

SECTION 1.0

INTRODUCTION

1.1 YCWA's Application for a New License

The Yuba County Water Agency (YCWA), pursuant to Section (§) 5.18 of Title 18 of the Code of Federal Regulations (C.F.R.), files with the Federal Energy Regulatory Commission (FERC or Commission) an Application for a New License for Major Project – Existing Dam – for YCWA's 361.9-megawatt (MW) Yuba River Development Project (Project), FERC Project Number 2246. The initial license for the Project was issued by the Federal Power Commission (FERC's predecessor) to YCWA on May 16, 1963, effective on May 1, 1963. The Federal Power Commission's May 6, 1966, Order Amending License changed the license's effective date to May 1, 1966, for a term ending on April 30, 2016.

The existing Project ranges in elevation from 280 feet (ft) to 2,049 ft,¹ and is located in Yuba, Sierra and Nevada counties, California, on the main stems of the Yuba River, the North Yuba River and the Middle Yuba River, and on Oregon Creek, a tributary to the Middle Yuba River.

A portion of the existing FERC Project Boundary² encompasses land owned by the United States (i.e., federal land). The federal land includes National Forest System (NFS) land managed by the United States Department of Agriculture, Forest Service (Forest Service) as part of the Plumas National Forest (PNF) and Tahoe National Forest (TNF), and land administered by the United States Army Corps of Engineers (USACE) as part of Englebright Dam and Reservoir.³ All other land within the Project Boundary is private, mostly owned by YCWA.⁴

Existing Project facilities include: 1) New Bullards Bar Dam and Reservoir; 2) Our House and Log Cabin diversion dams; 3) Lohman Ridge and Camptonville diversion tunnels; 4) New Colgate and Narrows 2 power tunnels and penstocks; 5) New Colgate, New Bullards Minimum Flow and Narrows 2 powerhouses; and 6) appurtenant facilities and features (e.g., administrative buildings, switchyards, roads, trails and gages). The existing Project does not include any aboveground open water conduits (e.g., canals or flumes) or any transmission lines.

In addition, the Project includes 16 developed recreation facilities. These include: 1) Hornswoggle Group Campground; 2) Schoolhouse Campground; 3) Dark Day Campground; 4) Cottage Creek Campground;⁵ 5) Garden Point Boat-in Campground; 6) Madrone Cove Boat-in

¹ All elevation data in this exhibit are in United States Department of Commerce (USDOC), National Oceanic and Atmospheric Association (NOAA), National Geodetic Survey Vertical Datum of 1929 (NGVD 29) unless otherwise stated.

² The existing FERC Project Boundary is the area that YCWA uses for normal Project operations and maintenance. The existing Project Boundary and YCWA's proposed Project Boundary are shown in Exhibit G of YCWA's Application for New License.

³ For the purpose of this Exhibit E, if the federal land is composed solely of NFS land, it may be referred to as "NFS land." If the land is composed solely of federal land administered by the USACE, it may be referred to as "USACE land."

⁴ While YCWA is a public agency, its land holdings are considered private property. These land holdings may be referred to as "YCWA land" in this Exhibit E.

⁵ Cottage Creek Campground was burned in 2011 and has not been rebuilt. YCWA is in discussions with the Forest Service regarding rebuilding the burned campground.

Campground; 7) Frenchy Point Boat-in Campground; 8) Dark Day Picnic Area; 9) Sunset Vista Point; 10) Dam Overlook; 11) Moran Road Day Use Area; 12) Cottage Creek Boat Launch;⁶ 13) Dark Day Boat Launch, including the Overflow Parking Area; 14) Schoolhouse Trail; 15) Bullards Bar Trail; and 16) floating comfort stations.⁷ All of the recreation facilities are located on NFS land, with the exception of the Dam Overlook, Cottage Creek Boat Launch and small portions of the Bullards Bar Trail, which are located on land owned by YCWA. All of the developed recreation facilities are located within the existing FERC Project Boundary, except for a few short segments of the Bullards Bar Trail to the east of the Dark Day Boat Launch. In addition, the Project includes two undeveloped recreation sites at Our House and Log Cabin diversion dams, both located on NFS land and within the existing FERC Project Boundary.

The existing Project is operated primarily for flood control, water supply, power generation and environmental enhancement, especially for anadromous salmonids downstream of Narrows 2 Powerhouse. YCWA operates New Bullards Bar Reservoir for storage by capturing winter and spring runoff from rain and snowmelt, and augmenting storage by diversions from the Middle Yuba River and Oregon Creek. The reservoir reaches its peak storage at the end of the spring runoff season, and then is gradually drawn down until its lowest elevation in early to mid-winter. New Bullards Bar Reservoir has mandatory reserved flood storage space criteria from mid-September through the end of May that limit maximum authorized storage. The New Colgate Powerhouse is a highly versatile facility and is used for a combination of peaking and base generation, and at many times, provides a significant percentage of the required ancillary service for grid regulation of the region. The New Bullards Bar Minimum Flow and Narrows 2 powerhouses are operated primarily as base load facilities.

YCWA proposes three general changes to existing Project facilities: 1) addition of a flood control outlet at New Bullards Bar Reservoir; 2) addition of a tailwater depression system (TDS) at New Colgate Powerhouse; and 3) addition of recreation facilities at New Bullards Bar Reservoir. In addition, YCWA proposes to modify the existing FERC Project Boundary.

In general, YCWA proposes to continue to operate the Project as it has operated historically (i.e., since 2006 when the Lower Yuba River Accord went into effect), with the addition of a number of operation and management activities to: 1) protect or mitigate impacts from continued operation and maintenance of the Project; and 2) enhance resources affected by continued Project operation and maintenance. These activities are collectively referred to as protection, mitigation and enhancement (PM&E).

Figure 1.1-1 illustrates the general regional location of the Yuba River watershed. Figure 1.1-2 shows the Project Vicinity,⁸ Project facilities, and the proposed FERC Project Boundary.

⁶ Emerald Cove Marina provides visitor services at Cottage Creek Boat Launch, including houseboat and boat rentals, boat slips and moorings, fuel and a general store. The marina is operated under a lease from YCWA by a private company.

⁷ The Project recreation facilities included one campground that is no longer part of the Project. Burnt Bridge Campground was closed initially by the Forest Service in 1979 due to low use levels. FERC, in an August 19, 1993 Order, which approved YCWA's Revised Recreation Plan, directed YCWA to remove all improvements and restore the Burnt Bridge Campground to the condition it was in prior to development of the facility. YCWA consulted with the Forest Service and all that remains of Burnt Bridge Campground today is the circulation road and vehicle spurs; all other facilities were removed.

⁸ For the purpose of this Exhibit E, "Project Vicinity" refers to the area surrounding the proposed Project on the order of United States Geological Survey (USGS) 1:24,000 quadrangles.

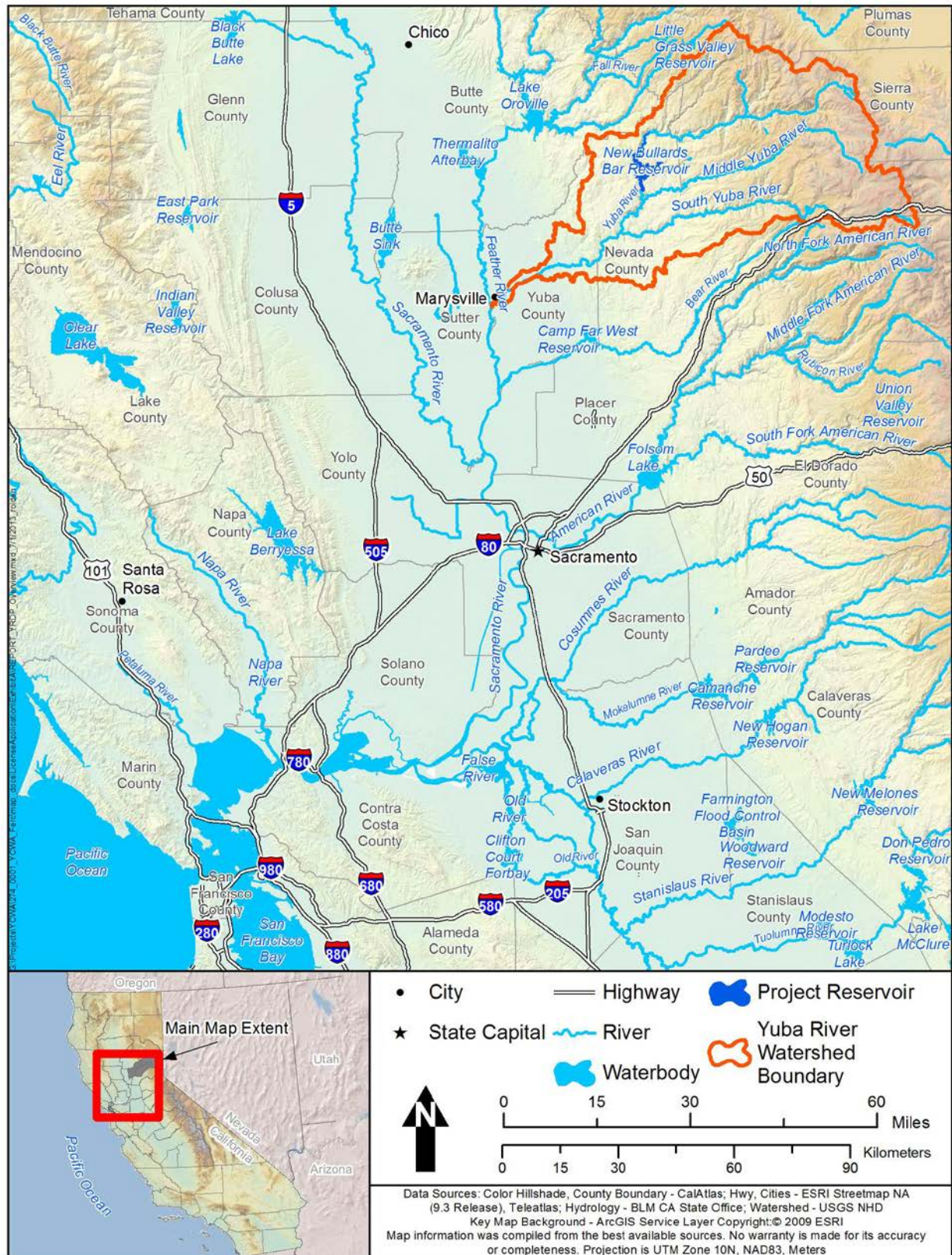


Figure 1.1-1. Yuba River watershed in relation to the Feather River and other tributaries to the Sacramento River.

