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April 17, 2014
File No. 09018A



Jeanine Townsend
Clerk to the Board
State Water Resources Control Board
1001 I Street 24th Floor
Sacramento, CA 95814

SUBJECT: Comment Letter - Board Workshop: Recommendations for Developing Instream
Flow Criteria for Priority Tributaries (Phase 4)

Dear Ms. Townsend:

Placer County Water Agency (PCWA) attended the State Water Resources Control Board (State Water Board) public workshop on March 19, 2014 on the Delta Stewardship Council – Delta Science Program’s (Delta Science Program) *Recommendation on the Method to Develop Flow Criteria for Priority Tributaries to the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta)* and reviewed the accompanying material. The focus of the workshop was to receive information and solicit input on the Delta Science Program’s recommendations and the method that the State Water Board should use to develop non-binding flow criteria for priority Bay-Delta tributaries (initial step in the Phase 4 process). Overall, the Phase 4 process involves development and implementation of tributary-specific policies for water quality control (policies) for priority tributaries to the Bay-Delta watershed, with a focus on the Sacramento River Watershed.

PCWA is a public agency and an interested party in the State Water Board’s Phase 4 process. PCWA was established in 1957 by the California State Legislature to secure and develop water rights in Placer County, thereby ensuring an adequate water supply for the people of Placer County. PCWA plays a key role in the economic well-being and environmental health of Placer County through energetic leadership and stewardship of Placer County’s water resources. As the population of Placer County has grown, the portfolio of PCWA’s activities has become more complex, and more essential to Placer County’s continued vitality. However, regardless of changing demands, mobilizing and developing Placer County’s water resources to provide clean, pure and reliable water to the people of Placer County continues to be the focus of PCWA’s activities.

To that end, PCWA constructed and operates the Middle Fork American River Project (MFP) (Federal Energy Regulatory Commission [FERC] Project No. 2079), a multi-purpose water supply and hydro-generation project designed to meet consumptive water demands within western Placer County and northern Sacramento County, while simultaneously generating clean and renewable power for the California electric grid. The MFP was designed to manage waters of the Middle Fork American River, the Rubicon River, and several associated tributary streams allowing PCWA to place that water to beneficial use. PCWA maintains Water Right Permits 13856 and 13858 which allow for the diversion, storage, and rediversion of water associated with the MFP for irrigation, domestic, recreational, municipal, and industrial uses within PCWA's Place of Use. PCWA also maintains companion permits 13855 and 13857 covering water diversion and storage for power generation purposes.

PCWA is very active in the American River Watershed, including leading the MFP relicensing efforts (as Licensee); signatory of the Water Forum Agreement; participant and supporter of the on-going Water Forum efforts; stakeholder in the Sacramento Municipal Utility District's (SMUD) Upper American River Project (UARP) (FERC Project No. 2101), Pacific Gas & Electric's (PG&E) Drum-Spaulding Project (FERC Project No. 2310), and PG&E's Chili Bar Project (FERC Project No. 2155) FERC relicensings; provider of water for dry-year transfers; and Folsom Reservoir Central Valley Project (CVP) contractor.

If the State Water Board selects the American River as a priority river, the following information should facilitate the identification of the most technically defensible and cost-effective approach to evaluate flow regimes in the American River Watershed. The American River Watershed can functionally be separated into four sub-watersheds for consideration of flow regimes (refer to Map 1). The sub-watersheds and associated projects that influence current flow regimes include the following:

- **Upper North Fork American River Watershed** which is largely unimpaired with minor effects from operations of:
 - Foresthill Public Utility District's (FPUD) Sugar Pine Dam Project which diverts water from Shirttail Creek (a tributary to the North Fork American River) to provide consumptive water to the community of Foresthill;
 - PG&E's Drum-Spaulding Project which influences flow into the North Fork American River from the Towle Diversion on Canyon Creek and the Lake Valley Diversion on the North Fork of the North Fork American River; and
 - PCWA's Pulp Mill Canal Diversion Dam Project which diverts water for consumptive use from Canyon Creek (a tributary to the North Fork American River).

- **Middle Fork American River Watershed** (including the lower 4 miles of the North Fork American River) which is affected from operation of:
 - PCWA's MFP which influences flows in the Middle Fork American River, Rubicon River, and associated tributaries by diverting and storing water for power generation and water supply;
 - PCWA's operation of the American River Pump Station which diverts water from the North Fork American River near the City of Auburn to provide up to 35,500 acre-feet (ac-ft) of consumptive water from the MFP to meet PCWA's consumptive demand;
 - SMUD's UARP which influences flow into Hell Hole Reservoir and along the South Fork Rubicon River, a tributary to the Rubicon River entering downstream of Hell Hole Reservoir; and
 - Georgetown Divide Public Utility District's (GDPUD) Stumpy Meadows Project (non- FERC project), which affects flows in Pilot Creek, a tributary to the Rubicon River entering downstream of Hell Hole Reservoir.

- **South Fork American River Watershed** which is affected from operations of:
 - SMUD's UARP which influences flows by diverting and storing water from the Rubicon River and numerous tributaries in the watershed for hydropower generation. White Rock Powerhouse, the last in a series of eight powerhouses, discharges into the South Fork American River just upstream of Chili Bar Reservoir.
 - PG&E's Chili Bar Project, which is immediately downstream of SMUD's UARP, stores water discharged from SMUD's White Rock Powerhouse in Chili Bar Reservoir and releases it for hydropower generation affecting flows in the South Fork American River.

- **Folsom Reservoir and the Lower American River** influenced from:
 - Operation of PG&E's Drum-Spaulding Project that effects inflow into Folsom Reservoir through Newcastle Powerhouse;
 - Operation of Folsom Reservoir by the United States Bureau of Reclamation (Reclamation) for flood control, CVP water supply deliveries, and environmental releases to protect aquatic resources in the Lower American River and the Delta;
 - Water diversion from Folsom Reservoir and the Lower American River to meet consumptive demand in Placer, El Dorado, and Sacramento counties; and
 - National Marine Fisheries Service's (NMFS) Biological Opinion and Conference Opinion on the Long-Term Operations of the Central Valley Project and

California State Water Project (OCAP BiOP) and Public Draft Recovery Plan for Central Valley Winter-run and Spring-run Chinook Salmon and Steelhead (Draft Recovery Plan) which defines Lower American River flow and temperature management standards and improvements to an existing temperature control structure on Folsom Dam.

