

## **5.0 KNOWN OR POTENTIAL ADVERSE EFFECTS AND ISSUES, AND PROPOSED STUDIES**

This Section includes three subsections. Section 5.1 describes any known or potential adverse effects and issues associated with the Project. Section 5.2 presents the analysis performed by Licensees to determine if the existing information presented in Section 4.0 (based on very extensive reference data) is sufficient to address the issues and to inform the development of requirements in the new license. Section 5.3 describes the studies proposed by Licensees to gather additional information, if more information is needed. Licensees' goal is to demonstrate that the extensive existing information described in Section 4.0, together with the information to be developed by Licensees' proposed studies, is: (1) adequate to describe existing conditions (i.e., the Environmental Baseline), and (2) to assist FERC, Licensees and others in the development of requirements for the new license.

### **5.1 KNOWN OR POTENTIAL ADVERSE EFFECTS AND ISSUES**

Identification of issues is a key step in the relicensing process because they represent specific concerns or questions that may need to be addressed. Once issues are identified, existing information in Section 4.0 can be assessed for adequacy, and studies needed to augment existing information can be identified.

The issues listed in this Section were developed by Licensees based on their knowledge of Project operations, Licensees' review of the existing information, and input from respondents to the Pre-PAD questionnaire that Licensees sent to potential interested parties during preparation of the PAD. The questionnaire, which Licensees mailed to over 150 separate individuals, agencies and organizations, requested that the party identify: (1) any existing, relevant and reasonably available information regarding the Project and resources potentially affected by the Project in the party's possession; (2) the name of any other party that may have existing, relevant and reasonably available information regarding the Project; (3) a description of any known or potential Project adverse impacts; (4) a description of any specific concerns related to environmental resources associated with the Project relicensing; and (5) a list of any potential studies or information needs the party believed are necessary. Licensees received 21 responses to the Pre-PAD questionnaire. Of the respondents, NMFS, FEMA, EPA, CDFW, OHP, SWRCB, Castaic Lake Water Agency, and Sierra Club identified issues or potential studies, or both. The Pre-PAD questionnaire, a list of the parties that responded to the Pre-PAD questionnaire, and a copy of the responses are included in Appendix B.

Based on their own experience in operating the Project for over 40 years, Licensees' review of the existing information, and responses to Licensees' Pre-PAD questionnaire, Licensees identified 30 potential issues. Table 5.1-1 presents the identified potential issues and existing information by resource area and the corresponding study plan recommendation as necessary. In some instances, Licensees combined or re-worded issues identified by respondents to the Pre-PAD questionnaire.

**Table 5.1-1. Identified Potential Issues, Existing Information, and Licensees' Proposed Studies**

Identified Issues	Pertinent Existing Information	Licensees' Identified Data Gap	Licensees' Proposed Study to Close Data Gap
<b>AIR QUALITY AND NOISE</b>			
Effects of Project O&M on air quality	Area designation maps for criteria pollutants; CAL-EPA 2014 Los Angeles County General Plan 2015 Study of net GHG emissions at a new reservoir; Pelletier et al 2009 Assessment of GHG emissions at freshwater reservoirs; United Nations 2008	None. Existing information is adequate to address effects of continued Project O&M, and Licensees do not propose any new construction.	None
Effects of Project O&M on noise	Los Angeles County General Plan 2015	None. Existing information is adequate to address effects of continued Project O&M, and Licensees do not propose any new construction.	None
<b>GEOLOGY AND SOILS</b>			
Effects of Project related Operation on streamflows and stream channel geomorphology, including sediment and LWM, in Piru Creek <sup>1</sup>	Pyramid Lake, USFS Boat Dock Removal Project, January 29, 2008 Enclosures for Boat Dock Sediment Removal Project, License #2426 – Pyramid Lake Middle Piru Creek Arroyo Toad ( <i>Bufo californicus</i> ) (Clutch Surveys 2005; Sandburg 2006)	Information regarding habitat, including channel form and occurrence of sediment for trout spawning and LWM in Piru Creek could be useful to better characterize downstream effects.	Pyramid Reach Fish Populations Study