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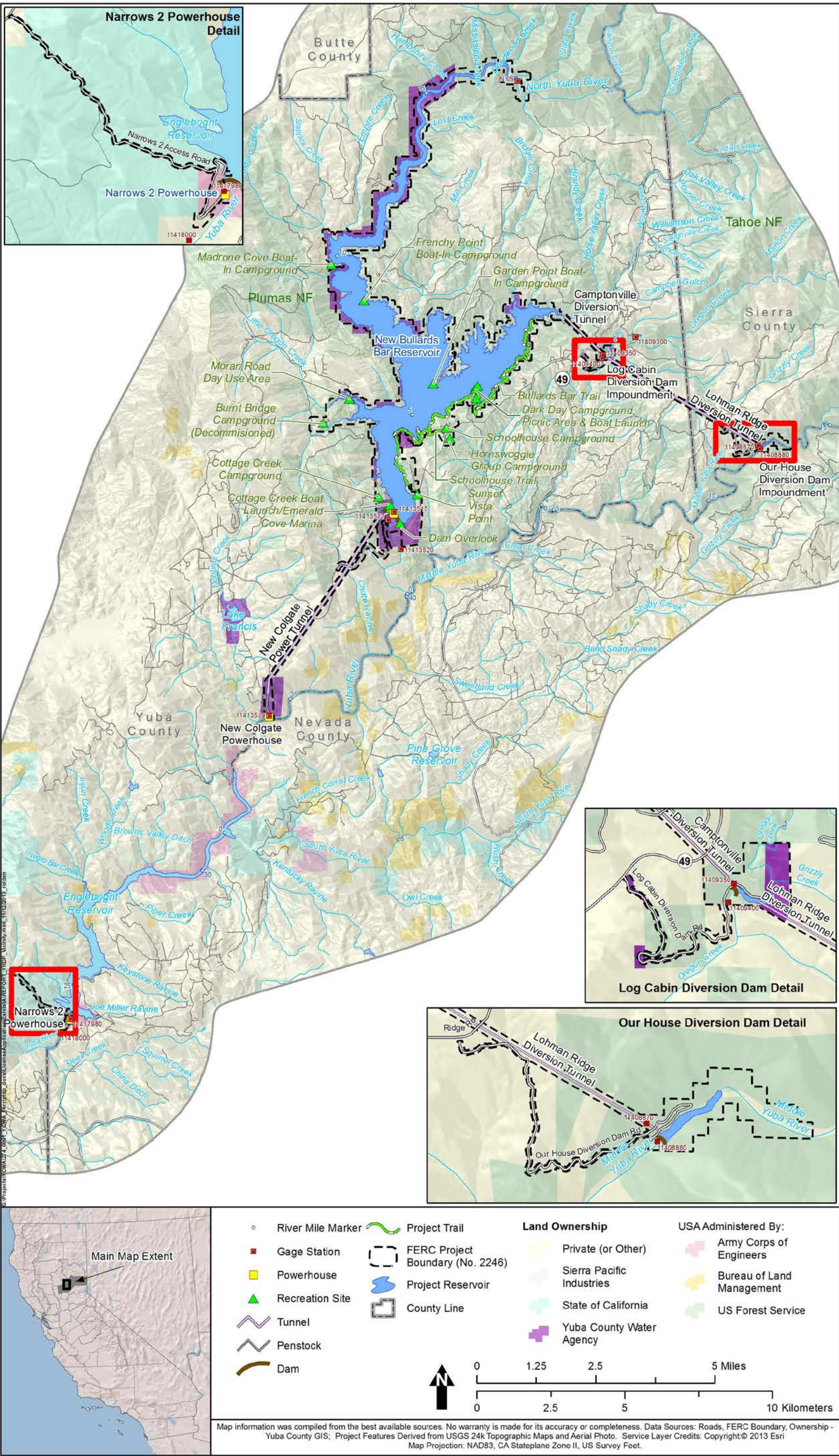


Figure 1.1-2. Yuba County Water Agency's Yuba River Development Project and Project Vicinity.

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YCWA's proposed Project would be able to continue to provide reliable flood control for downstream areas and surface water supplies under YCWA's water right permits to YCWA's eight member units – Brophy Water District (BWD), Browns Valley Irrigation District (BVID), Cordua Irrigation District (CID), Dry Creek Mutual Water Company (DCMWC), Hallwood Irrigation Company (HIC), Ramirez Water District (RWD), South Yuba Water District (SYWD) and Wheatland Water District (WWD) – that deliver water to their service territories, which collectively encompass approximately 90,000 acres (ac) in western Yuba County.⁹ The proposed Project would also continue to provide substantial protection and enhancement for anadromous salmonids in the Yuba River downstream of Narrows 2 Powerhouse.

YCWA anticipates that its proposed Project would generate an average of about 1,407,434 megawatt-hours (MWh) of energy annually, which with ancillary service benefits represents a gross annual power value of \$52,902,221. Annual costs under the proposed Project would be \$33,479,200. Therefore, the net annual benefits would be \$19,423,021.

1.2 Purpose of Action and Need for Power

1.2.1 Purpose of Actions

The Commission must decide whether to issue a license to YCWA for the Project and what conditions should be placed in the license, if issued. In deciding whether to issue a license for the Project, the Commission must determine that the Project will be best adapted to a comprehensive plan for improving or developing the waterway. In addition to the power and developmental purposes for which licenses are issued (e.g., flood control, irrigation, and water supply), the Commission must give equal consideration to the purposes of energy conservation; the PM&E of fish and wildlife, including related spawning grounds and habitat; the provision of recreational opportunities; and the preservation of other aspects of environmental quality.

Issuing a new license for the Project would allow YCWA to continue to generate electricity at the Project for the term of the new license, making electric power from a renewable resource available for transmission to its customers. YCWA would continue to provide irrigation and domestic water to the local communities.

This Exhibit E, Environmental Report, was prepared pursuant to 18 C.F.R. Section (§) 5.18(c), and in general conformance with the Commission's *Preparing Environmental Assessments: Guidelines for Applicants, Contractors and Staff* (FERC 2008). In addition, this Exhibit E was prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), and assesses the effects associated with the operation of YCWA's proposed Project and the

⁹ For the purpose of this exhibit, "existing Project" refers to the existing Project as configured and operated since 2006 when the Lower Yuba River Accord went into effect as a pilot program. The "proposed Project" refers to the Project proposed by YCWA in its Application for New License, including with YCWA's proposed PM&E measures. The word "Project" is used at times in this exhibit where the reference can reasonably be to either the existing Project or proposed Project.

No Action Alternative.¹⁰ This exhibit includes measures proposed by YCWA for the protection, mitigation and enhancement of resources that would potentially be affected by YCWA's proposed Project.

1.2.2 Need for Power

The Project is located in the California-Mexico Power area of the Western Electricity Coordination Council (WECC). According to the California Energy Commission (CEC), electricity consumption statewide is projected to grow at an annual average compounded rate of 1.2 percent from 2010 through 2020 (CEC 2009). YCWA's proposed Project would continue to meet part of existing load requirements within the system, which is in need of resources.

In particular, New Colgate Powerhouse is a source of firm, dispatchable generation, which is useful for providing both peak summertime regional demands for energy and for providing ancillary services to the regional grid (e.g., spinning reserve). These ancillary services will likely have increasing importance as other non-dispatchable sources of power generation (e.g., wind and solar generation) are incorporated into the regional grid to help meet renewable generation portfolio requirements.

Power from the Project could help to meet a need for power in the WECC region in both the short-term and long-term. The Project would provide low-cost power that may displace non-renewable, fossil-fired generation and contribute to a diversified generation mix. Displacing the operation of fossil-fired facilities avoids some power plant emissions and creates an environmental benefit.

As the California electricity industry evolves and with the expiration of YCWA's power purchase contract with Pacific Gas and Electric Company (PG&E) on April 30, 2016,¹¹ YCWA is exploring various options with regard to the energy output of the Project, including selling Project power to third parties through bilateral contracts, or other means.

1.3 Statutory and Regulatory Requirements

Issuing a new license for the Project is subject to numerous requirements under the Federal Power Act (FPA) and other applicable statutes. The major acts and related requirements are summarized in Table 1.3-1 and described below in chronological order based on date of enactment. The current status of actions undertaken by YCWA or the agency with jurisdiction related to each requirement are briefly described.

¹⁰ The "No Action Alternative" is defined as the condition under which the existing Project as currently configured (e.g., no changes to generation facilities) would continue to operate into the future as it has operated since 2006 when the Lower Yuba River Accord went into effect as a pilot program before being subsequently adopted through changes to YCWA's water right permits in 2008 (see State Water Resources Control Board Corrected Order WR 2008-0014). All Project alternatives, including YCWA's proposed Project, are compared to the No Action Alternative.

¹¹ In 1966, YCWA entered into a 50-year power purchase contract with PG&E. The contract stipulated that YCWA provide to PG&E the electric power output from the Project and PG&E pay for the operating and maintenance expenses of the Project.

Table 1.3-1. Summary of statutory and regulatory requirements and status.

| Requirement | Agency with Jurisdiction | Status |
|--|--|--|
| Migratory Bird Treaty Act of 1918 | USFWS | The USFWS has not formally specified measures to protect birds protected under the Migratory Bird Treaty Act at this time. |
| Section 4(e) of the Federal Power Act of 1920 | Forest Service and USACE | The Forest Service and USACE have not formally specified § 4(e) terms and conditions at this time. |
| Section 10(a) of the Federal Power Act of 1920 | Forest Service, Park Service, NMFS, USFWS, SWRCB and Cal Fish and Wildlife | The agencies have not formally provided § 10(a) recommendations at this time. |
| Section 10(j) of the Federal Power Act of 1920 | USFWS, NMFS and Cal Fish and Wildlife | The agencies have not formally provided § 10(j) recommendations at this time. |
| Section 18 of the Federal Power Act of 1920 | NMFS and USFWS | NMFS and USFWS have not formally prescribed § 18 fishway prescriptions at this time. |
| Bald and Golden Eagle Protection Act of 1940 | USFWS | The USFWS has not formally specified measures to protect bald and golden eagles at this time. |
| California Fully Protected Species Act (1957) | Cal Fish and Wildlife | YCWA has consulted with Cal Fish and Wildlife regarding Fully Protected species. Cal Fish and Wildlife has not issued a formal determination at this time. |
| National Historic Preservation Act of 1966 | Advisory Council, Forest Service, State Historic Preservation Officer, Park Service and Native American Tribes | YCWA has consulted with the Forest Service, State Historic Preservation Officer and Native American tribes, and included a draft Historic Properties Management Plan in the Application for New License. |
| Wild and Scenic Rivers Act of 1968 | Forest Service and Park Service | The agencies have not provided formal comments regarding designated, or proposed for designation Wild and Scenic Rivers at this time. |
| National Environmental Policy Act of 1969 | FERC | FERC initiated NEPA scoping in January 2011 and will be the Lead Agency under NEPA. |
| Clean Water Act of 1970 | SWRCB | YCWA will file with the SWRCB a formal request for a CWA § 401 Water Quality Certificate within 60 days of the date that FERC issues its Ready for Environmental Analysis Notice. |
| Clean Air Act of 1970 | EPA and Air Quality Control Boards | The agencies have not provided formal comments regarding air quality at this time. |
| Coastal Zone Management Act of 1972 | California Coastal Zone Commission | Not applicable; the Project is not within the Coastal Zone. |
| California Environmental Quality Act of 1970 | YCWA and SWRCB | YCWA plans to be the Lead Agency for CEQA (SWRCB expected to be Responsible Agency), and will initiate CEQA at the appropriate time in the relicensing proceeding. |
| California Wild and Scenic Rivers Act of 1972 | Forest Service, BLM and CDPR | The agencies have not provided formal comments regarding designated, or proposed for designation California Wild and Scenic Rivers at this time. |
| Endangered Species Act of 1973 | USFWS and NMFS | YCWA has consulted with USFWS and NMFS, and included an Applicant-Prepared Draft Biological Assessment in the Application for New License. |
| Magnuson-Stevens Fishery Conservation and Management Act of 1976 | NMFS | YCWA has consulted with NMFS, and included an Applicant-Prepared Draft Essential Fish Habitat Assessment in the Application for New License. |
| Pacific Northwest Electric Power Planning and Conservation Act of 1980 | Pacific Northwest Power and Conservation Planning Council | Not applicable; the Project is not within the Pacific Northwest Power and Conservation Planning area (i.e., the Columbia River Basin). |

Table 1.3-1. (continued)

| Requirement | Agency with Jurisdiction ¹ | Status |
|--|---------------------------------------|---|
| Wilderness Act of 1984 | Forest Service and Park Service | The agencies have not provided formal comments regarding designated, or proposed for designation Wilderness Areas at this time. |
| California Endangered Species Act of 1984 | Cal Fish and Wildlife | YCWA has consulted with Cal Fish and Wildlife regarding CESA-listed species. Cal Fish and Wildlife has not issued a formal determination at this time. |
| Americans with Disabilities Act of 2010, and Accessibility Standards | United States Department of Justice | YCWA has assessed recreation facilities on private land owned by YCWA using these standards, and addressed ADA access in the Application for New License. Consultation is not required. |
| Energy Policy Act of 2005 | -- | At this time, parties have not requested trial-type hearings or recommended alternatives to FPA § 4(e) mandatory conditions or § 18 fishway prescriptions. |
| Forest Service Outdoor Recreation Accessibility Guidelines of 2006, and Architectural Barriers Act Accessibility Standards | Forest Service | YCWA has consulted with the Forest Service regarding recreation facilities on federal land managed by the Forest Service, and addressed ADA access in the Application for New License. |

1.3.1 Migratory Bird Treaty Act of 1918

The Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. §§ 703-712), implemented the 1916 Convention between the United States and Great Britain, on behalf of Canada, for the protection of migratory birds. The MBTA was later amended to address treaties between the United States and Mexico, the United States and Japan, and the United States and the Soviet Union, now Russia. The act provides that, unless and except as permitted by regulations made under the act, it is unlawful

...to pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry, or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof...

that is included in terms of one or more of these treaties. (16 U.S.C. § 703)

Executive Order 13186 (66 FR 3853) defines the responsibilities of federal agencies for the protection of migratory birds. Each federal agency taking actions that have, or are likely to have, measurable negative effect on migratory bird populations are directed to develop and implement, within two years, a Memorandum of Understanding (MOU) with the USDOJ, United States Fish and Wildlife Service (USFWS), the lead agency for migratory birds, that shall promote the conservation of migratory bird populations.