Tens of millions of dollars have been spent to collect recent site-specific technical information in these sub-watersheds. In addition, numerous site-specific models have been developed to place into context the effects of varying flow regimes on different beneficial uses in each sub-watershed. However, balancing of beneficial uses in the American River Watershed has not been accomplished within a single modeling effort or regulatory process. Rather regulatory, political, and societal interests armed with watershed-specific technical information and commitments developed through negotiations in collaborative forums have directly shaped the current and proposed flow regimes in the American River Watershed. Literally, hundreds of collaborative meetings have been conducted with representatives from Federal and state agencies, local public agencies, non-government organizations, Native American Tribes, and members of the public to establish flow regimes in the Watershed. It would be extremely difficult for the State Water Board to duplicate the research, field work, and collaboration efforts that have been conducted to date.

The outcome of these proceedings has resulted in stakeholder-approved agreements that prescribe current and future flow regimes that balance beneficial uses in the watershed. These include:

- Stakeholder consensus on the majority of flow-related issues on the FERC relicensing of PG&E's Drum-Spaulling Project with issuance of the Draft 401 Water Quality Certification from the State Water Board anticipated in 2nd Quarter 2015 and Final 401 Certification anticipated in 4th Quarter 2015 (North Fork American River Watershed);
- Stakeholder consensus on the proposed new license conditions on the FERC relicensing of the MFP with the Draft 401 Certification from the State Water Board anticipated 2nd Quarter 2014 and Final 401 Certification anticipated in 4th Quarter (Middle Fork American River Watershed);
- Stakeholder Settlement Agreement on FERC relicensing of the UARP and the Final 401 Certification from the State Water Board issued on October 4, 2013 (Middle Fork and South Fork American River watersheds);
- Stakeholder Settlement Agreement on FERC relicensing of the Chili Bar Project and the Final 401 Certification from the State Water Board issued on November 8, 2012 and revised May 7, 2013 (South Fork American River Watershed);
- Water Forum Agreement (2000) for Folsom Reservoir and the Lower American River; and

- On-going Water Forum collaborative process to provide the State Water Board with recommendations for a revised Flow Management Standard for the Lower American River and Folsom Reservoir Operating Plan (anticipated completion - April 2015).

Therefore, PCWA recommends that in the American River Watershed, the State Water Board focus its efforts on actively participating in the on-going collaborative Water Forum proceeding to further evaluate beneficial uses in Folsom Reservoir and the Lower American River. State Water Board could cost-effectively utilize: (1) the wealth of existing technical information/specialists with current site-specific tools, and (2) the informed perspective from business and agricultural leaders, citizens groups, water purveyors, environmentalists, and local governments that successfully collaborated for over 20 years in the watershed to better understand the balancing of beneficial uses in the Lower American River. In the upper American River Watershed, the State Water Board 401 Certification process on the recent FERC relicensing projects have already (or will shortly) ensured that beneficial uses are adequately balanced, with a wealth of technical data that supports the decisions that have been made.

A summary of the information relevant to the Phase 4 process developed during PCWA's MFP FERC relicensing is provided in Attachment A for reference. PCWA welcomes the opportunity to discuss with State Water Board staff and Phase 4 consultants, the vast technical information available in the American River Watershed and the on-going collaborative efforts with stakeholders to develop and make meaningful decisions on flow regimes throughout the watershed that balance beneficial uses. If you have any questions or would like additional information, please don't hesitate to contact me at (530) 823-4889 or afecko@pcwa.net.

Sincerely,



Andrew Fecko
Director of Resource Development

Map 1 American River Watershed

Attachment A Summary of Phase 4 Steps Completed In the Middle Fork American River Watershed During the Federal Energy Regulatory Commission's Relicensing of Placer County Water Agency's Middle Fork American River Project