**Table 5.1-1. Identified Potential Issues, Existing Information, and Licensees' Proposed Studies (continued)**

Identified Issues	Pertinent Existing Information	Licensees' Identified Data Gap	Licensees' Proposed Study to Close Data Gap
<b>WATER RESOURCES</b>			
Effects of Project on the quantity and timing of streamflow in Project-affected reaches <sup>2</sup>	Quantity of reservoir flows routinely monitored. DWR Monthly Operations Data 2010 through 2015; DWR Water Data Library 2010 through 2015 MWD Annual Reports 2010 through 2015 USGS Water Year summaries 2004 and 2005	None. Existing information is adequate. Licensees record flows in streams and through Project facilities, and reservoir stage.	None
Effects of Project O&M and recreation use on water quality, including water temperature, mercury, bromide and chloride <sup>2,3</sup>	Quality of reservoir flows routinely monitored (DWR Water Data Library 2010 through 2015) MWD Annual Reports 2010 through 2015	None. Existing information is adequate. Licensees collect water quality information from Project reservoirs routinely.	None
<b>FISH AND AQUATIC RESOURCES</b>			
Effects of Project O&M and recreation use on the diversity, quantity and composition of fish species and BMI in Project reservoirs <sup>1</sup>	CDFW conducts annual rainbow trout stocking. CDFW or a DWR consultant has conducted creel surveys in Pyramid Lake since 2000. CDFW conducts game fish surveys in Pyramid Lake. Both Quail Lake and Pyramid Lake are typically operated within a narrow range of storage and water surface elevation, close to its maximum elevation; Elderberry Forebay is operated as a fluctuating reservoir for Castaic Powerhouse, and is closed to the public.	None with regard to BMI and Pyramid Lake and Elderberry Forebay. Pyramid Lake and Quail Lake have very little fluctuation and would not affect BMI or fish spawning. CDFW routinely collects fish data for Pyramid Lake, and Elderberry Forebay is closed to the public for safety considerations. Information is needed regarding the current fish populations in Quail Lake.	Quail Lake Fish Populations Study

**Table 5.1-1. Identified Potential Issues, Existing Information, and Licensees' Proposed Studies (continued)**

Identified Issues	Pertinent Existing Information	Licensees' Identified Data Gap	Licensees' Proposed Study to Close Data Gap
Effects of Project O&M on special-status fish including arroyo chub and Santa Ana sucker and BMI in Piru Creek <sup>1</sup>	Outflows from Pyramid Dam to Piru Creek match natural inflow into Pyramid Lake to the extent operationally feasible and consistent with safety requirements (DWR 2007, 2014). One record of Santa Ana sucker from 1975 located near the Blue Point Campground (CDFW 2015).	None with regard to BMI; outflow equals inflow. However, information is needed regarding fishes in Piru Creek and habitat conditions.	Pyramid Reach Fish Populations Study
Effects of continued operations leading to Project entrainment of eggs and larval fish through the hydropower intake(s) in Pyramid Lake and the related effect on angling opportunity.	CDFW conducts annual rainbow trout stocking. CDFW or a DWR consultant has conducted creel surveys in Pyramid Lake since 2000. CDFW conducts game fish surveys in Pyramid Lake.	None. Existing information is adequate. This includes information regarding fish stocking and creel surveys in Pyramid Lake.	None
Effects of continued Project operations on WPT <sup>1</sup>	There are numerous records of WPT from Pyramid reach, a portion of which is surveyed annually for this and other species (CDFW 2015; Environmental Science Associates 2010, 2011, 2012, 2013, 2104, 2015).	None. Existing information, with incidental observations during relicensing studies, is adequate.	None. Occurrence data will be collected during conduction of other studies.
Effects of Project O&M on special status amphibian and snake species (not ESA-listed)	There are no recent observations of FYLF in the Project vicinity. Records indicate western spadefoot three miles south-southwest of Elderberry Forebay in 2003. Repeated observations of two-striped garter snake have been made within the Project vicinity in recent surveys. No records of south coast garter snake have been discovered.	Recent observations of special status amphibians and snakes in the Project vicinity are limited and most areas have not been surveyed.	Surveys for special status species will be conducted within the proposed Project Boundary and in Piru Creek downstream of Pyramid Lake in reaches that are not already surveyed annually for special status species.