YCWA has had ongoing discussions with the USFWS since mid-2009 regarding potential Project effects on migratory bird species potentially affected by the Project.

At this time, the USFWS has not proposed any recommendations for potentially-affected migratory birds. YCWA expects that the USFWS will initiate discussion on migratory birds at the appropriate time in the relicensing proceeding.

1.3.2 Federal Power Act of 1920

1.3.2.1 Section 4(e) Conditions

Section 4(e) of the FPA of 1920, as amended, (16 U.S.C. § 797(e)) provides that any license issued by the Commission for a project within a federal reservation shall be subject to and contain such conditions as the secretary of the responsible federal land management agency deems necessary for the adequate protection and utilization of the reservation. Portions of the Project are located on federal land administered by the Forest Service as part of the TNF and PNF and on federal land administered by the USACE as Englebright Dam and Reservoir.

YCWA has had ongoing discussions with the Forest Service and USACE since mid-2009 regarding potential Project effects on federal land administered by the Forest Service and USACE.

At this time, the Secretaries of Agriculture and Army have not proposed FPA § 4(e) terms and conditions. YCWA expects that the Secretaries will exercise FPA § 4(e) authority at the appropriate time in the relicensing proceeding.

After the federal agencies have proposed their preliminary FPA § 4(e) terms and conditions, parties to a relicensing proceeding may propose alternatives to the preliminary terms and conditions, and may request trial-type hearings on any disputed issues of material fact with respect to such preliminary terms and conditions.

YCWA expects that parties interested in proposing alternatives to preliminary conditions and requesting trial-type hearings will do so at the appropriate time in the relicensing proceeding.

1.3.2.2 Section 10(a) Recommendations

Section 10(a)(1) of the FPA (16 U.S.C. § 806(a)(1)) provides that the project adopted by the Commission

...shall be such as in the judgment of the Commission will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce, for the improvement and utilization of water-power development, for the adequate protection, mitigation, and enhancement of fish and wildlife (including related spawning grounds and habitat), and for other beneficial

public uses, including irrigation, flood control, water supply, and recreation and other purposes referred to in...

FPA section 4(e).

YCWA has had ongoing discussions with federal, State and local agencies since mid-2009 regarding potential Project effects.

At this time, federal and State of California agencies that have filed with FERC comprehensive plans for the development of the waterway have not proposed FPA § 10(a) recommendations. YCWA expects that these agencies will exercise their FPA § 10(a) authorities at the appropriate time in the relicensing proceeding.

Refer to Section 5.4 of this Exhibit E for a discussion of the Project's consistency with comprehensive plans that have been filed with FERC (i.e., Qualifying Plans).

1.3.2.3 Section 10(j) Recommendations

Under § 10(j) of the FPA (16 U.S.C. § 803(j)), each hydroelectric license issued by the Commission must include conditions for the PM&E of fish and wildlife that are affected by the project and are based on recommendations that federal and state fish and wildlife agencies provide to the Commission, unless the Commission determines that the proposed PM&E recommendations are inconsistent with the purposes and requirements of the FPA or other applicable law. Before rejecting or modifying any such agency recommendation, the Commission must attempt to resolve any such inconsistency with the agency making the recommendation, giving due weight to the recommendations, expertise, and statutory responsibilities of such agency.

YCWA has had ongoing discussions with federal, State and local fish and wildlife agencies since mid-2009 regarding potential Project effects on fish and wildlife.

At this time, federal and State of California and local fish and wildlife agencies have not proposed any FPA § 10(j) recommendations for potentially-affected fish and wildlife resources. YCWA expects that these agencies will exercise their FPA § 10(j) authorities at the appropriate time in the relicensing proceeding.

1.3.2.4 Section 18 Fishway Prescriptions

Section 18 of the FPA (16 U.S.C. § 811) provides that the Commission shall require the construction, operation and maintenance by a licensee at its own expense of such fishways as may be prescribed by the Secretary of Commerce or the Secretary of Interior.

YCWA has had ongoing discussions with United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) and USFWS since mid-2009 regarding potential Project effects on fish passage.

At this time, the Secretaries of Commerce and Interior have not provided any formal fishway prescriptions. YCWA expects that the secretaries will exercise or reserve their FPA § 18 authorities at the appropriate time in the relicensing proceeding.

1.3.3 Bald and Golden Eagle Protection Act of 1940

Section 1 of the Bald and Golden Eagle Protect Act (BGEPA) of 1940 (16 U.S.C. § 668), prohibits the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import of any bald or golden eagles, or any part, nest or egg thereof, unless otherwise permitted by the Secretary of the Interior. Section 4 of the Act (16 U.S.C. § 668c) defines “take” to include to “*pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.*” A USFWS regulation (50 C.F.R. § 22.3) defines “disturb” as

...to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding or sheltering behavior.

YCWA has observed bald eagles (*Haliaeetus leucocephalus*) in the Project Area,¹² and golden eagles (*Aquila chrysaetos*) have been reported to occur in the Project Vicinity, though they have not been observed by YCWA.

YCWA has had ongoing discussions with the USFWS since mid-2009 regarding the potential effect of the Project on bald eagles and golden eagles.

At this time, USFWS has not made a formal determination regarding Project effects on bald or golden eagles. YCWA anticipates formal discussion with the USFWS will occur at the appropriate time in the relicensing proceeding.

1.3.4 California Fully Protected Species Statutes (1957)

In 1957, California adopted statutes providing for the full protection of specified birds, mammals, amphibians and reptiles and fish (California Fish and Game Code §§ 3511, 4700, 5050, 5515). These statutes provide that no provision of the Fish and Game Code or any other provision of law shall be construed to authorize the issuance of permits or licenses to take any member of one of these Fully Protected (FP) species, except that the California Department of Fish and Wildlife (Cal Fish and Wildlife)¹³ may authorize the taking of members of these species “for necessary scientific research, including efforts to recover fully protected, threatened, or

¹² For the purposes of this document, “Project Area” is defined as the area within the FERC Project Boundary and the land immediately surrounding the FERC Project Boundary (i.e., within about 0.25-mi of the FERC Project Boundary) and includes Project-affected reaches between facilities and downstream to the next major water controlling feature or structure.

¹³ In January 2013, the California Natural Resources Agency changed the name of the California Department of Fish and Game (CDFG) to the California Department of Fish and Wildlife.

endangered species,” and may authorize the live capture and relocation of members of the listed bird species pursuant to a permit for the protection of livestock.

Today, 13 bird species, nine mammal species, five reptile and amphibian species, and 10 fish species are designated as fully protected (“FP”) under California state law.

Through consultation with Cal Fish and Wildlife, YCWA has identified four FP species that have a reasonable potential to be affected by the Project:

- State of California Fully Protected Species:
 - Ringtail (*Bassariscus astutus*)
 - American peregrine falcon (*Falco peregrinus anatum*)
 - Bald eagle
 - Golden eagle

The bald eagle is also listed as an endangered species under the California Endangered Species Act (CESA), and both the bald eagle and the golden eagle are protected under the MBTA and BGEPA. None of the FP species are listed as threatened or endangered species under the ESA.

YCWA has had ongoing discussions with Cal Fish and Wildlife since mid-2009 regarding the potential effect of the Project, including on California FP species.

At this time, Cal Fish and Wildlife has not made a formal determination regarding potential Project effects on FP species. YCWA expects that Cal Fish and Wildlife will become involved with this issue at the appropriate time in the relicensing proceeding.

1.3.5 National Historic Preservation Act of 1966

Section 106 of the National Historic Preservation Act (NHPA) of 1966 (16 U.S.C. § 470f), requires any federal agency having direct or indirect jurisdiction over a proposed federal or federally assisted undertaking to “*take into account the effects of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in*” the National Register of Historic Places (NRHP) that the Secretary of the Interior is authorized to expand and maintain under Section 101(a)(1)(A) of the NHPA (16 U.S.C. § 470a(a)(1)(A)). The regulations implementing the NHPA are in 36 C.F.R. part 800. Section 800.4(a)(1) of 36 C.F.R. requires the federal agency whose proposed undertaking is subject to the NHPA must determine and document the “area of potential effects” (APE) and 36 C.F.R. § 800.16(d) defines this area as “*the geographic area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.*” This regulation also provide that the “*area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.*” 36 C.F.R. § 800.16(y) defines “undertaking” as “*a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those*

requiring a Federal permit, license or approval.” In this case, the undertaking is FERC’s issuance of a new license to YCWA for the Yuba River Development Project. Potential effects that may be associated with this undertaking include project-related effects associated with the day-to-day operation and maintenance (O&M) of the project after issuance of a new license.

Historic properties are any prehistoric or historic district, site, building, structure, object, or traditional cultural property included in or eligible for inclusion in the NRHP maintained by the Secretary of the Interior (36 C.F.R. § 800.16(1)(1)). In most cases, cultural resources less than 50 years old are not considered eligible for the NRHP; however, a property achieving significance within the past 50 years is eligible if it is of exceptional importance. Cultural resources also must retain their integrities (i.e., the ability to convey their significance) to qualify for listing in the NRHP. For example, dilapidated structures or heavily disturbed archeological sites may not retain enough integrity to relay information relative to the context in which the resource is considered to be important and, therefore, may not be eligible for listing on the NRHP.

As part of the NHPA § 106 process, federal agencies and their representatives are required to participate in consultation on any findings and determinations regarding an undertaking’s effect on historic properties (36 C.F.R. § 800.2(a)(4)). Consulting parties include: 1) the State Historic Preservation Officer (SHPO); 2) Indian tribes; 3) local governments; and 4) individuals and organizations with a demonstrated interest in the project. Section 106 requires that federal agencies seek concurrence from the SHPO on any determinations of NRHP eligibility and findings of effect to historic properties, and notify the Advisory Council on Historic Preservation (Council) on any finding of adverse effects. Additionally, federal agencies must make a reasonable and good faith effort to identify Indian tribes and other consulting parties that might attach religious and cultural significance to historic properties that may be affected by the undertaking (36 C.F.R. § 800.3(f)(2)), and gather information to assist in the identification of such properties (36 C.F.R. § 800.4(a)(3),(4)).

On January 4, 2011, FERC initiated consultation with SHPO pursuant to 36 C.F.R. § 800.3(c)(3), and designated YCWA as its non-federal representative for the purposes of informal Section 106 consultation. YCWA initiated informal consultation with tribes and agencies in 2009 and has since conducted more than eight Section 106 consultation meetings. The meetings focused on development of data gathering studies, defining the APE for the relicensing study, development of a NRHP evaluation plan, field visits to cultural sites, and discussion of other topics participants wished to address. The meetings were attended by representatives from four Native American tribes, Forest Service, FERC and YCWA.

As required under Section 106, YCWA also identified the Project APE, which encompasses all lands, Project facilities, and features within the existing FERC Project Boundary,¹⁴ excluding the areas above Project power and diversion tunnels.¹⁵

¹⁴ The existing FERC Boundary for the Project is shown on existing Exhibit J and K maps. YCWA’s proposed FERC Project Boundary is shown in Exhibit G of YCWA’s Application for New License.

¹⁵ YCWA performs no ground disturbing activities on the land above the power and diversion tunnels except where the tunnels daylight. Therefore, the land above the tunnels were not included in the APE, except where the tunnels daylight.

Consultation has included submitting YCWA's relicensing Technical Memorandum 12-1, *Historic Properties*, and Technical Memorandum 13-1, *Native American Traditional Cultural Properties*,¹⁶ to the Forest Service, the SHPO, and participating tribes for review and comment. In addition, YCWA prepared and submitted to the Forest Service, participating tribes, and the SHPO final technical reports detailing the results of each study in partial fulfillment of the requirements under Section 106.