c: David Breninger, PCWA
Scott Morris, KMT&G
Dan Kelly, Somach Simmons & Dunn

Map 1
American River Watershed

Figure 1

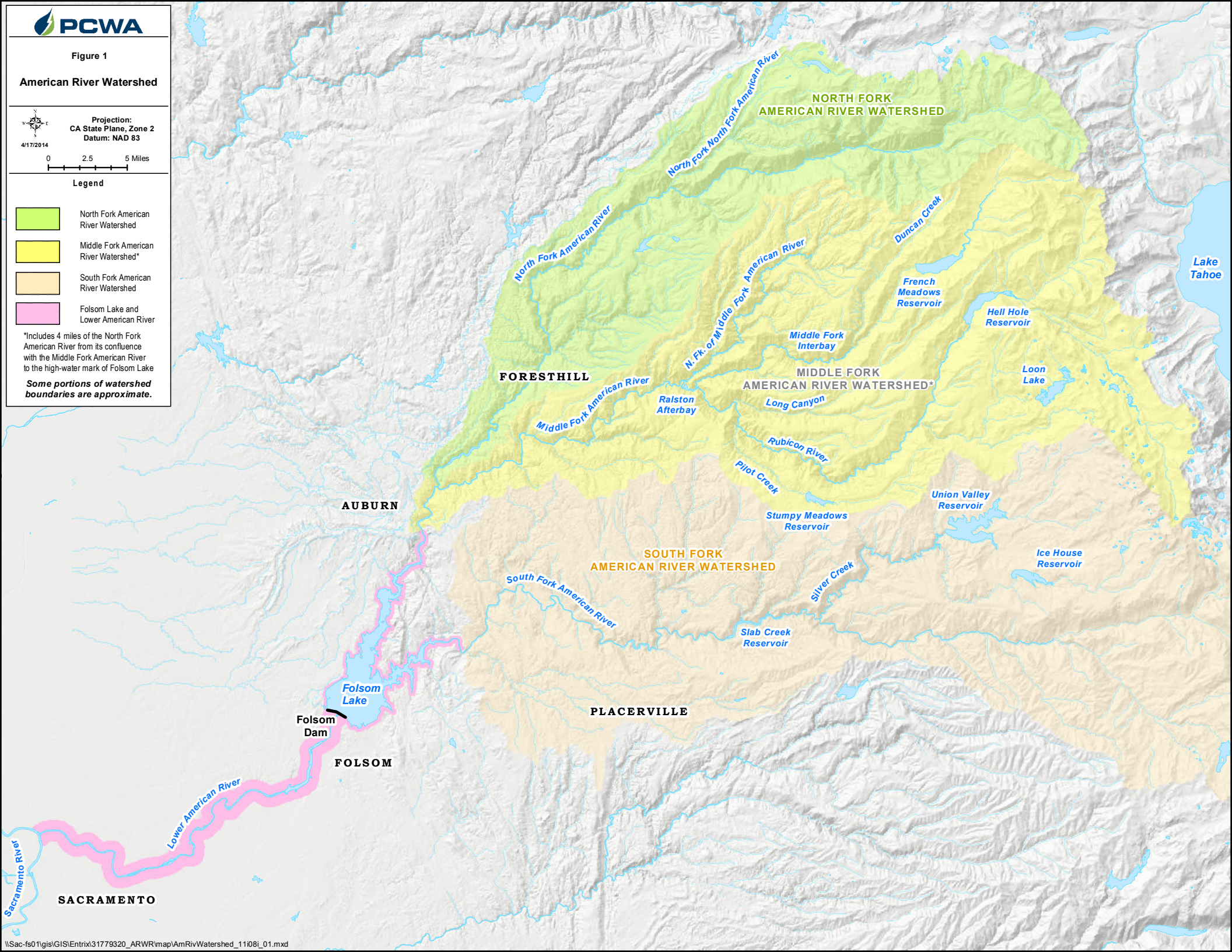
American River Watershed

Projection: CA State Plane, Zone 2
Datum: NAD 83
4/17/2014
0 2.5 5 Miles

Legend

- North Fork American River Watershed
- Middle Fork American River Watershed*
- South Fork American River Watershed
- Folsom Lake and Lower American River

*Includes 4 miles of the North Fork American River from its confluence with the Middle Fork American River to the high-water mark of Folsom Lake
Some portions of watershed boundaries are approximate.



Attachment A

**Summary of Phase 4 Steps Completed in the Middle Fork American River Watershed
During the Federal Energy Regulatory Commission's Relicensing of
Placer County Water Agency's Middle Fork American River Project**

Due to the extensive site-specific data collection, modeling, analysis, and stakeholder collaboration associated with the relicensing of Placer County Water Agency's (PCWA) Middle Fork American River Project (MFP) (Federal Energy Regulatory Commission (FERC) Project No. 2079), PCWA believes that the objectives of the Phase 4 investigation in the Middle Fork American River Watershed (Watershed) will be completed upon issuance of the 401 Water Quality Certification for the MFP by the State Water Resources Control Board (State Water Board) in late 2014. As identified in Table 1, a vast array of documentation supported PCWA's relicensing efforts, including PCWA's 26,000-page Application for New License, FERC's Environmental Impact Statement, and the United States Department of Agriculture-Forest Service (USDA-FS) Final Section 4(e) Terms and Conditions. These and other documents referenced in Attachment A are available for review on PCWA's relicensing website at <http://relicensing.pcwa.net>, or on FERC's eLibrary at <http://www.ferc.gov/docs-filing/elibrary.asp>.

The following summarizes the information and activities completed by PCWA in the Watershed consistent with the seven-step Phase 4 process outlined in the Delta Science Program's *Recommendations for Determining Regional Instream Flow Criteria for Priority Tributaries to the Sacramento-San Joaquin Delta* (February 2014).

Step 1 – Stream Segment Classification

Studies were conducted for the MFP relicensing to characterize geomorphic conditions upstream and downstream of Project dams and diversions in 2005 and 2006. Phase 1 of the geomorphology studies included a review of existing information and initial field studies to characterize the geomorphic conditions. Phase 1 consisted of:

- Classification of channel geomorphology (Rosgen Level I and Montgomery-Buffington stream typing systems);
- Characterization of the extent and location of sediment contribution to stream channels from hillslope mass-wasting; and
- Identification of the relative responsiveness of river reaches to alterations of flow and sediment regimes.

Phase 2 of the study built upon the Phase 1 study by including additional quantitative field studies. The Phase 2 studies were performed at resource agency-approved sites, and consisted of:

- Rosgen Level II stream classification;
- Rosgen Level III stream condition and channel stability characterization; and
- Geomorphic stratification of stream types for implementing focused future technical studies.

The next phase of the geomorphology studies was conducted during the summer and fall of 2007 and 2008 to characterize sediment conditions in the river channels, Project reservoirs, and diversions. The studies consisted of sampling potential spawning gravels and evaluating fine sediment deposition in pools along the stream reaches associated with the MFP and characterizing the size and amount of sediment capture in Project reservoirs and diversion pools. Lastly, studies were performed to describe the amount of large woody debris captured and PCWA maintenance practices for reservoirs and diversion pools.

Step 2 – Hydrologic Analysis

MFP operations in the Middle Fork American River Watershed affect streamflow, reservoir water surface elevations, consumptive water supply deliveries, and hydroelectric power generation. To analyze these combined effects under different Project operations, PCWA developed the Middle Fork Project Operations Simulation Model (Operations Model). The Operations Model was developed in close coordination with the MFP Model Technical Team Subgroup, which was composed of representatives from the California Department of Fish and Wildlife (CDFW), the State Water Board, and USDA-FS. The Operations Model included a daily time step for analyzing water surface elevations in Project reservoirs, streamflows in the bypass¹ and peaking reaches², water deliveries under current and build-out demand, and power generation. In addition, the Operations Model includes an hourly time step for the peaking reach to more accurately analyze effects of daily peaking operations.

The Operations Model was used to compare existing hydrologic conditions in the Watershed to proposed new Project operations under the new FERC license. To characterize the effect of existing and proposed new flow regimes on environmental resources in the Watershed, PCWA used results from the Operations Model as input to a number of physical and water quality models to analyze or develop the following:

- Relationship of flow to physical habitat for native coldwater and warmwater fish species, macroinvertebrates, and foothill yellow-legged frogs using site-specific Physical Habitat Simulation (PHABSIM) modeling;
- Relationship of flow to instream water temperature using RMA-2 and RMA-11 models (river temperature) and CE-QUAL-W2 (reservoir temperature);
- Identification and analysis of overbanking flows, scouring flows, and sediment transport flows (initiation of motion);
- Frequency of Project reservoir spills and 5- and 10-year recurring intervals;
- High-flow recession rates and the resulting effects on riparian recruitment;
- A hydrologic analysis comparing impaired and unimpaired hydrologic regimes in bypass reaches and the peaking reach;
- An Indicators of Hydrologic Alteration (IHA) analysis; and
- Identification and analysis of reach-specific whitewater boating flows, stream-crossing suitability for recreationists, and flows that support angling opportunities.

