIMINARY TERMS AND CONDITIONS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

quality objectives and protect the beneficial uses assigned to the Project-affected stream reaches.

34. A certification requires compliance with all applicable requirements of the Basin Plan. The Applicant must notify the State Water Board and the Central Valley Regional Water Quality Control Board within 24 hours of any unauthorized discharge to surface waters.
35. The State Water Board reserves the authority to add to or modify the conditions of this certification: (1) if monitoring results indicate that continued operation of the Project could violate water quality objectives or impair the beneficial uses of Yuba River or its tributaries; (2) to coordinate the operations of this Project and other hydrologically connected water development projects, where coordination of operations is reasonably necessary to achieve water quality objectives or protect beneficial uses of water; or (3) to implement any new or revised water quality objectives and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Act, or section 303 of the Clean Water Act.
36. Notwithstanding any more specific conditions in a certification, the Project shall be operated in a manner consistent with all water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act. The Applicant must take all reasonable measures to protect the beneficial uses of the Yuba River and its tributaries.
37. A certification does not authorize any act which results in the taking of a threatened, endangered, or candidate species or any act, which is now prohibited, or becomes prohibited in the future, under either California Endangered Species Act (Fish & G. Code §§ 2050-2097) or the Endangered Species Act (ESA) (16 U.S.C. §§ 1531 - 1544). If a "take" will result from any act authorized under a certification or water rights held by YCWA, YCWA must obtain authorization for the take prior to any construction or operation of the portion of the Project that may result in a take. YCWA is responsible for meeting all requirements of the applicable ESAs for the Project authorized under a certification.
38. In the event of any violation or threatened violation of the conditions of a certification, the violation or threatened violation is subject to any remedies, penalties, process or sanctions as provided for under applicable state or federal law. For the purposes of section 401(d) of the Clean Water Act, the applicability of any state law authorizing remedies, penalties, process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into a certification.
39. In response to a suspected violation of any condition of a certification, the State Water Board may require the holder of any federal permit or license subject to a certification to furnish, under penalty of perjury, any technical or monitoring reports the State Water Board deems appropriate, provided that the burden, including costs, of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. The State Water Board may add to or modify the conditions of a certification as appropriate to ensure compliance.

ATTACHMENT B
PRELIMINARY TERMS AND CONDITIONS
FOR YUBA RIVER DEVELOPMENT PROJECT
(FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2246)

40. No construction shall commence until all necessary federal, state, and local approvals have been obtained.
41. The Applicant must submit any change and/ or proposed change to the Project, including Project operation, technology changes or upgrades, or methodology, which would have a significant or material effect on the findings, conclusions, or conditions of this certification, to the State Water Board for prior review and written approval. The State Water Board shall determine significance and may require consultation with state and federal agencies. If the State Water Board is not notified of a change to the Project, it will be considered a violation of this certification. If such a change would also require submission to FERC, the change must first be submitted and approved by the State Water Board.
42. The Applicant must provide State Water Board staff access to Project sites to document compliance with this certification.
43. The State Water Board shall provide notice and an opportunity to be heard in exercising its authority to add or to modify any of the conditions of this certification.
44. A certification is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Water Code Section 13330 and California Code of Regulations, title 23, division 3, chapter 28, article 6 (commencing with section 3867).
45. A certification 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.
46. Nothing in a certification shall be construed as State Water Board approval of the validity of any water rights, including pre-1914 claims. The State Water Board has separate authority under the Water Code to investigate and take enforcement action if necessary to prevent any unauthorized or threatened unauthorized diversions of water.
47. Certification is conditioned upon total payment of any fee required under California Code of Regulations, title 23, chapter 28.

Document Content(s)

8_25_17_SWB_REA_Cmts.PDF.....1-62