FERC typically requires, as a license condition, that an applicant for a new license develop and implement a Historic Properties Management Plan (HPMP) that considers and manages effects to historic properties throughout the term of the license. YCWA developed a draft HPMP, which included the NRHP Evaluation Plan, and provided the HPMP to the SHPO, the Forest Service and tribes for comment. The draft HPMP, which is considered Privileged because it contains confidential information, is included in Volume V of YCWA's Application for New License.¹⁷

YCWA anticipates that FERC will enter into a programmatic agreement (PA) that will formally implement the HPMP under the new license, for the Project. The PA generally concludes FERC's § 106 responsibilities for the relicensing.

1.3.6 Wild and Scenic Rivers Act of 1968

Under the Wild and Scenic Rivers Act of 1968, as amended (16 U.S.C. §§ 1271-1287), various rivers and river segments are designated as components of the national wild and scenic rivers system for their "*outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values*" (16 U.S.C. §1271). The purpose of the act is to preserve these rivers in their free-flowing conditions, and to protect them and their immediate environments for the benefit and enjoyment of present and future generations.

There are no designated federal Wild and Scenic Rivers in the Project Vicinity.

In 1999, the Forest Service recommended for Wild and Scenic River designation: 1) the 45 miles (mi) of North Yuba River upstream of New Bullards Bar Reservoir;¹⁸ 2) Canyon Creek, a tributary of the North Yuba River; and 3) the South Yuba River between Lake Spaulding and Point Defiance. All of these river segments are upstream of the Project. Although legislation to confirm these recommendations has not yet been proposed, the Forest Service currently manages these rivers to protect their wild and scenic values.

The Project would not affect the river segments recommended for designation under the Wild and Scenic Rivers Act because none of these segments is located downstream of the Project.

YCWA has had ongoing discussions with the Forest Service and the Park Service since mid-2009 regarding the potential effects of the Project.

¹⁶ Technical Memoranda 12-1 and 13-1 are included in Appendix E6 of this Exhibit E.

¹⁷ An applicant that FERC has designated its non-federal representative may include an HPMP in its Final License Application (FLA) according to 18 C.F.R. § 5.18(b)(3)(ii). The applicant must include documentation of consultation, where applicable.

¹⁸ The Forest Service's designation did not specify the lower elevation of the proposed Wild and Scenic River segment, but simply said at New Bullards Bar Reservoir.

At this time, the Forest Service and Park Service have not formally commented on YCWA's proposed Project in relation to the Wild and Scenic Rivers Act. YCWA expects that the agencies will comment at the appropriate time in the relicensing proceeding, as necessary.

1.3.7 National Environmental Policy Act of 1969

The National Environmental Policy Act of 1969 (42 U.S.C. §§ 4321-437h) (NEPA) requires all federal agencies involved in the permitting of activities affecting the environment, such as the issuance of a new FPA license for the Project, to evaluate the environmental impacts of the proposed action and the significance of these impacts.

Under NEPA, it is the continuing responsibility of the federal government

...to use all practical means consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may-- (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (2) assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings; (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences; (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice; (5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources. (42 U.S.C. §4331(b))

NEPA requires federal action agencies to prepare environmental impacts statements that describe: 1) the environmental impact of the proposed action; 2) any adverse environmental effects which cannot be avoided should the proposal be implemented; 3) alternatives to the proposed action; 4) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and 5) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. (42 U.S.C. § 4332(2)(C)).

On January 4, 2011, the Commission in its notice of commencement of proceeding stating that FERC intended to prepare an Environmental Assessment (EA) for the Project, but noting there was a possibility that an Environmental Impact Statement (EIS) would be required.

The EA or EIS acts as a disclosure or guidance document in which FERC describes the effects of proposed actions and possible PM&E measures; assesses the environmental effects of relicensing the Project; and concludes that relicensing the Project is: 1) not a major federal action significantly affecting the quality of the human environment; or 2) a major federal action significantly affecting the quality of the human environment.

Section 1.4 contains additional details regarding the current activities undertaken by FERC for implementing NEPA.

1.3.8 Clean Water Act of 1970

Section 303 of the Clean Water Act (CWA) of 1970, as amended (33 U.S.C. § 1313) authorizes states to adopt water quality standards applicable to intrastate waters and to submit them to the United States Environmental Protection Agency (USEPA) for review and approval. The SWRCB and the State's nine Regional Water Quality Control Boards (RWQCB) adopt such water quality standards through their adoption of water quality control plans, which also are known as "Basin Plans," pursuant to Water Code §§ 13240-13248. The region of the Central Valley RWQCB (CVRWQCB) includes the Project and the Yuba River watershed.

Clean Water Act § 303((c)(2)(A) (33 U.S.C. § 1313(c)(2)(A) provides that water quality standards shall "*consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses.*" In California, water quality control plans contain water quality objectives, which consist of "*limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention and correction of water pollution and nuisance*" and programs of implementation to achieve the objectives (Water Code §§ 13050(h), 13241-13242.) The RWQCBs must consider various factors, including: 1) past, present and probable future beneficial uses of water; 2) environmental characteristics of the hydrographic unit (HU) under consideration, including the quality of water available thereto; 3) water quality conditions that could reasonably be achieved through the coordinated control of all factors that affect water quality in the area; 4) economic considerations; 5) the need for developing housing within the region; and 6) the need to develop and use recycled water (Water Code § 13241).

The SWRCB's management goals are set forth in the *Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin Rivers*, the fourth edition of which was initially adopted in 1998 and most recently revised in 2011 (CVRWQCB 1998). This Basin Plan formally specifies designated existing and potential beneficial uses and water quality objectives for the Yuba River. The various water quality objectives specified in the Basin Plan are in numeric and narrative form, and some apply to the whole basin while others apply only to specified water bodies.

The Basin Plan divides the area in the Project Vicinity into two hydrologic units HUs: 1) HU 517, which includes the Yuba River and its tributaries upstream of Englebright Reservoir; and 2) HU 515.3, which includes the Yuba River from Englebright Dam to the Feather River. Table 1.3-2 lists designated beneficial uses for these HUs.

Table 1.3-2. Designated beneficial uses of surface water within the Project and the area downstream by HU in the Basin Plan.

| Designated Beneficial Use Description from Basin Plan, Section II | | Designated Beneficial Use by HU in the Basin Plan, Table II-1 | | |
|--|---|--|---|---|
| | | Use | Yuba River from Headwaters to USACE's Englebright Dam | Yuba River from USACE's Englebright Dam to Feather River |
| | | | HU 517 | HU 513.3 |
| Municipal and Domestic Supply (MUN) | Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply. | Municipal and Domestic Supply | Existing | -- |
| Agricultural Supply (AGR) | Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation (including leaching of salts), stock watering, or support of vegetation for range grazing. | Irrigation | Existing | Existing |
| | | Stock Watering | Existing | Existing |
| Industrial Process Supply (PRO) | Uses of water for industrial activities that depend primarily on water quality. | Process | -- | -- |
| Industrial Service Supply (IND) | Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization. | Service Supply | -- | -- |
| | | Power | Existing | Existing |
| Water Contact Recreation (REC-1) | Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs. | Contact | Existing | Existing |
| | | Canoeing and Rafting | Existing | Existing |
| Non-Contact Water Recreation (REC-2) | Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beach-combing, camping, boating, tide-pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities. | Other Non-Contact | Existing | Existing |
| Warm Freshwater Habitat (WARM) | Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates. | Warm ¹ | -- | Existing |
| Cold Freshwater Habitat (COLD) | Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates. | Cold ¹ | Existing | Existing |
| Migration of Aquatic Organisms (MGR) | Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish. | Warm ² | -- | Existing |
| | | Cold ³ | -- | Existing |
| Spawning (SPWN) | Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish. | Warm ² | -- | Existing |
| | | Cold ³ | Existing | Existing |

Table 1.3-2. (continued)

| Designated Beneficial Use Description from Basin Plan, Section II | | Designated Beneficial Use by HU in the Basin Plan, Table II-1 | | |
|--|---|--|---|---|
| | | Use | Yuba River from Headwaters to USACE's Englebright Dam | Yuba River from USACE's Englebright Dam to Feather River |
| | | | HU 517 | HU 513.3 |
| Wildlife Habitat (WILD) | Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation or enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, or invertebrates), or wildlife water and food sources. | Wildlife Habitat | Existing | Existing |

Source: CVRWQCB 1998

¹ Resident does not include anadromous. Any hydrologic unit with both WARM and COLD beneficial use designations is considered COLD water body by the SWRCB for the application of water quality objectives.

² Striped bass, sturgeon, and shad.

³ Salmon and steelhead.

CWA § 303(d) (33 U.S.C. § 1313(d)) requires that each State identify the waters within the State for which effluent limitations under CWA § 301(b)(1)(A) and (B) (33 U.S.C. § 1311(b)(1)(A) & (B)) are not stringent enough to implement any water quality standard applicable to such waters. The SWRCB and CVRWQCB work together to research and update this list for Central Valley Region. This list and its associated Total Maximum Daily Load (TMDL) Priority Schedule indicate that, in the Project Vicinity the following surface waters have been identified by the SWRCB as impaired under CWA § 303(d) for the following constituents and water quality parameters (SWRCB 2010):

- mercury - New Bullards Bar Reservoir, the North Fork Yuba River between New Bullards Bar and Englebright Reservoir, the Middle Yuba River, the South Yuba River from Lake Spaulding to Englebright Reservoir, Englebright Reservoir, and the Lower Yuba River from Englebright Reservoir to the Feather River.
- pH - Deer Creek, a tributary to the Yuba River
- arsenic - Kanaka Creek, a tributary to the Middle Yuba River
- water temperature - South Yuba River from Lake Spaulding to Englebright Reservoir

There are currently no approved TMDL plans for the Yuba River.

CWA § 401 (33 U.S.C. § 1341) requires that all applicants for federal licenses and or permits seek certifications for the appropriate State agency that the Project will comply with several listed sections of the CWA, including CWA section 303. CWA section 401(d) (33 U.S.C. § 1341(d)) provides that any such certification

...shall set forth any effluent limitations and other limitations and monitoring requirements necessary to assure that any applicant for a Federal license or permit will comply with any applicable effluent limitations and other limitations under [33 U.S.C. § 1311 or 1312]

standard of performance under [33 U.S.C. § 1316] or prohibition, effluent standard, or pretreatment standard under [33 U.S.C. § 1317], and with any other appropriate requirement of State law set forth in such certification, and shall become a condition on any Federal license or permit subject to the provisions of this section.

The SWRCB issues CWA § 401 certifications for hydroelectric power projects in California.

A CWA section 401 water quality certificate was not issued for the current FERC license for the existing Project because the license for this Project was issued before enactment of the CWA.

YCWA has had ongoing discussions with the SWRCB since mid-2009 regarding the potential effects of the Project.

YCWA intends to file with the SWRCB a request for a CWA § 401 Water Quality Certificate within 60 days of the date that FERC issues its notice accepting YCWA's application and stating the application is ready for environmental review.

1.3.9 Clean Air Act of 1970

The Clean Air Act (42 U.S.C. §§ 7401-7671q) and the Conformity Rules require federal agencies to conform to State Implementation Plans (SIP). The USEPA has established requirements and procedures to ensure that federally sponsored or approved actions will comply with the National Ambient Air Quality Standards (NAAQS), and conform to the appropriate SIPs. The conformity rules apply to designated non-attainment or maintenance areas for criteria pollutants regulated under NAAQS. The SIPs are the approved state air quality regulations that provide policies, requirements, and goals for the implementation, maintenance, and enforcement of the NAAQS. SIPs include emission limitations and control measures to attain and maintain the NAAQS. The USEPA has developed two conformity regulations: one for transportation projects and one for non-transportation projects. Non-transportation projects are governed by the "general conformity" regulations (40 C.F.R. Parts 6, 51 and 93) described in the final rule for Determining Conformity of General Federal Actions to State or Federal Implementation Plans.

Because the Project is a non-transportation project, the general conformity rule applies.

At this time, the EPA and local Air Quality Control Boards have not formally commented on the Project with regards to air quality. YCWA expects that these agencies will comment at the appropriate time in the relicensing proceeding, as necessary.