Step 3 – Site-specific Field Work

Early in the relicensing process, following identification of potential resource issues, 20 Technical Study Plans (TSP) were developed that focused on streamflow-related resource issues (Table 2). The study plans were developed in collaboration with representatives of Federal and state resource agencies, Native American Tribes, local governments, non-governmental organizations, and members of the public. The overall objective of the stakeholder-approved technical studies was to develop sufficient site-specific information to evaluate potential Project effects and to develop new license conditions

¹ Bypass reaches are those where water is rerouted from the stream or river at a diversion dam and reintroduced below a powerhouse.

² Peaking reach is where daily and within-day changes in river flow occur as a result of power releases that are scheduled to follow power demand.

(including new flow regimes) that balance multiple resource interests. The studies were developed to provide MFP stakeholders with sufficient data to examine broader ecological relationships and develop flows that maintain multiple ecological processes inherent in the natural flow regime of the Watershed. The multi-year technical studies were implemented from 2007-2010 with all data collection methods and results provided in 31 Technical Study Reports (TSR) (Table 3). All technical study reports were reviewed and approved by the MFP stakeholders.

Step 4 – Extrapolation of Findings

During the MFP relicensing, extensive site-specific data and modeling was used to establish a new flow regime in the Middle Fork American River Watershed. The analysis included consideration of both base flows and flows supporting overall geomorphic and ecological processes in each stream reach. Multiple lifestages, species, and limiting factors were considered for aquatic species present in each stream reach. Importance was also placed on establishing a flow regime that supported riparian recruitment, sediment transport, and channel maintenance. Flow and associated temperature regimes important to maintaining/establishing environmental cues in the Watershed were included in the new flow regime. This comprehensive approach used by MFP stakeholders to establish a new flow regime in the Middle Fork American River Watershed meets the objectives outlined in the Phase 4 approach.

Step 5 – Production of an Environmental Flow Regime

Based on the extensive site-specific studies and analyses completed during the MFP relicensing and extensive collaboration between scientists and stakeholders from 2005-2012, a new environmental flow regime was established in the Middle Fork American River Watershed. Specific flow objectives were established for the North Fork and Middle Fork American rivers to address their unique hydraulic/geomorphic characteristics and beneficial uses. The new flow regimes were based on numerous environmental considerations (Figure 1). Consensus was reached between the stakeholders on a new flow regime that balanced beneficial uses in the Watershed. The stakeholder-approved flow regimes were memorialized in the USDA-FS Final Section 4(e) Terms and Conditions, including:

- Condition No. 22 – Minimum Streamflows;
- Condition No. 23 – Pulse Flows;
- Condition No. 24 – Ramping Rates;
- Condition No. 25 – Outage Flows;
- Condition No. 38 – Reservoir Minimum Pool Elevations and Reservoir Levels Recreation Objectives; and
- Condition No. 40 – Recreation Streamflows in the Middle Fork American River Below Oxbow Powerhouse

Step 6 – Interaction between Scientists and Stakeholders

Throughout the relicensing process PCWA promoted a free exchange of ideas and sharing of information between Project scientists and stakeholders. It was critical to have ongoing involvement to ensure support and consensus. To accomplish this, PCWA organized a Plenary Group to facilitate communication and decision-making during relicensing. The Plenary established five Technical Working Groups (TWG) – Aquatic Resources, Cultural Resources, Land Management, Recreation, and Terrestrial Resources that collaborated on technical issues.

During the relicensing process, through Plenary and TWG meetings, PCWA collaborated with Federal and state resource agencies, Native American Tribes, non-governmental organizations, and members of the public to develop proposed new license conditions (including flow regimes) (Table 4). Over 280 public meetings were conducted with stakeholders to collaboratively develop technical study plans, technical study reports, and new license conditions across multiple beneficial uses. Refer to Table 2 and Table 3 for a list of technical studies completed and technical study reports prepared for the MFP relicensing associated with establishing new flow regimes in the Middle Fork American River Watershed. All technical study reports were included in PCWA's Application for New License.

After submittal of PCWA's Application for New License, stakeholders continued to collaborate to reach consensus on flow regimes in the Watershed. As a result of further stakeholder negotiation and additional information becoming available, PCWA submitted a Supplemental Filing on November 30, 2011. The Supplemental Filing included: (1) revised instream flow and reservoir minimum pool conditions and additional recreation enhancements included in the resource agencies preliminary conditions and recommendations; (2) revised management plans that PCWA and the MFP stakeholders reached consensus on in early November 2011; (3) evaluation of potential impacts of future construction, operation, and maintenance of the MFP; and (4) incorporation of new resource information collected by PCWA in 2011 after submittal of the Application for New License. The objective of this filing was to augment information currently available to FERC for consideration in its National Environmental Policy Act (NEPA) analysis. The stakeholder-approved flow regimes were memorialized in the USDA-FS Final Section 4(e) Terms and Conditions filed with FERC in December 2012

Step 7 – Adaptive Management Protocol

Table 5 identifies the flow-related stakeholder-approved management and monitoring plans developed for the MFP which were subsequently included in the USDA-FS Final Section 4(e) Terms and Conditions. These plans include an ongoing comprehensive process to monitor and evaluate river flows, aquatic species, aquatic habitat, water quality, water temperature, water-based recreation, and bald eagles over the term of the new license. Results of extensive monitoring over the term of the new license will be reviewed with resources agencies (including the State Water Board) to evaluate whether resource objectives of the new license conditions are being met.

TABLES

Table 1. Decision Documents Supporting Flow Regime in the Middle Fork American River.