**Table 5.1-1. Identified Potential Issues, Existing Information, and Licensees' Proposed Studies (continued)**

Identified Issues	Pertinent Existing Information	Licensees' Identified Data Gap	Licensees' Proposed Study to Close Data Gap
Effects of Project O&M and recreation on the introduction and spread of AIS <sup>1</sup>	Licensees have determined that 14 AIS are known to occur or have the potential to occur in the Project vicinity (USGS 2015a; Cal-IPC 2015a; DBW 2015; CDFW 2015a).	Information regarding the occurrence of AIS in Pyramid Lake will inform the potential for Project operations to introduce these species downstream into Piru Creek.	Aquatic Invasive Species Study
<b>WILDLIFE AND BOTANICAL RESOURCES WETLANDS, RIPARIAN AND LITTORAL HABITATS</b>			
Effects of Project O&M and recreation use on special-status plants, wetlands and riparian habitats	Environmental Science Associates (2014) surveyed the margins of Quail Lake and Pyramid Lake in 2014.	Information regarding the current occurrence of special-status plants, wetlands and riparian within the proposed Project boundary is needed.	Botanical Resources Study
Effects of Project O&M and recreation use on the spread of NNIP	Environmental Science Associates (2014) surveyed the margins of Quail Lake and Pyramid Lake in 2014.	Information regarding the current occurrence of NNIP in the proposed Project boundary is needed.	Non-native Invasive Plant Species Study.
Effects of Project O&M and recreation use on special-status wildlife <sup>1</sup>	CNDDB (2015), Aspen (2003, 2007), and Environmental Science Associates (2015) document surveys and habitat evaluations for special-status wildlife in the Project vicinity.	Information regarding the current distribution of special-status wildlife including bats and wintering/nesting eagles.	Special-Status Terrestrial Wildlife Species Study

**Table 5.1-1. Identified Potential Issues, Existing Information, and Licensees' Proposed Studies (continued)**

Identified Issues	Pertinent Existing Information	Licensees' Identified Data Gap	Licensees' Proposed Study to Close Data Gap
<b>FEDERAL ENDANGERED SPECIES ACT LISTED AND CANDIDATE THREATENED AND ENDANGERED SPECIES</b>			
Effects of Project O&M and recreation use on the ESA-listed arroyo toad <sup>1,3</sup>	Numerous surveys and habitat evaluations for arroyo toad have been performed, including annual surveys in Piru Creek and surveys approximately every five years immediately upstream of Elderberry Forebay (Frank Hovore & Associates 1999, 2003, 2005; Aspen Environmental Group 2005, 2007; DWR 2003, 2005; Sandburg 2006; Power Engineers, Inc. 2009, 2010, 2011, 2013; Environmental Science Associates 2010, 2011, 2012, 2013, 2014, 2015a, 2015b).	None. Existing information is adequate. Substantial information exists regarding the current distribution and abundance of arroyo toad, suitability of habitats in areas affected by the Project, and the response of the arroyo toad population in Piru Creek downstream of Pyramid Dam to changes in Project operation that were initiated in 2005 to benefit arroyo toad.	None
Effects of Project O&M and recreation on the ESA-listed vernal pool fairy shrimp	There are no documented vernal pools in the Project area and no records of vernal pool fairy shrimp in the CNDDDB from the Project vicinity (CDFW 2015). The species does not occur in perennial waters or in streams; therefore, there is no potential that the species could be affected by Project reservoir O&M.	Information regarding the presence of potential habitat (i.e., small vernal pools that could support vernal pool species) within the proposed Project boundary and information on locations of normal Project O&M activities in relation to these habitats. This information will be collected and evaluated as part of proposed habitat survey studies.	Botanical Resources Study and Special-Status Terrestrial Wildlife Species Study, will document any occurrence of vernal pools and any observations of vernal pool fairy shrimp.