1.3.10 California Environmental Quality Act of 1970

The California Environmental Quality Act (CEQA) (Pub. Res. Code §§21000-21189.3) requires state and local agencies to follow specified procedures to identify any significant environmental impacts of their proposed actions and to avoid or mitigate those impacts whenever feasible.

CEQA applies to all discretionary activities proposed to be undertaken or approved by California state agencies or local government agencies, such as YCWA.

Under CEQA, an environmental impact report (EIR) must be prepared for any project that may have a significant effect on the environment. (Pub. Res. Code §21100, subd. (a).) An EIR is the public document that analyzes and describes the significant environmental effects of a proposed project, identifies and describes alternatives, and describes potential measures to reduce or avoid potential environmental impacts. A CEQA guideline states that when federal review of a project under NEPA also is required, state agencies should cooperate with federal agencies to the fullest extent possible to reduce duplication between CEQA and NEPA. (Cal. Code Regs., tit. 14, § 15226.)

One CEQA requirement for which there is no corresponding NEPA requirement is the need for CEQA lead agencies to adopt a program for monitoring or reporting on mitigation measures that were adopted for the project. (Cal. Code Regs., tit. 14, § 15097.) The monitoring or reporting program must ensure compliance with mitigation measures during project implementation. The program may also provide information on the effectiveness of mitigation measures. Although discussion of the mitigation reporting or monitoring program can be deferred until the final EIR or, in some cases, after project approval, it is often included in the draft EIR, so that the public may review it and comment on it.

Another analysis required for EIR under CEQA that is not required by NEPA is a description of any growth-inducing effects that the proposed project may cause. (Cal. Code Regs., tit. 14, § 15126.2(d).)

As a local governmental agency, YCWA will be the lead agency for the CEQA process for Project relicensing, and expects that the SWRCB will be a CEQA responsible agency. YCWA expects to initiate the CEQA process, which will include agency consultation and public review, after FERC issues its notice accepting YCWA's Application for a New License and stating the application is ready for environmental review.

1.3.11 Coastal Zone Management Act of 1972

Under § 307(c)(3)(A) of the Coastal Zone Management Act of 1972, as amended, (CZMA), (16 U.S.C. § 1456(c)(3)(A)), the Commission may not issue a license for a project within or affecting a state's coastal zone unless the state's CZMA agency concurs with the license applicant's certification of consistency with the state's CZMA program, or the agency's concurrence is conclusively presumed by its failure to act within 180 days or its receipt of the applicant's certification.

The Project is not located within the coastal zone boundary, which extends from a few city blocks to five miles inland from the sea (www.ceres.ca.gov/coastal.com), and will not affect any resources located within the boundary of the coastal zone. Therefore, the Project is not subject to California coastal zone program review and no consistency certification is needed.

1.3.12 California Wild and Scenic Rivers Act of 1972

The California Wild and Scenic Rivers Act (WSRA) (Pub. Res. Code §§ 5093.50-5093.70) was enacted in 1972 to preserve in their free-flowing states designated rivers possessing extraordinary scenic, recreation, fishery, or wildlife values. (See Pub. Res. Code § 5093.50.) The WSRA prohibits the construction of dams, reservoirs, diversions and other water impoundment facilities, other than permitted temporary flood storage facilities, on any designated river and segment unless the Secretary of the California Resources Agency (Resources Agency) determines that the facility is needed to supply domestic water to local residents and that the facility will not adversely affect the free-flowing condition and natural character of the river and segment. (Pub. Res. Code § 5093.55.) The WSRA requires the Resources Agency to coordinate the activities of State agencies whose activities affect designated rivers with the activities of other state, local and federal agencies with jurisdiction over matters that may affect the rivers, and it requires state and local agencies and departments to exercise their powers in manners that are consistent with the WSRA and its policy. (Pub. Res. Code §§ 5093.60, 5093.61.). Initially, the WSRA required the implementation of a management plan for each river or river segment designated as wild and scenic, but the amendments of 1982 eliminated this requirement. (See former Pub. Res. Code § 5093.59.) State designated rivers may be added to the federal system upon the request of the Governor of California and the approval of the Secretary of the Interior. (See 16 U.S.C. § 1275(c).)

The Project Vicinity does not include any sections of river designated or proposed for designation under the WSRA. The nearest State-designated Wild and Scenic River is the South Yuba River from Lang Crossing to its confluence with Kentucky Creek downstream of Bridgeport. It is managed by the United States Department of Interior, Bureau of Land Management (BLM) in partnership with the Forest Service and the California Department of Parks and Recreation (CDPR), and is upstream of the Project.

YCWA has had ongoing discussions with the Forest Service, BLM and CDPR since mid-2009 regarding the potential effect of the Project.

At this time, the Forest Service, BLM and CDPR have not formally commented on YCWA's proposed Project in relation to the WSRA. YCWA expects that the agencies will comment at the appropriate time in the relicensing proceeding, as necessary.

1.3.13 Endangered Species Act of 1973

The ESA of 1973, as amended, (16 U.S.C. § 1531 - 1544) was enacted to conserve endangered and threatened species and the ecosystems upon which they depend. (See 16 U.S.C. § 1531(b) & (c)(1).) The ESA defines an “endangered” species as “*any species which is in danger of extinction throughout all or a significant portion of its range...*” and a “threatened” species as, “*any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.*” (16 U.S.C. § 1532(6) & (20)). A species may be listed under the ESA as an endangered species or as a threatened species. (16 U.S.C. § 1533.) The ESA is administered by the Secretary of the Interior through USFWS for most

species, and by the Secretary of Commerce through NMFS for marine and anadromous species. (See 16 U.S.C. § 1532(15).)

Section 7 of the ESA (16 U.S.C. § 1536) requires federal agencies to consult with the USFWS or NMFS to ensure that any action that they authorize, fund, or carry out is not likely to jeopardize the continued existence of any threatened or endangered species, or result in the destruction or adverse modification of critical habitat¹⁹ for these listed species. A proposed action may jeopardize the continued existence of a listed species if it would “*reduce appreciably the likelihood of both the survival and recovery of a listed species...*” (50 C.F.R. § 402.02).

An ESA § 7 consultation begins with requests to the USFWS and NMFS for inventories of the threatened and endangered species that may be affected by the proposed Project. For hydroelectric power project relicensings, FERC then prepares a Biological Assessment (BA) that discusses whether or not any listed species or critical habitat is likely to be adversely affected by the federal action, and therefore requires formal consultation. At the end of the consultation process, the USFWS or NMFS may issue a Biological Opinion (BO) that specifies whether the proposed action will jeopardize the continued existence of any threatened or endangered species, or result in the destruction or adverse modification of any designated critical habitat. (16 U.S.C. § 1536(b).) If jeopardy or adverse modification is found, then the USFWS or NMFS must suggest reasonable and prudent alternative or alternatives to the proposed action that the USFWS or NMFS believes would not cause such jeopardy or adverse modification and which can be taken by the Federal agency or applicant in implementing the proposed project. (16 U.S.C. § 1536(b)(3)(A).) A non-jeopardy opinion may be accompanied by an incidental take statement that specifies potential impacts of the taking of individuals of a listed species or their habitat, mitigation measures, and terms and conditions for implementation of reasonable and prudent mitigation measures. (16 U.S.C. § 1536(b)(4).)

On January 4, 2011, the Commission initiated informal consultation with USFWS and NMFS as required under § 7 of the ESA and the interagency cooperation regulations in 50 C.F.R. part 402, and designated YCWA as FERC’s non-federal representative for purposes of informal consultation.

Through informal consultation with the USFWS and NMFS, YCWA has identified 11 species listed as threatened or endangered under ESA that have a reasonable potential to be affected by the Project. These species are:

- ESA Endangered Species:
 - Stebbins’ morning-glory (*Calystegia stebbinsii*)
 - Pine Hill flannelbush (*Fremontodendron decumbens*)

¹⁹ Critical habitat is defined in Section 3(5)(A) of the ESA (16 U.S.C. § 1532(5)(A)) as the specific areas within the geographical area occupied by the species where there are physical or biological features that are essential to the conservation of the species or that may require special management considerations or protection. (16 U.S.C. § 1532(5)(A)(i).) Specific areas outside of the geographical area occupied by the species may also be included in designations of critical habitat, if such areas are determined to be essential for the conservation of the species. (16 U.S.C. § 1532(5)(A)(ii).)

- Hartweg's golden sunburst (*Pseudobahia bahiifolia*)
- Vernal pool tadpole shrimp (*Lepidurus packardi*)
- ESA Threatened Species:
 - Layne's ragwort (*Packera layneae*)
 - Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)
 - California red-legged frog (*Rana draytonii*) and Critical Habitat
 - Vernal pool fairy shrimp (*Branchinecta lynchi*)
 - Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*) Evolutionarily Significant Unit (ESU) and Critical Habitat
 - Steelhead, California Central Valley Distinct Population Segment (DPS) (*O. mykiss*) and Critical Habitat
 - North American green sturgeon, Southern DPS (*Acipenser medirostris*) and Critical Habitat

Stebbin's morning glory and Hartweg's Golden sunburst are also listed as endangered species under the CESA, which is discussed below. None of the ESA-listed species are California Fully Protected species.

YCWA has had ongoing discussions with FERC, NMFS and USFWS since mid-2009 regarding the potential effects of the Project on ESA-listed species.

The process used to address Project effects on federally listed threatened and endangered species and their critical habitats and a summary of anticipated environmental effects on the species is included in Section 3.3.5, which directly addresses federally listed species under USFWS jurisdiction. Federally listed fish species under NMFS jurisdiction are addressed in the Applicant-Prepared Draft BA in Volume IV of this Exhibit E.²⁰ YCWA anticipates that FERC will consult with NMFS and USFWS at the appropriate time in the relicensing proceeding.

1.3.14 Magnuson-Stevens Fishery Conservation and Management Act of 1976

One of the purposes of Magnuson-Stevens Fishery Conservation and Management Act of 1976, as amended (16 U.S.C. §§ 1801-1891d) (MSA) is to conserve and manage anadromous fishery resources of the United States. (16 U.S.C. § 1801(b)(1).) The MSA establishes eight Regional Fisheries Management Councils and authorizes them to prepare, monitor and revise fishery management plans in ways that will achieve and maintain the optimum yield from each fishery. (16 U.S.C. §1852.) The Pacific Fisheries Management Council is responsible for implementing

²⁰ An applicant that FERC has designated its non-federal representative must include an Applicant-Prepared Draft BA in its FLA according to 18 C.F.R. § 5.18(b)(3)(ii).

the MSA in California. (16 U.S.C. § 1852(a)(1)(F).) The Secretary of Commerce has oversight authority. (See 16 U.S.C. § 1854.)

The MSA was amended in 1996 to establish a new requirement to describe and identify “Essential Fish Habitat” (EFH) in each fishery management plan. (16 U.S.C. § 1855(b).) EFH is defined in the MSA regulations as “*those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.*” (50 C.F.R. § 600.10.) For Pacific salmon, EFH “*includes all those water bodies occupied or historically accessible*” in specified hydrologic units. (50 C.F.R. § 600.412.) For the purpose of EFH, NMFS uses fourth field hydrologic unit codes developed by the United States Geological Survey (USGS) as defined in the USGS publication; Hydrologic Unit Maps, Water Supply Paper 2294, 1987.²¹

The MSA requires that all federal agencies consult with NMFS on all actions and proposed actions, that are or will be permitted, funded, or undertaken by the agency (the lead agency), and that may adversely affect any EFH (16 U.S.C. § 1855(b)(2).). Comments from NMFS following consultation are advisory only; however, the lead agency must provide a written explanation to NMFS if the lead agency does not agree with NMFS’s recommendations regarding EFH. (See 16 U.S.C. 1855(b)(4)(B).)

Within the Project affected basin, the Pacific Fisheries Management Council has designated freshwater EFH for Pacific salmon. (50 C.F.R. § 660.412.) The designation does not identify specific Chinook salmon races (e.g., spring-run or fall-run) but instead is for “Pacific salmon.” As discussed above, Pacific salmon EFH “*includes all water bodies occupied or historically accessible*” in designated hydrologic units (50 C.F.R. § 660.412), and the lower Yuba River hydrologic unit (USGS HUC 18020107) is one of these designated hydrologic units (50 C.F.R., pt. 660, subpt. H, table 1.)