Document	Author	Date
Informal Endangered Species Act Consultation for the Middle Fork American River Project, El Dorado and Placer Counties, California (Docket Number P-2079-069)	United States Fish and Wildlife Service	May 2013
California Environmental Quality Act Supplement for the Middle Fork American River Project	Placer County Water Agency	April 2013
Final Environmental Impact Statement for Hydropower License Middle Fork American River Hydroelectric Project – FERC Project No. 2079-069	Federal Energy Regulatory Commission	February 2013
Final Conditions and Recommendations Provided Under 18 CFR § 4.34 (b)(1) In Connection with the Application for Relicensing for the Middle American River Project (FERC No. 2079)	United States Department of Agriculture-Forest Service	December 2012
Preliminary Comments and 10(a) Recommendations for the Beneficial Use of BLM and Reclamation Lands	United States Department of the Interior	August 2011
Federal Power Act COMMENTS, Preliminary § 18 PRESCRIPTIONS, § 10(j) Recommended CONDITIONS, § 10(a) RECOMMENDATIONS, and Notice of INTERVENTION for the Middle Fork American River Hydroelectric Project, Federal Energy Regulatory Commission Project No. 2079, California	United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Region	August 2011
Recommended Conditions for Fish and Wildlife Protection, Mitigation, and Enhancement In the Relicensing of Middle Fork American River Project (FERC Project No. 2079)	California Department of Fish and Game	August 2011
Middle Fork American River Project Application for New License	Placer County Water Agency	February 2011

Note: Refer to PCWA's relicensing website at <http://relicensing.pcwa.net>, or FERC's eLibrary at <http://www.ferc.gov/docs-filing/elibrary.asp> for copies of the above referenced documents.

Table 2. Stakeholder-Approved Technical Study Plans Relevant to Establishing Flow Regimes in the American River Watershed.

Relicensing Study Plans	
Aquatic Resources	
AQ 1 –	Instream Flow Technical Study Plan
AQ 2 –	Fish Population Technical Study Plan
AQ 3 –	Macroinvertebrates and Aquatic Mollusk Technical Study Plan
AQ 4 –	Water Temperature Modeling Technical Study Plan
AQ 5 –	Bioenergetics Technical Study Plan
AQ 6 –	Fish Passage Technical Study Plan
AQ 7 –	Entrainment Technical Study Plan
AQ 8 –	Reservoir Fish Habitat Technical Study Plan
AQ 9 –	Geomorphology Technical Study Plan
AQ 10 –	Riparian Resources Technical Study Plan
AQ 11 –	Water Quality Technical Study Plan
AQ 12 –	Special-Status Amphibian & Aquatic Reptiles Technical Study Plan
Recreational Resources	
REC 1 –	Recreation Use & Facilities Assessment Technical Study Plan
REC 2 –	Recreation Visitor Surveys Technical Study Plan
REC 3 –	Reservoir Recreation Opportunities Technical Study Plan
REC 4 –	Stream-based Recreation Opportunities Technical Study Plan
Terrestrial Resources	
TERR 1 –	Vegetation Communities & Wildlife Habitat Technical Study Plan
TERR 2 –	Special-status Plants Technical Study Plan
TERR 4 –	Special-status Wildlife Technical Study Plan
TERR 5 –	Bald Eagle Technical Study Plan

Note: Refer to PCWA's Pre-Application Document (December 2007) on PCWA's relicensing website at <http://relicensing.pcwa.net>, or FERC's eLibrary at <http://www.ferc.gov/docs-filing/elibrary.asp> for copies of the above referenced documents.

Table 3. Stakeholder-Approved Technical Study Reports Relevant to Establishing Flow Regimes in the American River Watershed.

Early Existing Environmental Studies
2005 Physical Habitat Characterization Study Report
2005 Water Temperature Study Report
2005-2006 Hydrology Study Status Report
2006 Physical Habitat Characterization Study Report
2006 Ralston Afterbay Water Temperature Investigation Study Report
2006 Water Temperature Study Report
Relicensing Studies
Aquatic Resources
AQ 1 – Instream Flow Technical Study Report
AQ 2 – Fish Population Technical Study Report - 2007-2009
AQ 3 – Macroinvertebrate and Aquatic Mollusk Technical Study Report - 2007
AQ 3 – Aquatic Mollusk Technical Study Report - 2008
AQ 4 – Water Temperature Modeling Technical Study Report
AQ 5 – Bioenergetics Technical Study Report
AQ 6 – Fish Passage Technical Study Report - 2008
AQ 7 – Entrainment Contingency Study Technical Study Report - 2009
AQ 8 – Reservoir Fish Habitat Technical Study Report
AQ 9 – Geomorphology Technical Study Report - 2008
AQ 9 – Geomorphology Technical Study Report- 2010
AQ 10 – Riparian Resources Technical Study Report - 2010
AQ 11 – Water Quality Technical Study Report - 2007
AQ 11 – Contingency Water Quality Technical Study Report: Methylmercury Fish Tissue Sampling (2007-2008)
AQ 12 – Special-Status Amphibian and Aquatic Reptile Technical Study Report - 2007
AQ 12 – Special-Status Amphibian and Aquatic Reptile Supplemental Report - California Red-Legged Frog Protocol-Level Survey Report
Recreational Resources
REC 1 – Recreation Use and Facilities Technical Study Report
REC 2 – Recreation Visitor Surveys Technical Study Report
REC 3 – Reservoir Recreation Opportunities Technical Study Report
REC 4 – Stream-based Recreation Opportunities Technical Study Report
REC 4 – Contingency Whitewater Boating Study
Terrestrial Resources
TERR 1 – Vegetation Communities and Wildlife Habitat Technical Study Report - 2007
TERR 2 – Special-Status Plants Technical Study Report - 2008
TERR 4 – Special-Status Wildlife Technical Study Report - 2008
TERR 5 – Bald Eagle Technical Study Report - 2008

Note: Refer to PCWA's Application for New License (February 2011) located on PCWA's relicensing website at <http://relicensing.pcwa.net>, or FERC's eLibrary at <http://www.ferc.gov/docs-filing/elibrary.asp> for copies of the above referenced documents.

Table 4. Plenary and Working Group Relicensing Participants.