**Table 5.1-1. Identified Potential Issues, Existing Information, and Licensees' Proposed Studies (continued)**

Identified Issues	Pertinent Existing Information	Licensees' Identified Data Gap	Licensees' Proposed Study to Close Data Gap
Effects of Project O&M and recreation on the ESA-listed unarmored three-spine stickleback	Unarmored three-spine stickleback occurred historically in the upper reaches of Piru Creek and Castaic Creek; however, these populations have been extirpated (USFWS 1985). Occurrences have been reported in Castaic Creek near the confluence with the Santa Clara River, well outside the Project boundary (USFWS 2009).	None. Existing information is adequate to indicate that the species does not occur in any areas affected by Project O&M. Flow releases to Castaic Creek under contracted water deliveries are not associated with or affected by Project operations.	None
Effects of Project O&M on the ESA-listed CRLF <sup>1</sup>	Surveys or habitat assessments for CRLF have been performed in some locations, including annual surveys with designated Critical Habitat on Piru Creek (DWR 2003; Aspen Environmental Group 2005, 2007; Sandburg 2006; Environmental Science Associates 2010, 2011, 2012, 2013, 2014, 2015a).	Existing information is adequate for Piru Creek, including the portion of the stream that is designated as Critical Habitat, where CRLF has not been detected during annual surveys since 2010. There are no known records of CRLF from Castaic Creek upstream of Elderberry Forebay. The suitability of other potential habitats within the proposed Project boundary has not been assessed.	ESA-Listed Amphibians – California Red-legged Frog Study
Effects of Project O&M and recreation on the ESA-listed California condor	California condors have been observed flying over Pyramid Lake (Aspen Environmental Group 2007), reflecting the proximity to the Sespe-Piru Condor Area. There are no known nests or roosts in the Project area. There are no known Project impacts to this species.	None. Existing information is adequate to develop appropriate O&M measures to minimize potential to affect California condor. The potential presence of California condors feeding on the ground is possible, but unpredictable, and unlikely to be informed by a study.	None

**Table 5.1-1. Identified Potential Issues, Existing Information, and Licensees' Proposed Studies (continued)**

Identified Issues	Pertinent Existing Information	Licensees' Identified Data Gap	Licensees' Proposed Study to Close Data Gap
Effects of Project O&M and recreation on the ESA-listed coastal California gnatcatcher	The species has not been documented to occur in the Project area and there are no known Project impacts to this species. Existing vegetation maps (USFS 2014) indicate potential habitat (i.e., coastal scrub) occurs within the Project boundary, mostly around Elderberry Forebay and along the Castaic Transmission Line corridor, where the species has not been found (POWER 2010, 2012).	None. Existing information is adequate to develop appropriate O&M measures, including routine and emergency maintenance along the Castaic Transmission Line, to minimize potential to affect coastal California gnatcatcher.	None
Effects of Project O&M and recreation use on the ESA-listed southwestern willow flycatcher and least Bell's vireo <sup>1</sup>	Surveys and habitat evaluations have occurred in the Project vicinity, but mostly outside of the Project boundary (Jones and Stokes 2002; Forest Service 2003; POWER 2003; Aspen Environmental Group 2005; Durst et al. 2008).	Information gaps include the distribution and suitability of riparian habitats within the proposed Project boundary for breeding southwestern willow flycatcher and least Bell's vireo, information on locations of Project O&M activities in relation to these riparian habitats, and the presence of the species as determined by surveys.	ESA-Listed Bird Species - Southwestern Willow Flycatcher and Least Bell's Vireo Riparian Habitat Evaluation Study
Effects of Project O&M and recreation use on ESA-listed plants <sup>1</sup>	Surveys and habitat evaluations have occurred in the Project vicinity, but mostly outside of the Project boundary (DWR 2003; FH&A 2003; Aspen Environmental Group 2005, 2007; POWER 2010; Environmental Science Associates 2015).	Information regarding the current distribution and suitability of habitats within the proposed Project boundary for ESA-listed plants is needed.	ESA-Listed Plants Study