Based on this designation, the Project Area includes three sections of the river that are EFH for Pacific salmon. These are: 1) approximately 40.0 mi of the Yuba River from the confluence with the Feather River upstream to the confluence of the North Yuba River and Middle Yuba River; and 2) about 17.8 mi of the North Yuba River from the confluence of the North Yuba River and Middle Yuba River upstream to the NMWSE of New Bullards Bar Reservoir; and 3) about 1.5 mi of the Middle Yuba River from the confluence of the North Yuba River and Middle Yuba River upstream to an historical barrier (NMFS Website 2012; Pacific Fishery Management Council 1999; Yoshiyama et al. 2001).

However, the USACE’s Englebright Dam at River Mile (RM)²² 24.3 on the Yuba River is currently a complete physical barrier to anadromous fish upstream migration, so Pacific salmon cannot access any EFH located upstream of this dam.

²¹ The geographic extent of HUs range is from the first field, which is the largest geographic extent, to the sixth field, which is the smallest geographic extent. Fourth field Hydraulic Unit Codes divide the landscape into distinct geographic areas that are identified by eight numbers unique to that hydrologic unit.

²² In this exhibit, river miles (RM) are measured from the downstream confluence of each river moving upstream. In the Yuba River, RM 0.0 is designated at the confluence of the Yuba and Feather rivers.

On January 4, 2011, the Commission initiated informal consultation with NMFS as required by the applicable MSA regulation. (50 C.F.R. § 600.920.)

YCWA has had ongoing discussions with NMFS since mid-2009 regarding the potential effect of the Project.

The process used to address Project effects on EFH and a summary of anticipated environmental effects on EFH is described in the Applicant-Prepared Draft EFH Assessment in Volume IV of this Exhibit E.²³ YCWA anticipates that FERC will consult with NMFS under the MSA at the appropriate time in the relicensing proceeding.

1.3.15 California Native Plant Protection Act of 1977

The California Native Plant Protection Act (CNPPA) (Fish and Game Code §§ 1900 - 1913) was enacted in 1977 and authorizes the California Fish and Wildlife Commission to designate native plants within the State as rare or endangered (Fish and Game Code § 1904). Currently, 64 species, including some with the potential to occur on the Project, are listed under the CNPPA. Take of these plant species is prohibited, with the exception of certain exempted activities, including some agriculture and nursery operations, emergencies and proper notification of Cal Fish and Wildlife for vegetation removal from canals, roads, etc., and changes in land use.

YCWA identified two species listed as rare under CNPPA that have reasonable potential to be affected by the Project. These species include:

- CNPPA Rare Species:
 - Pine Hill flannelbush (*Fremontodendron californicum* ssp. *decumbens*)
 - Layne's ragwort (*Packera layneae*)

Pine Hill flannelbush is listed as endangered under the ESA, and Layne's ragwort is listed as threatened under the ESA. Neither plant species was located on the Project; therefore, the Project is not expected to impact plants listed under the CNPPA. If any plants listed on the CNPPA are found to be located on the Project, then YCWA will comply with the CNPPA.

1.3.16 Pacific Northwest Electric Power Planning and Conservation Act of 1980

The provisions of the Pacific Northwest Electric Power Planning and Conservation Act of 1980, as amended (16 U.S.C. §§ 839 - 839h) do not apply to the Project because the Project is not located within the Pacific Northwest Electric Power Planning and Conservation Area (i.e., the Columbia River Basin).

²³ An applicant that FERC has designated its non-federal representative may include a draft EFH Assessment in its FLA according to 18 C.F.R. § 5.18(b)(3)(ii). The draft EFH Assessment should contain the information described in 50 C.F.R. § 600.920(e).

1.3.17 Wilderness Act of 1984

The Project Vicinity does not include any areas that have been included in or are proposed for inclusion in the National Wilderness Preservation System under Wilderness Act of 1984, as amended (16 U.S.C. §§ 1131 - 1136).

YCWA has had ongoing discussions with the Forest Service since mid-2009 regarding the potential effects of the Project.

At this time, the Forest Service has not formally commented on the proposed Project with regards to Wilderness Areas. YCWA expects that the Forest Service will comment at the appropriate time in the relicensing proceeding, if necessary.

1.3.18 California Endangered Species Act of 1984

Under the CESA (Fish & Game Code §§ 2050 – 2069), the California Fish and Wildlife Commission may, after following specified procedures, list native bird, mammal, fish, amphibian, reptile or plant species as endangered species or threatened species (Fish and Game Code §§ 2062, 2067, 2070 - 2079).²⁴

CESA prohibits any person from importing, exporting, taking, possessing, purchasing or selling within California any species or product thereof that is listed as an endangered species or a threatened species under CESA. (Fish and Game Code § 2080.) However, Cal Fish and Wildlife may issue permits for the incidental take of CESA-listed species if the impacts of the authorized take are minimized and fully mitigated and other applicable statutory requirements are satisfied (Fish and Game Code § 2081(b)). But no such permit may be issued if its issuance would jeopardize the continued existence of the species (Fish and Game Code § 2081(c)).

If a species is listed as endangered species or threatened species under the ESA, and if the USFWS or NMFS has authorized incidental take of the species under ESA § 7 (16 U.S.C. § 1536) or ESA section 10 (16 U.S.C. § 1539), then such incidental take also is authorized by CESA if Cal Fish and Wildlife follows the statutory procedures and issues a determination that such incidental take is consistent with CESA (Fish and Game Code § 2080.1).

Through consultation with Cal Fish and Wildlife, YCWA has identified six species listed as threatened or endangered species under CESA that have reasonable potential to be affected by the Project. These species are:

- CESA Endangered Species:
 - Stebbins' morning-glory
 - Hartweg's golden sunburst

²⁴ Cal Fish and Wildlife, pursuant to its goal of maintaining viable populations of all native species, also designates "species of special concern" when in Cal Fish and Wildlife's opinion, declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. The State's species of concern designation is an administrative term and has no legal status.

- Scadden Flat checkerbloom (*Sidalcea stipularis*)
- Bald eagle
- Great gray owl (*Strix nebulosa*)
- CESA Threatened Species:
 - Sierra Nevada red fox (*Vulpes vulpes necator*)

Stebbin's morning glory and Hartweg's Golden sunburst are also listed as endangered species under the federal ESA. Bald eagle is also protected under the MBTA and BGEPA, and both bald eagle and American peregrine falcon are California FP species.

YCWA has had ongoing discussions with Cal Fish and Wildlife since mid-2009 regarding the potential effects of the Project on fish and wildlife.

At this time, Cal Fish and Wildlife has not formally commented on the proposed Project with regards to CESA. YCWA expects that Cal Fish and Wildlife will formally comment at the appropriate time in the relicensing proceeding, if necessary.

1.3.19 Forest Service's Outdoor Recreation Accessibility Guidelines of 2006, and Architectural Barriers Act Accessibility Standards

Recreation facilities on NFS land must comply with either the Forest Service's Outdoor Recreation Accessibility Guidelines (FSORAG) or Architectural Barriers Act Accessibility Standards (ABAAS). FERC, however, has no statutory role in implementing or enforcing FSORAG as it applies to its licenses. A licensee's obligation to comply with FSORAG or ABAAS exists independent of its license.

YCWA consulted with the Forest Service on FSORAG and ABAAS compliance regarding recreation facilities on NFS land.

At this time, the Forest Service has not formally commented (i.e., proposed FPA § 4(e) conditions) on the proposed Project with regards to accessibility. YCWA expects that the Forest Service will formally comment at the appropriate time in the relicensing proceeding, if necessary.

1.3.20 Americans with Disabilities Act of 2010

Public recreation facilities must comply with the Americans with Disabilities Act of 2010 as amended (ADA) (42 U.S.C. §§ 12101 - 12213) on private land. FERC, however, has no statutory role in implementing or enforcing the ADA as it applies to its licenses. A licensee's obligation to comply with the ADA exists independent of its FERC project license.

All Project recreation facilities on private land are on land owned by YCWA. The facilities will comply with the ADA.

1.4 Public Review and Comment

The Commission's regulations (18 C.F.R. § 16.8) require that an applicant consult with appropriate federal and state agencies, local governments, Indian tribes, non-governmental organizations, businesses and unaffiliated members of the public that may be interested in the proceeding before filing an application for a license. This consultation is the first step in complying with ESA, NHPA, and other federal statutes. Pre-filing consultation must be completed and documented according to the Commission's regulations.

1.4.1 Scoping

Under the Commission's regulations, issuing a licensing decision for any project first requires preparation of either an EA or an EIS, in accordance with NEPA. The preparation of an EA or EIS is supported by a scoping process to ensure the identification and analysis of all pertinent issues.

On January 4, 2011, the Commission issued a notice of commencement of proceeding stating FERC intended to prepare an EA for the Project but noting there was a possibility that an EIS would be required. At the same time, the Commission issued Scoping Document 1 (SD1). SD1 provided Relicensing Participants²⁵ with FERC's preliminary list of issues and alternatives to be addressed in an EA, or EIS, for the Project relicensing and enabled Relicensing Participants to more effectively participate in and contribute to the scoping process.

The Commission held two public scoping meetings in Marysville, California, on February 2, 2011, and conducted a site visit on February 1, 2009. The scoping meetings and site visit were noticed in a local newspaper and the Federal Register. The meetings were recorded and the transcript posted by the Commission on its Internet E-Library. The Commission requested that written comments on SD1 and YCWA's Pre-Application Document (PAD) be provided to the Commission no later than March 7, 2011.

In addition to the oral comments received during the scoping meetings, the Commission received 32 comment letters by the March 7 deadline. Eight of the letters provided comments on SD1 and 30 of the letters commented on the PAD. Table 1.4-1 lists Relicensing Participants that filed comments on SD1 and the PAD.

Table 1.4-1. List of comment letters in chronological order filed with FERC on FERC's Scoping Document 1 (SD1) and YCWA's Pre-Application Document (PAD).

| Relicensing Participant | Date of Letter | Document on Which Comments Were Filed | |
|--------------------------------|----------------|---------------------------------------|---------------------------------|
| | | FERC's Scoping Document 1 | YCWA's Pre-Application Document |
| United Auburn Indian Community | 2/1/11 | -- | X |
| Gold Country Fly Fishers | 2/9/11 | -- | X |
| Cordua Irrigation District | 2/17/11 | X | -- |
| Emerald Cove Marina | 2/28/11 | -- | X |

²⁵ For the purposes of this exhibit, "Relicensing Participants" means federal and state agencies, local governments, Indian tribes, non-governmental organizations, businesses and unaffiliated members of the public that have participated in the Yuba River Development Project relicensing.

Table 1.4-1. (continued)

| Relicensing Participant | Date of Letter | Document on Which Comments Were Filed | |
|--|----------------|---------------------------------------|---------------------------------|
| | | FERC's Scoping Document 1 | YCWA's Pre-Application Document |
| Gardner | 2/28/11 | -- | X |
| Billings | 2/28/11 | -- | X |
| Byers | 2/28/11 | -- | X |
| Collier | 2/28/11 | -- | X |
| Burton | 3/2/11 | -- | X |
| Myles and Scott | 3/2/11 | -- | X |
| United States Department of Agriculture, Forest Service | 3/2/11 | X | X |
| California Department of Fish and Wildlife | 3/2/11 | X | X |
| Gandy | 3/3/11 | -- | X |
| United States Department of Interior, National Parks Service | 3/4/11 | -- | X |
| Phillipson | 3/5/11 | -- | X |
| Foothills Water Network | 3/5/11 | X | X |
| Bodhaine | 3/6/11 | -- | X |
| Dixon | 3/6/11 | -- | X |
| Hansen | 3/7/11 | -- | X |
| Watts | 3/7/11 | -- | X |
| Fye | 3/7/11 | -- | X |
| Kurashewich | 3/7/11 | -- | X |
| Hatfield | 3/7/11 | -- | X |
| Camptonville Community Service District | 3/7/11 | -- | X |
| Federal Energy Regulatory Commission | 3/7/11 | -- | X |
| United State Department of Interior, Fish and Wildlife Service | 3/7/11 | X | X |
| State Water Resources Control Board | 3/7/11 | X | X |
| Yuba County Water Agency | 3/7/11 | X | -- |
| United States Department of Commerce, National Oceanic Atmospheric and Administration, National Marine Fisheries Service | 3/7/11 | X | X |
| Yuba County Fish and Game Commission | 3/7/11 | -- | X |
| Camptonville Community Partnership | 7/29/09 | -- | X |
| Feather River Chapter of Trout Unlimited | 3/10/11 | -- | X |
| Total | 32 | 8 | 30 |

Following the Commission's review of oral comments during the February 2 scoping meetings and written comments on SD1 and the PAD, on April 18, 2011, the Commission issued Scoping Document 2 (SD2) that replaced SD1.