Name	Title	Organization
Federal Energy Regulatory Agency (FERC)		
Kimberly D. Bose	Secretary	Federal Energy Regulatory Commission
Nathaniel J. Davis, Sr.	Deputy Secretary	
Wing Lee	Acting Director	
FERC Service List		
Dave Steindorf	CA Stewardship Director	American Whitewater
		Mobil Natural Gas Inc.
Alyssa Koo	Attorney	Pacific Gas & Electric Co.
Law Department FERC Cases		Pacific Gas & Electric Co.
Mark Patrizio	Attorney	Pacific Gas & Electric Co.
Forest Sullivan	Senior Project Manager	Pacific Gas & Electric Co.
Chairman	Board of Directors	Placer County Water Agency
David A. Breninger	General Manager	Placer County Water Agency
Stephen Jones	Manager	Placer County Water Agency
Federal Government Representatives		
	Habitat Manager	National Marine Fisheries Service
Jeff McLain	Acting Central Valley Supervisor	National Oceanic & Atmospheric Administration – Fisheries
Stephen Bowes	CA Hydro Program Wild & Scenic Rivers Coordinator	National Park Service
Patrick Dwyer		US Army Corp of Engineers (USACOE)
Jim Eichner	Mother Lode Field Office	US Bureau of Land Management
William Haigh	Office/Field Manager	US Bureau of Land Management
Deane Swickard		US Bureau of Land Management
Don Glaser	Regional Director	US Bureau of Reclamation - Mid-Pacific Region
Peggi Brooks	Chief Recreation Resources Division	US Bureau of Reclamation
Elizabeth (Beth) Dyer	Central California Area Officer	
	Natural Resources Specialist	US Bureau of Reclamation
Mike Finnegan	Central Area Office Manager	US Bureau of Reclamation
Dorit Buckley	Archaeologist	US Forest Service – El Dorado National Forest
Katy Coulter-Parr	Heritage & Tribal Program Manager, ENF	US Forest Service – El Dorado National Forest
Tim Dabney	Georgetown Ranger District	US Forest Service – El Dorado National Forest
Krista Deal		US Forest Service – El Dorado National Forest
Susan Durham	Botanist	US Forest Service – El Dorado National Forest
Vicki Jowise	Landscape Architect	US Forest Service – El Dorado National Forest
Jon Jue	Resource Officer	US Forest Service – El Dorado National Forest
Tom Koler	Geologist	US Forest Service – El Dorado National Forest
Dawn Lipton	Wildlife Biologist	US Forest Service – El Dorado National Forest
Lester Lubetkin	Recreation	US Forest Service – El Dorado National Forest
Jeff Marsolais		US Forest Service – El Dorado National Forest
Denise McLemore		US Forest Service – El Dorado National Forest
Kim Morales	Hydrologist	US Forest Service – El Dorado National Forest
Cheryl Mulder		US Forest Service – El Dorado National Forest
Beth Paulson	Hydro Electric Coordinator	US Forest Service – El Dorado National Forest
Paul Sanders	Engineering/Roads Specialist	US Forest Service – El Dorado National Forest
Mike Taylor		US Forest Service – El Dorado National Forest
Terry Tenley		US Forest Service – El Dorado National Forest

Table 4. Plenary and Working Group Relicensing Participants.

Name	Title	Organization
Federal Government Representatives (continued)		
Patricia Trimble	District Ranger, Georgetown Ranger District	US Forest Service – El Dorado National Forest
Ramiro Villalvazo	Forest Supervisor	US Forest Service – El Dorado National Forest
Janelle Walker	Archaeologist	US Forest Service – El Dorado National Forest
Jann Williams	Biologist	US Forest Service – El Dorado National Forest
Mike Brenner	District Conservationalist	USDA – Natural Resources Conservation Service
Dennis Smith	Regional Hydropower Assistance Team (RHAT)	US Forest Service – Region 5 – Regional
Julie Tupper	Regional Hydropower Assistance Team (RHAT)	US Forest Service – Region 5 – Regional
Amy Lind	Wildlife Biologist/Herpetologist	US Forest Service – Sierra Nevada Research Ctr
John Babin	GIS Coordinator	US Forest Service – Tahoe National Forest
Greg Connick		US Forest Service – Tahoe National Forest
Kalie Crews		US Forest Service – Tahoe National Forest
Jan Cutts		US Forest Service – Tahoe National Forest
William Davis	Landscape Architect	US Forest Service – Tahoe National Forest
Donna Day	Archaeologist	US Forest Service – Tahoe National Forest
Gary Fildes	Fuels Officer	US Forest Service – Tahoe National Forest
Chris Fischer	District Ranger, American River Ranger District	US Forest Service – Tahoe National Forest
Phil Horning		US Forest Service – Tahoe National Forest
Scott Husmann	Engineer	US Forest Service – Tahoe National Forest
Victor Lyon	Wildlife Biologist	US Forest Service – Tahoe National Forest
Ed Moore		US Forest Service – Tahoe National Forest
Bonnie Petitt		US Forest Service – Tahoe National Forest
Tom Quinn	Forest Supervisor	US Forest Service – Tahoe National Forest
Carrie Smith	Acting Heritage Program Manager	US Forest Service – Tahoe National Forest
Nolan Smith	District Archaeologist	US Forest Service – Tahoe National Forest
Dan Teater	Fisheries Biologist	US Forest Service – Tahoe National Forest
Mo Tebbe	Public Service Officer	US Forest Service – Tahoe National Forest
Matt Triggs		US Forest Service – Tahoe National Forest
Marc Walburn		US Forest Service – Tahoe National Forest
Rick Weaver		US Forest Service – Tahoe National Forest
Amy Fesnock	Endangered Species Division	US Fish & Wildlife Service
Bill Foster		US Fish & Wildlife Service
Mark Gard		US Fish & Wildlife Service
Roberta Gerson	Endangered Species Program	US Fish & Wildlife Service
Jeremiah Karuzas	Fish and Wildlife Biologist	US Fish & Wildlife Service
Pete Trenham	Endangered Species Division	US Fish & Wildlife Service
State Government Representative		
Kahl Muscott		Auburn Area Recreation & Park District
Harold Flood		California Department of Boating & Waterways
Robert Hughes	Senior Hydraulic Engineer	California Department of Fish & Game
Beth Lawson	Associate Hydraulic Engineer	California Department of Fish & Game
Stafford Lehr		California Department of Fish & Game
MaryLisa Lynch	Staff Environmental Scientist	California Department of Fish & Game
Matt Myers	Environmental Scientist	California Department of Fish & Game
Lori Powers	Associate Fisheries Biologist	California Department of Fish & Game

Table 4. Plenary and Working Group Relicensing Participants.