**Table 5.1-1. Identified Potential Issues, Existing Information, and Licensees' Proposed Studies (continued)**

Identified Issues	Pertinent Existing Information	Licensees' Identified Data Gap	Licensees' Proposed Study to Close Data Gap
<b>RECREATION AND LAND USE</b>			
<p>Adequacy of number and types of Project recreational facilities to meet demands and needs over the next license period</p>	<p>Forest Service land management plan documents and visitor use information (USFS 2005, 2005a, 2005b, 2005c, 2015;); State of California recreation planning documents (DPR 2013, 2014, 2015); Los Angeles County land use plan documents (County of Los Angeles 1980; Los Angeles County Department of Regional Planning 2015; Los Angeles County Department of Regional Planning 2010); Pyramid Lake trout survey (DWR 2010); and demand analysis associated with Hardluck Campground removal.</p>	<p>Contemporary recreation needs assessment. Existing information is adequate for overall demand and future needs with respect to Southern California but site specific facility needs will need to be aligned with or verified against recreation trends. DWR collects recreation use information for Project facilities and existing capacity analyses show existing facilities have unused capacity that provides room for growth into the next license term. Because recreation trends are changing, user needs over the license term need to be explored to identify an appropriate mix of amenities for the next license term.</p>	<p>A Recreation Demand and Needs Assessment study component are included and proposed in the Recreation Facilities Demand Analysis and Condition Assessment Study</p>
<p>Adequacy of condition of Project recreation facilities to meet demands and needs over the next license period</p>	<p>State of California recreation planning documents (DPR 2013, 2014, 2015); and Pyramid Lake trout survey (DWR 2010, 2013, 2014, Environmental Science Associates, 2015).</p>	<p>While Project recreation areas are deemed to be in overall "good" condition, a comprehensive condition assessment does not exist.</p>	<p>Recreation Facilities Demand Analysis and Condition Assessment Study</p>
<p>Quail Lake and Pyramid Lake recreation visitor (including anglers) attitudes</p>	<p>Pyramid Lake trout survey (DWR 2010, 2013c, 2014f, Environmental Science Associates, 2015); and State of California recreation planning documents (DPR 2013, 2014, 2015).</p>	<p>None. Existing information is adequate to characterize risks and management needs.</p>	<p>None</p>

**Table 5.1-1. Identified Potential Issues, Existing Information, and Licensees' Proposed Studies (continued)**

Identified Issues	Pertinent Existing Information	Licensees' Identified Data Gap	Licensees' Proposed Study to Close Data Gap
Effects of Project O&M and recreation on wildfire risks and management	Forest Service land management plan document and visitor use information (USFS 2005a, 2011), CAL FIRE background information (CAL FIRE 2012), and California fire prevention fee (State of California 2012).	None. Existing information is adequate to characterize risks and management needs.	None
Effects of Project O&M and recreation on access (including angler access) and transportation resources	Forest Service visitor information (USFS 2011).	None. Existing information is adequate to characterize effects of continuing Project O&M based on current conditions and use patterns.	None
<b>AESTHETIC RESOURCES</b>			
Effects of Project O&M on aesthetic resources	Forest Service land management plan documents (USFS 2005, 2005a, 2005b, 2005c); SWP architectural motif memorandum (DWR 1984); and Los Angeles County land use plan documents (Los Angeles County Department of Regional Planning 2010, 2012)	None. Existing information is adequate to characterize effects of continuing Project O&M based on current conditions as a reflection of future conditions for aesthetic resources.	None.
<b>CULTURAL RESOURCES</b>			
Effects of Project O&M and recreation on historic properties and unevaluated cultural resources <sup>4</sup>	There are 157 various cultural resources investigation reports, site records, historic maps, and other data on file at DWR, the SCCIC, Los Angeles County Library, and various on-line repositories.	Comprehensive information regarding cultural resources potentially affected by the Project is needed.	Cultural Resources Study