1.4.2 Interventions

At this time, the Commission has not granted intervention in the relicensing proceeding to any party.

1.4.3 Cooperating Agency Status

On January 4, 2011, the Commission invited agencies with jurisdiction or special expertise with respect to environmental issues who would like cooperating status for the preparation of the NEPA environmental document to so notify the Commission.

At this time, no agency has requested cooperating agency status.

1.4.4 Relicensing Studies

1.4.4.1 FERC's Determination on Revised Study Plan

Beginning in July 2009, almost 2 years prior to filing its Revised Study Plan with FERC, YCWA began to meet with Relicensing Participants to familiarize them with the Project and its operations; discuss process; identify issues; and, most importantly, to collaboratively develop study proposals. After over 30 meetings, YCWA filed its Revised Study Plan with FERC on August 17, 2011. Column A in Table 1.4-2 lists the 42 studies proposed by YCWA in its Revised Study Plan.

Table 1.4-2. Studies proposed by YCWA in its Revised Study Plan and subsequently modified, including new studies added by FERC.

| Column A | | | Columns B, C and D | | | Column E | Columns F and G | | Columns H and I | | Column J | Columns K and L | | Column M | Column N |
|---------------------|--|---|---|----------|-------|---|--|---------|--|----------|---|---|-------|---|---|
| Study Number | Study Description | Proposed in YCWA's August 17, 2011 Revised Study Plan | Approved, Modified or Added by FERC's September 30, 2011 Study Plan Determination | | | Modified by FERC's December 8, 2011 Study Plan Modification | Amended or Revised by FERC's December 28, 2011 Formal Study Dispute Resolution Determination | | Approved or Modified by FERC's May 14, 2012 Modified Studies Determination | | Modified by FERC's July 24, 2012 Study Plan Determination | Modified or Added by FERC's March 29, 2013 Study Plan Determination | | Approved by FERC's June 17, 2013 Study Plan Determination | Approved by FERC's August, 22,2013 Study Plan Determination |
| | | | Approved | Modified | Added | Modified | Amended | Revised | Approved | Modified | Modified | Modified | Added | Approved | Approved |
| GEOLOGY AND SOILS | | | | | | | | | | | | | | | |
| 1.1 | Channel Morphology Upstream of Englebright Reservoir ¹ | X | X | -- | -- | X | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1.2 | Channel Morphology Downstream of Englebright Dam | X | -- | X | -- | -- | -- | -- | X | -- | -- | X | -- | -- | -- |
| WATER RESOURCES | | | | | | | | | | | | | | | |
| 2.1 | Hydrologic Alteration | X | -- | X | -- | -- | X | -- | -- | -- | -- | X | -- | -- | -- |
| 2.2 | Water Balance/Operations Model | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2.3 | Water Quality | X | -- | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2.4 | Bioaccumulation ¹ | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2.5 | Water Temperature Monitoring ¹ | X | X | -- | -- | -- | X | -- | -- | -- | -- | -- | -- | -- | -- |
| 2.6 | Water Temperature Model | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| AQUATIC RESOURCES | | | | | | | | | | | | | | | |
| 3.1 | Aquatic Macroinvertebrates Upstream of Englebright Reservoir | X | -- | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3.2 | Aquatic Macroinvertebrates Downstream of Englebright Dam | X | -- | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3.3 | Special-Status Aquatic Mollusks | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3.4 | Special-Status Amphibians – Foothill Yellow-Legged Frog Surveys ¹ | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3.5 | Special-Status Amphibians – Foothill Yellow-Legged Frog Habitat Modeling | X | X | -- | -- | -- | -- | -- | -- | -- | -- | X | -- | -- | -- |
| 3.6 | Special-Status Turtles – Western Pond Turtle | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3.7 | Reservoir Fish Populations | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3.8 | Stream Fish Populations Upstream of Englebright Reservoir ² | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3.9 | Non-ESA-Listed Fish Populations Downstream of Englebright Dam | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3.10 | Instream Flow Upstream of Englebright Reservoir | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3.11 | Entrainment ² | X | -- | X | -- | -- | -- | -- | -- | X | -- | X | -- | -- | -- |
| 3.12 | New Colgate Powerhouse Ramping | -- | -- | -- | X | -- | -- | -- | X | -- | -- | -- | -- | -- | -- |
| 3.13 | Focused 2013 Foothill Yellow-legged Frog Surveys | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | X | -- | -- |
| 3.14 | Focused 2013 Western Pond Turtle Surveys | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | X | -- | -- |
| WILDLIFE RESOURCES | | | | | | | | | | | | | | | |
| 4.1 | Special-Status Wildlife – California Wildlife Habitat Relationships | X | -- | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4.2 | Special-Status Wildlife – Bats | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| BOTANICAL RESOURCES | | | | | | | | | | | | | | | |
| 5.1 | Special-Status Plants | X | X | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Table 1.4-2. (continued)

| Column A | | | Columns B, C and D | | | Column E | Columns F and G | | Columns H and I | | Column J | Columns K and L | | Column M | Column N |
|--|---|---|---|----------|-------|---|--|---------|--|----------|---|---|-------|---|---|
| Study Number | Study Description | Proposed in YCWA's August 17, 2011 Revised Study Plan | Approved, Modified or Added by FERC's September 30, 2011 Study Plan Determination | | | Modified by FERC's December 8, 2011 Study Plan Modification | Amended or Revised by FERC's December 28, 2011 Formal Study Dispute Resolution Determination | | Approved or Modified by FERC's May 14, 2012 Modified Studies Determination | | Modified by FERC's July 24, 2012 Study Plan Determination | Modified or Added by FERC's March 29, 2013 Study Plan Determination | | Approved by FERC's June 17, 2013 Study Plan Determination | Approved by FERC's August, 22,2013 Study Plan Determination |
| | | | Approved | Modified | Added | Modified | Amended | Revised | Approved | Modified | Modified | Modified | Added | Approved | Approved |
| RIPARIAN, WETLANDS AND LITTORAL HABITAT | | | | | | | | | | | | | | | |
| 6.1 | Riparian Habitat Upstream of Englebright Reservoir ^{1,4} | X | -- | X | -- | X | -- | -- | X | -- | -- | -- | -- | -- | -- |
| 6.2 | Riparian Habitat Downstream of Englebright Dam | X | -- | X | -- | -- | -- | -- | X | -- | -- | -- | -- | -- | -- |
| 6.3 | Wetlands | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| THREATENED, ENDANGERED AND FULLY PROTECTED SPECIES | | | | | | | | | | | | | | | |
| 7.1 | ESA-Listed Plants | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7.2 | Narrows 2 Powerhouse Intake | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7.3 | ESA-Listed Amphibians – California Red-Legged Frog | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7.4 | ESA-Listed Wildlife – Valley Elderberry Longhorn Beetle | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7.5 | CESA-Listed Plants | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7.6 | CESA-Listed and Fully Protected Wildlife – California Wildlife Habitat Relationships | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7.7 | CESA-Listed and Fully Protected Wildlife – Bald Eagle | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7.8 | ESA/CESA-Listed Salmonids Downstream of Englebright Dam | X | X | -- | -- | -- | X | -- | -- | -- | -- | -- | -- | -- | -- |
| 7.9 | North American Green Sturgeon Downstream of Englebright Dam | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7.10 | Instream Flow Downstream of Englebright Dam | X | -- | X | -- | -- | X | -- | -- | -- | -- | -- | -- | -- | -- |
| 7.11 | Fish Behavior and Hydraulics Near Narrows 2 Powerhouse ³ | X | -- | X | -- | -- | -- | X | -- | -- | X | X | -- | -- | -- |
| 7.11a | Radio Telemetry Study of Spring- and Fall-run Chinook Salmon Downstream of Narrows 2 Powerhouse | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | X | -- | X |
| 7.12 | Evaluation of Project Effects on Daguerre Point Dam and Hallwood-Cordua Fish Facilities | -- | -- | -- | X | -- | -- | -- | -- | X | -- | -- | -- | -- | -- |
| 7.13 | Fish Stranding Associated with Shutdown of Narrows 2 Powerhouse Partial Bypass | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | X | X | -- |
| RECREATIONAL RESOURCES | | | | | | | | | | | | | | | |
| 8.1 | Recreation Use and Visitor Surveys | X | X | -- | -- | -- | -- | -- | -- | -- | -- | X | -- | -- | -- |
| 8.2 | Recreational Flow ¹ | X | X | -- | -- | -- | -- | -- | -- | -- | -- | X | -- | -- | -- |
| LAND USE | | | | | | | | | | | | | | | |
| 9.1 | Primary Project Roads and Trails | X | X | -- | -- | -- | -- | -- | -- | -- | -- | X | -- | -- | -- |
| SOCIO-ECONOMIC RESOURCES | | | | | | | | | | | | | | | |
| 10 | None | | | | | | | | | | | | | | |
| AESTHETIC RESOURCES | | | | | | | | | | | | | | | |
| 11.1 | Visual Quality | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| CULTURAL RESOURCES | | | | | | | | | | | | | | | |
| 12.1 | Historic Properties ¹ | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Table 1.4-2. (continued)

| Column A | | | Columns B, C and D | | | Column E | Columns F and G | | Columns H and I | | Column J | Columns K and L | | Column M | Column N |
|------------------|--|---|---|----------|-------|---|--|---------|--|----------|---|---|-------|---|---|
| Study Number | Study Description | Proposed in YCWA's August 17, 2011 Revised Study Plan | Approved, Modified or Added by FERC's September 30, 2011 Study Plan Determination | | | Modified by FERC's December 8, 2011 Study Plan Modification | Amended or Revised by FERC's December 28, 2011 Formal Study Dispute Resolution Determination | | Approved or Modified by FERC's May 14, 2012 Modified Studies Determination | | Modified by FERC's July 24, 2012 Study Plan Determination | Modified or Added by FERC's March 29, 2013 Study Plan Determination | | Approved by FERC's June 17, 2013 Study Plan Determination | Approved by FERC's August, 22,2013 Study Plan Determination |
| | | | Approved | Modified | Added | Modified | Amended | Revised | Approved | Modified | Modified | Modified | Added | Approved | Approved |
| TRIBAL RESOURCES | | | | | | | | | | | | | | | |
| 13.1 | Native American Traditional Cultural Properties ¹ | X | X | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Subtotal | | 42 | 31 | 11 | 2 | 2 | 4 | 1 | 4 | 2 | 1 | 8 | 4 | 1 | 1 |
| Total | | 48 | | | | | | | | | | | | | |

¹ YCWA, at its own risk, initiated this study prior to FERC's September 30, 2011 Study Determination.

² On September 20, 2013, YCWA filed a letter advising FERC that YCWA and Relicensing Participants agreed to additional analysis related to Studies 3.8 and 3.11.

³ In the Revised Study Plan, this study was named "*Assessment of Narrows 2 Powerhouse as Barrier to Anadromous Fish Upstream Migration.*" It was subsequently renamed to reflect the changed focus of the study.

⁴ On July 26, 2013, YCWA filed a letter advising FERC that YCWA and Relicensing Participants agreed to additional analysis related to Study 6.1.

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On September 30, 2011, FERC issued a Study Plan Determination for YCWA's Yuba River Development Project. FERC amended its Determination on December 8, 2011. The Determination, as amended, approved without modification 30 of the 42 studies in YCWA's Revised Study Plan, approved with modifications 12 of the studies, and added two new studies, for a total of 44 studies. Columns B through E in Table 1.4-2 list the approved, modified and added studies.

FERC's September 30, 2011 Determination, as amended, required YCWA modify existing studies or develop new studies. YCWA filed these studies with FERC, which approved or modified and approved them on May 14, 2012 and July 24, 2012. Columns H through J in Table 1.4-2 list these studies.