Name	Title	Organization
State Government Representative (continued)		
Sharon Stohrer	Staff Environmental Scientist	California Department of Fish & Game
Bill Deitchman	California State Park Ranger	California State Parks
Mike Lynch	Acting Superintendant	California State Parks - ASRA
Jim Micheaels	Recreation Area	California State Parks - Folsom State Park
Ted Frink		Department of Water Resources
Russ Stein		Department of Water Resources
Russ Kanz	Environmental Scientist Division of Water Rights	State Water Resources Control Board
Local Government		
Robert Richardson	City Manager	City of Auburn
Bruce Kranz	City Manager	City of Colfax
Jim Estep	City Manager	City of Lincoln
W. Craig Robinson	City Manager	City of Roseville
Alana Eichenhofer	Administrative Secretary	County of Placer
Brett Storey	County Executive Office	County of Placer
Eric Waidmann	Assistant Treasurer-Tax Collector	County of Placer
Suzanne Allen de Sanchez	Clerk to the Board	County of Placer
Larry Jordan		Foresthill Municipal Advisory Committee
Gail McCafferty		Foresthill Municipal Advisory Committee
Rob Haswell	Field Representative, District 5	Placer County Board of Supervisors
Pat Malberg	Field Representative, District 5	Placer County Board of Supervisors
Scott Finley	Supervising Deputy County Counsel	Placer County Counsel's Office
Perry Beck	City Manager	Town of Loomis
Public Agency		
April Naatz	Interim General Manager	El Dorado County Water Agency
Tracey Eden-Bishop, P.E.	Water Resources Engineer	El Dorado County Water Agency
Bill Hetland		El Dorado County Water Agency
Brian Deason	Hydroelectric Compliance Analyst	El Dorado Irrigation District
Cheri Jagers		El Dorado Irrigation District
Kurt Reed	General Manager	Foresthill Public Utility District
George Shaw		Foresthill Public Utility District
Henry White	General Manager	Georgetown Divide Public Utility District
Ron Nelson	General Manager	Nevada Irrigation District
Rich Gresham		Placer County Resource Conservation District
Tom Wehri	Board President	Placer County Resource Conservation District
Shauna Lorange	General Manager	San Juan Water District
Native American Tribes		
Fern Brown	Secretary	Colfax-Todds Valley Consolidated Tribe
Leon Poitras		Colfax-Todds Valley Consolidated Tribe
Lavina Suehead	Chair	Colfax-Todds Valley Consolidated Tribe
Don Yandell		El Dorado County Indian Council
Jeri Scambler		Miwok Tribe of the El Dorado Rancheria
April Moore		Nisenan Maidu
Nicolas Fonseca	Chair	Shingle Springs Rancheria
Jeff Murray		Shingle Springs Rancheria
Donald Ryberg	Chair	T'SI-Akim Maidu
John Boche	Chair	Todd Valley Miwok-Maidu Cultural Foundation
Bridget Zellner		Todd Valley Miwok-Maidu Cultural Foundation

Table 4. Plenary and Working Group Relicensing Participants.

Name	Title	Organization
Native American Tribes (continued)		
Alan Adams	Tribal Preservation Committee	United Auburn Indian Community of the Auburn Rancheria
Gregory S. Baker	Tribal Administrator	United Auburn Indian Community of the Auburn Rancheria
Yolanda Chavez		United Auburn Indian Community of the Auburn Rancheria
Sande Delgado	Tribal Preservation Committee	United Auburn Indian Community of the Auburn Rancheria
David Keyser	Tribal Chairperson	United Auburn Indian Community of the Auburn Rancheria
Marcos Guerrero, MA., RPA	Cultural Resources Specialist	United Auburn Indian Community of the Auburn Rancheria
Shelly McGinnis	Consultant	United Auburn Indian Community of the Auburn Rancheria
Tracey Ocampo	Tribal Preservation Committee	United Auburn Indian Community of the Auburn Rancheria
Dolly Suehead	Tribal Preservation Committee	United Auburn Indian Community of the Auburn Rancheria
Jessica Tavares	Tribal Chairperson	United Auburn Indian Community of the Auburn Rancheria
John L. Williams	Tribal Preservation Committee	United Auburn Indian Community of the Auburn Rancheria
Marie Barry	Environmental Specialist	Washoe Tribe of Nevada & California
Stephanie Cole		Washoe Tribe of Nevada & California
Darrel Cruz	CRO/THPO	Washoe Tribe of Nevada & California
William Dancing-Feather		Washoe Tribe of Nevada & California
Lynda Shoshone	Washiw Wagayay Manal	Washoe Tribe of Nevada & California
Aaron Smokey		Washoe Tribe of Nevada & California
Wanda Batchelor	Chairman	Washoe Tribe of Nevada & California
Non-Governmental Organizations		
Rod Hall		American Red Cross
Bill Center		American River Recreation Association & Sierra Nevada Alliance
Bill Templin		American River Watershed
Bruce Cosgrove, CEO		Auburn Chamber of Commerce
Rich Johnson	Government Affairs Committee	Auburn Chamber of Commerce
Bob Snyder	Government Affairs Committee	Auburn Chamber of Commerce
Larry Goodell		Auburn Flycasters, Granite Bay Flycasters
Don Rivenes		Audubon Society
Laura Norlander		California Hydropower Reform Coalition
Sue Britting		California Native Plant Society
Nate Rangel		California Outdoors/Adventure Connection
Chris Shutes	FERC Projects Director	California Sportfishing Protection Alliance
Jim Ferris		Canyon Keepers
Greg Bates		Dry Creek Conservancy
Penny Scribner		El Dorado Equestrian Trails Foundation
Jim Bachman		Farm Bureau, Placer County
Ben Rualo		FlyFishNorCal (Northern CA Fly Fishing)

Table 4. Plenary and Working Group Relicensing Participants.