**Table 5.1-1. Identified Potential Issues, Existing Information, and Licensees' Proposed Studies (continued)**

Identified Issues	Pertinent Existing Information	Licensees' Identified Data Gap	Licensees' Proposed Study to Close Data Gap
<b>TRIBAL RESOURCES</b>			
Effects of Project O&M and recreation on Tribal Cultural Resources <sup>4</sup>	There are 157 various cultural resources investigation reports, site records, historic maps, and other data on file at DWR, the SCCIC, Los Angeles County Library, and various on-line repositories.	Information regarding Tribal Cultural Resources potentially affected by the Project is needed.	Tribal Resources Study

<sup>1</sup>CDFW identified this as a preliminary issue with related information needs and/or potential study.

<sup>2</sup>Castaic Lake Water Agency identified this as a preliminary issue with related information needs and/or potential study.

<sup>3</sup>SWRCB identified this as a preliminary issue with related information needs and/or potential study.

<sup>4</sup>OHP identified this as a preliminary issue with related information needs and/or potential study.

Key:

- AIS = aquatic invasive species
- BMI = benthic macroinvertebrates
- CAL-EPA = California Environmental Protection Agency
- CAL-IPC = California Invasive Plant Council
- CDFW = California Department of Fish and Wildlife
- CNDDDB = California Natural Diversity Database
- CRLF = California red-legged frog
- DPR = California Department of Parks and Recreation
- DWR = California Department of Water Resources
- ESA = Endangered Species Act
- FYLF = foothill yellow-legged frog
- GHG = greenhouse gas
- LWM = large woody material
- NNIP = non-native invasive plants
- O&M = Operations and Maintenance
- SCCIC = South Central Coastal Information Center
- USFS = U.S. Department of Agriculture, Forest Service
- USFWS = U.S. Department of the Interior, Fish and Wildlife Service
- USGS = United States Geological Survey
- WPT = western pond turtle

## 5.2 DATA GAP ANALYSIS

For each issue, Licensees determined whether existing information presented in Section 4.0 is adequate to define the Environmental Baseline, and for Licensees, FERC and relicensing participants to assess Project effects and develop recommendations for possible conditions of a new license. Where the existing information is not adequate, Licensees identified additional information needed and developed a study plan outline, which is discussed in Section 5.3, to gather the information. Table 5.1-1 presents the identified potential issues and existing information by resource area and the corresponding study plan recommendation as necessary.

In general, Licensees found that in most cases existing information is adequate to address the issues. This is attributable to two facts. First, the Project is a pass-through of SWP water with few issues. Quail Lake is an off-channel reservoir. Pyramid Lake and Elderberry Forebay are located on natural stream channels. The natural inflow into each reservoir is very small compared to SWP water inflow. The natural flow is passed through Pyramid Lake and Elderberry Forebay as discussed in Section 3.0. Most Project recreation occurs at Pyramid Lake, where the recreation facilities are in good condition. Quail Lake supports limited non-contact recreation, and public access to Elderberry Forebay is restricted due to safety concerns. Second, in most cases, existing information is adequate because Licensees and others, such as CDFW, have collected and continue to collect extensive resource information under the existing license. In particular, the 2008 amendment proceeding yielded considerable information regarding Pyramid reach.

## 5.3 LICENSEES' PROPOSED STUDIES

Given the very limited issues and the wealth of existing information, Licensees identified 13 studies needed to develop information to augment existing information. These studies are:

- Aquatic Invasive Species Study
- Quail Lake Fish Populations Study
- Pyramid Reach Fish Populations Study
- Special-Status Aquatic Amphibians and Semi-Aquatic Snakes Study
- Botanical Resources Study
- Non-Native Invasive Plants Study
- Special-Status Terrestrial Wildlife Species Study
- ESA-Listed Plants Study
- ESA-Listed Amphibians, California Red-Legged Frog Study

- ESA-Listed Bird Species, Southwestern Willow Flycatcher and Least Bell's Vireo Riparian Habitat Evaluations Study
- Recreation Facilities Demand Analysis and Condition Assessment Study
- Cultural Resources Study
- Tribal Resources Study

For each proposed study, Licensees prepared and included in Appendix I a study plan outline. Each outline includes three sections: (1) summary of existing information, and additional information to be developed by the study; (2) study area, methods and analysis; and (3) statement documenting that the methodology is consistent generally accepted scientific practices.