1.4.4.2 FERC's Determination Regarding Study Disputes

On October 20, 2011, NMFS filed a formal dispute with FERC's September 30, 2011, Study Determination, as amended. The dispute included 39 study elements, all of which focused on anadromous fish.

On December 28, 2011, FERC issued a Formal Study Disputes Resolution Determination resolving the disputed studies. FERC's Determination modified four studies and revised one study. Columns F and G in Table 1.4-2 lists the modified and revised studies.

Subsequently, FERC issued study determinations on May 14 and July 24, 2012 that approved and modified studies. Refer to Columns H, I and J in Table 1.4-2 for a list of these modifications and approvals.

1.4.4.3 FERC's Determination on Initial Study Report

YCWA filed with FERC an Initial Study Report on December 3, 2012, held an Initial Study Report (ISR) meeting on December 12, 2012, and filed with FERC an ISR meeting summary on December 27, 2012.

Seven letters, which provided comments on YCWA's ISR and ISR meeting summary were filed with the FERC by the filing date deadline of January 28, 2013. Table 1.4-3 lists each commenter and the date of its comment letter.

Table 1.4-3. Comment letters filed with FERC regarding YCWA's Yuba River Development Project's Initial Study Report and meeting summary.

| Commenter | Date of Comment Letter |
|---|-------------------------------|
| United States Department of Interior, National Park Service ¹ | 1/25/13 ¹ |
| United States Department of Agriculture, Forest Service | 1/25/13 |
| State Water Resources Control Board | 1/25/13 |
| Foothills Water Network (FWN) ² | 1/27/13 |
| United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service ³ | 1/28/13 ³ |

Table 1.4 -3. (continued)

| Commenter | Date of Comment Letter |
|---|------------------------|
| United States Department of Interior, Fish and Wildlife Service | 1/28/13 |
| California Department of Fish and Wildlife | 1/28/13 |
| Total | 7 |

¹ The NPS' letter was initially filed with FERC on December 27, 2012 and refiled without modification, including the date of the letter, on January 25, 2013.

² Individual stakeholders that signed FWN's January 27, 2013 letter included FWN, California Sportfishing Protection Alliance, Trout Unlimited, American Whitewater, American Rivers, South Yuba River Citizens League, Sierra Club (Mother Lode Chapter), and Northern California Federation of Fly Fishers.

³ In a letter dated and filed with FERC on February 14, 2013, the NMFS filed errata to its January 28, 2013 letter.

On March 29, 2013, FERC issued a *Determination on Requests for Modifications to the Yuba River Hydroelectric Project Study Plan* that modified eight studies and added three new studies. In a subsequent conference call, FERC added one new study. Columns K and N in Table 1.4-2 list the modified and approved new studies, respectively.

1.4.4.4 FERC's Determination on Updated Study Report

YCWA filed with FERC an Updated Study Report on December 3, 2013, and plans to hold an Updated Study Report meeting on December 17, 2013, and file with FERC an Updated Study Report meeting summary by December 31, 2013.

[Relicensing Participants – This section will be completed in the Final License Application. YCWA]

1.4.4.5 Requested Study Modifications or New Studies Outside of Initial and Updated Study Report Process

On July 3, 2013, Cal Fish and Wildlife and the USFWS each filed with FERC a request for a new Narrows 2 Powerhouse Intake Study. In letters dated July 17 and July 23, 2013 YCWA filed responses to Cal Fish and Wildlife's and USFWS' requests, respectively. As of the time the draft of the Application for New License is filed, FERC has not issued a determination regarding Cal Fish and Wildlife's and USFWS' new study requests.

1.4.4.6 Study Status

Table 1.4-4 shows that 43 of the 48 FERC-approved studies have been completed. A detailed description of each of the FERC-approved studies in progress is described in the applicable resource sections in Section 3.3 of this Exhibit E.

Table 1.4-4. Status of studies as of filing of the License Application.

| Study No. | Study Description/ Technical Memorandum | Column A | Column B | Column C |
|--|--|---|--|---|
| | | Study Complete | Study in Progress | |
| | | Date YCWA Posted the Final Technical Memorandum to the Relicensing Website ¹ | Date YCWA Posted an Interim Technical Memorandum to the Relicensing Website ¹ | Date YCWA Forecasts the Study Will be Complete ² |
| GEOLOGY AND SOILS | | | | |
| 1.1 | Channel Morphology Upstream of Englebright Reservoir | October 31, 2013 | -- | -- |
| 1.2 | Channel Morphology Downstream of Englebright Dam | June 5, 2013 | -- | -- |
| WATER RESOURCES | | | | |
| 2.1 | Hydrologic Alteration | July 3, 2013 | -- | -- |
| 2.2 | Water Balance/Operations Model | April 5, 2013 | -- | -- |
| 2.3 | Water Quality | February 7, 2013 | -- | -- |
| 2.4 | Bioaccumulation | September 25, 2012 | -- | -- |
| 2.5 | Water Temperature Monitoring | September 24, 2013 | -- | -- |
| 2.6 | Water Temperature Model | October 31, 2013 | -- | -- |
| AQUATIC RESOURCES | | | | |
| 3.1 | Aquatic Macroinvertebrates Upstream of Englebright Reservoir | April 25, 2013 | -- | -- |
| 3.2 | Aquatic Macroinvertebrates Downstream of Englebright Dam | April 25, 2013 | -- | -- |
| 3.3 | Special-Status Aquatic Mollusks | November 29, 2012 | -- | -- |
| 3.4 | Special-Status Amphibians – Foothill Yellow-Legged Frog Surveys | May 16, 2013 | -- | -- |
| 3.5 | Special-Status Amphibians – Foothill Yellow-Legged Frog Habitat Modeling | November 27, 2013 | -- | -- |
| 3.6 | Special-Status Turtles – Western Pond Turtle | May 16, 2013 | -- | -- |
| 3.7 | Reservoir Fish Populations | September 28, 2012 | -- | -- |
| 3.8 | Stream Fish Populations Upstream of Englebright Reservoir | November 6, 2013 | -- | -- |
| 3.9 | Non-ESA-Listed Fish Populations Downstream of Englebright Dam | May 28, 2013 | -- | -- |
| 3.10 | Instream Flow Upstream of Englebright Reservoir | May 24, 2013 | -- | -- |
| 3.11 | Entrainment | November 27, 2013 | -- | -- |
| 3.12 | New Colgate Powerhouse Ramping | December 21, 2012 | -- | -- |
| 3.13 | Focused 2013 Foothill Yellow-legged Frog Surveys | October 10, 2013 | -- | -- |
| 3.14 | Focused 2013 Western Pond Turtle Surveys | October 10, 2013 | -- | -- |
| WILDLIFE RESOURCES | | | | |
| 4.1 | Special-Status Wildlife – California Wildlife Habitat Relationships | September 6, 2012 | -- | -- |
| 4.2 | Special-Status Wildlife – Bats | November 27, 2012 | -- | -- |
| BOTANICAL RESOURCES | | | | |
| 5.1 | Special-Status Plants | October 29, 2012 | -- | -- |
| RIPARIAN, WETLANDS AND LITTORAL HABITATS | | | | |
| 6.1 | Riparian Habitat Upstream of Englebright Reservoir | -- | May 31, 2013 | January 15, 2014 |
| 6.2 | Riparian Habitat Downstream of Englebright Dam | June 25, 2013 | -- | -- |
| 6.3 | Wetlands | September 29, 2012 | -- | -- |

Table 1.4-4. (continued)

| Study No. | Study Description/ Technical Memorandum | Column A | Column B | Column C |
|--|---|---|--|--|
| | | Study Complete | Study in Progress | |
| | | Date YCWA Posted the Final Technical Memorandum to the Relicensing Website ¹ | Date YCWA Posted an Interim Technical Memorandum to the Relicensing Website ¹ | Date YCWA Forecasts the Study Will be Complete ² |
| THREATENED, ENDANGERED AND FULLY PROTECTED SPECIES | | | | |
| 7.1 | ESA-Listed Plants | December 26, 2012 | -- | -- |
| 7.2 | Narrows 2 Powerhouse Intake Extension | November 27, 2013 | -- | -- |
| 7.3 | ESA-Listed Amphibians – California Red-Legged Frog | June 13, 2013 | -- | -- |
| 7.4 | ESA-Listed Wildlife – Valley Elderberry Longhorn Beetle | November 19, 2012 | -- | -- |
| 7.5 | CESA-Listed Plants | September 12, 2012 | -- | -- |
| 7.6 | CESA-Listed and Fully Protected Wildlife – California Wildlife Habitat Relationships | September 29, 2012 | -- | -- |
| 7.7 | CESA-Listed and Fully Protected Wildlife – Bald Eagle | October 12, 2012 | -- | -- |
| 7.8 | ESA/CESA-Listed Salmonids Downstream of Englebright Dam | April 29, 2013 | -- | -- |
| 7.9 | Green Sturgeon Downstream of Englebright Dam | April 25, 2013 | -- | -- |
| 7.10 | Instream Flow Downstream of Englebright Dam | September 13, 2013 | -- | -- |
| 7.11 | Fish Behavior and Hydraulics Near Narrows 2 Powerhouse | -- | December 2, 2012 | Interim - January 31, 2014 ³ Final - March 31, 2015 ³ |
| 7.11a | Radio Telemetry Study of Spring- and Fall-run Chinook Salmon Downstream of Narrows 2 Powerhouse | -- | -- | |
| 7.12 | Evaluation of Project Effects on Daguerre Point Dam and Hallwood-Cordua Fish Facilities | May 15, 2013 | -- | -- |
| 7.13 | Fish Stranding Associated with Shutdown of Narrows 2 Powerhouse Partial Bypass | -- | -- | February 28, 2014 |
| RECREATION RESOURCES | | | | |
| 8.1 | Recreation Use and Visitor Surveys | April 15, 2013 | -- | -- |
| 8.2 | Recreational Flow | -- | October 29, 2012 | June 30, 2014 |
| LAND USE | | | | |
| 9.1 | Primary Project Roads and Trails | July 9, 2013 | -- | -- |
| AESTHETIC RESOURCES | | | | |
| 10.1 | Visual Quality | September 18, 2012 | -- | -- |
| SOCIO-ECONOMIC RESOURCES | | | | |
| 11 | None | | | |
| CULTURAL RESOURCES | | | | |
| 12.1 | Historic Properties | April 25, 2013 | -- | -- |
| TRIBAL RESOURCES | | | | |
| 13.1 | Native American Traditional Cultural Properties | February 27, 2013 | -- | -- |
| Subtotal | | 43 | 3 | 4 |
| Total | | 48 Studies and 47 Technical Memoranda | | |

¹ Although in some instances, YCWA may have posted data or an interim technical memorandum earlier than the date listed in Columns A or B, this column reflects the date that the current version of the technical memorandum, including attachments, was posted to the Relicensing Website as of December 3, 2013.

² YCWA forecasts completing the remaining studies by the date listed in Column C.

³ As provided in the FERC-approved studies, an interim technical memorandum for Studies 7.11 and 7.11a will be combined into a single interim technical memorandum that will be posted to YCWA's Relicensing Website by January 31, 2014; and the final technical memoranda for Studies 7.11 and 7.11a will be combined into a single final technical memorandum that will be filed with FERC by March 31, 2015.

A final technical memorandum for each completed study is included in Appendix E6 to this Exhibit E. Each technical memorandum includes an executive summary; a description of study goals and objectives; methods and results; a discussion of study results; a description of study-specific consultation and collaboration undertaken by YCWA; a list of variances to the FERC-approved study; a list of attachments to the technical memorandum; and references. Similar interim technical memoranda are included in Appendix E6 for Study 6.1, *Riparian Habitat Upstream of Englebright Reservoir*; Study 7.11, *Fish Behavior and Hydraulics Near Narrows 2 Powerhouse*, and Study 8.2, *Recreation Flow*.

1.4.5 Comments on the Draft License Application

On December 3, 2013, YCWA filed with FERC and made available to Relicensing Participants a draft of its Application for New License.

[Relicensing Participants – This section will be completed in the FLA. YCWA]

1.4.6 Comments on the Final License Application

FERC will solicit and compile comments on the Final License Application after it is filed.

1.4.7 Comments on the Draft Environmental Assessment

FERC will solicit, compile and respond to comments received on the draft EA, or draft EIS if FERC chooses to prepare an EIS instead of an EA, in the final environmental document.

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