Some considerations that apply to each of Licensees' proposed study plan outlines are listed below; these are not repeated in each outline.

- Personal safety is the most important consideration of each fieldwork team. Fieldwork will only occur in safely accessible areas and under conditions deemed safe by the field crews.
- The purpose of the study is to gather the information needed to augment existing information.
- All studies will begin after FERC issues their study plan determination.
- The study does not include the development of requirements for the new license, which will be addressed outside the study process.
- Each study focuses on the resource addressed by the study within the proposed Project boundary, but the study area is specific to that resource.
- If required for the performance of the study, Licensees will make a good faith effort to obtain permission to access private property well in advance of initiating the study. Licensees will only enter private property if such permission has been provided by the landowner.
- Licensees will acquire all necessary agency permits and approvals prior to beginning fieldwork for a study that requires them.
- Field crews may make variances to the study plan in the field to accommodate actual field conditions and unforeseen problems.
- Licensees' field crews conducting relicensing studies will record incidental records of aquatic, botanical and wildlife species observed during the performance of a study, paying particular attention to ESA-listed, special-status

species and invasive species and other pertinent information. All incidental observations will be reported in Licensees' DLA and FLA.

To facilitate review of the study plan outlines, Licensees included detailed maps of the Project area in Appendix J.

In addition, respondents to Licensees' Pre-PAD questionnaire suggested some preliminary issues or studies where Licensees did not propose studies or other information gathering activities. Each of these is discussed below.

- Licensees assumed that NMFS's preliminary issues and proposed studies listed in its October 5, 2015 letter were all related to ESA-listed Southern steelhead DPS and its critical habitat. Since no Project dams block the upstream or downstream passage of steelhead and designated steelhead critical habitat does not occur in any Project reaches directly below a Project dam, NMFS' preliminary issues and associated proposed studies do not have a nexus to the Project and, therefore, the issue and proposed studies were not adopted by Licensees.
- FEMA identified National Flood Insurance Program floodplain building management requirements. Since Licensees do not propose any changes to the Project that would affect floodplains and Licensees are not insured under the National Flood Insurance Program, this preliminary issue does not have a nexus to the Project and, therefore, no studies are proposed by Licensees.
- CDFW identified as a preliminary issue and as a potential study assessing the impacts of "new intake towers construction/drawdown through comparison with pre-project fisheries data." FERC's regulations do not require an applicant for a new license to assess the effects of past construction, but they must identify current conditions (i.e., the environmental baseline). Therefore, Licensees have not proposed any study or information gathering activity related to this preliminary issue.
- CDFW identified some potential studies related to Castaic Lake (non-Project facility). Castaic Lake is not part of the Project. Therefore, Licensees have not proposed these studies.
- SWRCB proposed "instream flow studies sufficient to assess impacts to aquatic resources." Since outflows from Pyramid Dam to Pyramid reach match natural inflow into Pyramid Lake with some minor exceptions as described in Section 3.0, an instream flow study would not inform license requirements (i.e., flow in Pyramid reach downstream of Pyramid Dam is as close to unimpaired conditions as is reasonably possible). Therefore, Licensees have not proposed this study.
- Sierra Club, Los Padres Chapter, identified as a preliminary issue Project effects on the ESA-listed southern steelhead DPS and its critical habitat. Since no Project dams block the upstream or downstream passage of steelhead DPS and designated steelhead critical habitat does not occur in any Project reaches

directly below a Project dam, this preliminary issue and associated proposed studies do not have a nexus to the Project and, therefore, the issue and proposed studies were not adopted by Licensees.