Name	Title	Organization
Non-Governmental Organizations (continued)		
Megan Anderson		Foothills Water Network
Julie Leimbach		Foothills Water Network
William DeCamp		Foresthill Chamber of Commerce
Harry Shuger		Foresthill Chamber of Commerce
Michael Garabedian		Friends of the North Fork
Ron Stork		Friends of the River
Mel Odemar		Granite Bay Flycasters
Heath Wakelee		Granite Bay Flycasters
Patricia Gibbs		Loomis Basin Horsemen's Association
Elizabeth Soderstrom		Natural Heritage Institute
Jim Victorine		Northern CA Council, Federation of Fly Fishers
Kevin Goishi	Partnership Coordinator	Pacific Gas & Electric
Chuck Heisleman		Pacific Gas & Electric
Dave Hinshaw	PG&E Account Executive	Pacific Gas & Electric
Steve Pierano	Relicensing Project Manager	Pacific Gas & Electric
Clay Schmidt		Pacific Gas & Electric
Gary Estes		Protect American River Canyons
Eric Peach		Protect American River Canyons
Gerald Hurt		Public Lands for the People (PLP)
David Hanson	Project Manager, Hydro Relicensing	Sacramento Municipal Utility District
Dudley McFadden	Principal Civil Engineer	Sacramento Municipal Utility District
Jim Shetler	Assistant General Manager, Energy Supply	Sacramento Municipal Utility District
Carol Szuch	Management Analyst	Sacramento Municipal Utility District
Terry Davis		Sierra Club – Mother Lode Chapter
Allan Eberhart		Sierra Club – Mother Lode Chapter
Marilyn Jasper		Sierra Club – Placer Group
Tyrone Gorre		Sierra Salmon Alliance
Jack Sanchez		SARSAS
Chuck Bonham	California Director	Trout Unlimited
Karl Brustad		Trout Unlimited
Sam Davidson		Trout Unlimited
Bill Carnazzo		Upper American River Foundation
Grant Fraser		Upper American River Foundation
Anthony Rossmann	Rossmann & Moore, LLP	Western States Endurance Run
Gordon Ainsleigh		Western States Trail Foundation
Thomas Christofk		Western States Trail Foundation
Gene Freeland		Western States Trail Foundation
Bill Johnson		Western States Trail Foundation
Chuck Mather		Western States Trail Foundation
Kathie Perry		Western States Trail Foundation
Mike Pickett		Western States Trail Foundation
Bill Pieper		Western States Trail Foundation
Public		
Mary Allen		Mountain biker
Sean Allen		Mountain biker
Scott Armstrong		All Outdoors
Dan Bacher		UARF

Table 4. Plenary and Working Group Relicensing Participants.

Name	Title	Organization
Public (continued)		
Rho Bailey		Equestrian
Tom Bartos		Horseshoe Bar Fish & Game Preserve
Mike Bean		Whitewater boater
Phil Boyer		Whitewater boater
Barbara Brenner		Unknown
Brad Brewer		Whitewater boater
Dan Buckley		Tributary Whitewater Tours
Bryant Burkhardt		California Canoe and Kayak
Macy Burnham		Whitewater boater
Joe Byrne		Angler
Roger Canfield		Unknown
John Canyon		Unknown
Bradley J. Cavallo		Cramer Fish Sciences
Bob Center		Unknown
Charlie Center		Whitewater boater
Neil Cochran		Unknown
Max Colorado		West Yost
Linda Costello		Equestrian
Dan Crandall		Current Adventures
Craig Crouch		Unknown
Linda Curry		Unknown
Ray Curry		Unknown
Phil DeReimer		Whitewater boater
Anthony DeRiggi		Unknown
John Donovan		Unknown
John Dunlap		Dunlap Group
Tim Feller		Sierra Pacific Industries
Gary Flanagan		Northern CA Council/Federation of Fly Fishers
Damian Forsythe		Hooked Up Anglers
C. Fullerton		Horseshoe Bar Fish & Game Preserve
John Fulton		Unknown
Sue Geisler		Lincoln Hills Hiker Group
Hans Geyer		Horseshoe Bar Fish & Game Preserve
Jan Goldsmith		KMT&G – Wells Fargo Center
Carleton Goold		Whitewater boater
Tillie Grant		Unknown
John Greene		Unknown
Trevor Haagensen		Whitewater boater
Jim Haagensmit		Equestrian
Jane Hamilton		Unknown
John Hauschild		Canyon Raft Rentals
Monte Hendricks		Angler
Norm Hill		Unknown
Rose Hoeper		Unknown
Jim Holmes		Unknown
Tom Horner		California State University, Sacramento, Geology
Nathan Hunkapillar		Whitewater boater
Tom Jones		Jones & Associates

Table 4. Plenary and Working Group Relicensing Participants.

Name	Title	Organization
Public (continued)		
Zack Lannoy		Whitewater boater
Jim Larimer		Robie Foundation
Joe Larkin		Equestrian
Cindy Larkin		Equestrian
Roger Lee		Wilderness Adventures
Scott Ligare		Whitewater boater
Steve Liles		WET River Trips
Scott Lindgren		Whitewater boater
Jim Linsdau		Foresthill Messenger
Dan Lombard		Unknown
Dick Maclay		Advanced Energy Strategies
James McCloud		Whitewater boater
Darin McQuoid		Whitewater boater
Glen Meeth		Mountain biker
Thomas Moore		Whitewater boater
Denise Morison		Stoel Rives, Attorney at Law
Debbie Murphy		Loomis Basin Horsemen's Association
Jared Noceti		Whitewater boater
Ronald Otto		Angler
Eric Peetlock		Whitewater boater
Janet Peterson		Equestrian
Bart Petrini		UARF
Bill Radakovitz		Unknown
George Remaley		Unknown
Frank Rinella		Fed of Fly Fishers
Lore Roberts		Unknown
Rocky Rockholm		Unknown
Andrea Rosenthal		Unknown
Bill Royan		Unknown
Bob Schardt		Horseshoe Bar Fish & Game Preserve
Robert Schnetzler		Unknown
Hilde Schweitzer		Whitewater boater
Katie Scott		Whitewater boater
Lynn Seeley		Equestrian
John Sellers		Unknown
Chris Shackleton		Whitewater boater
Theresa Simsiman		Whitewater boater
Greg Soderland		Hiker/runner
Fred Springer, C.E.		Troutman Sanders LLP
Todd Stanley		Whitewater boater
Janeen Steinheiner		Unknown
Dan Street		Horseshoe Bar Fish & Game Preserve
Nick Strelchuk		Reel Life Recoveries
Lisa Thompson		University of California, Davis
Laird Thompson		Unknown
Ron Thompson		Whitewater boater
Bryan Tibbs		Advanced Energy Strategies
Chris Tulley		Whitewater boater

Table 4. Plenary and Working Group Relicensing Participants.

Name	Title	Organization
Public (continued)		
Tim Tweitmeyer		Hiker/runner
Scott Underwood		Mother Lode River Center
Marty Vroge		Unknown
Ed Wahl		Angler
Dick Warren		Unknown
Sherry Wicks		FROG
Donna Williams		Unknown
Frank Wilson		Unknown
David Wiltsee		Unknown
Saul Wiseman		Unknown
Tim Woodall		Leupp & Woodall
Robin Yonash		Unknown

Table 5. Stakeholder-Approved Management and Monitoring Plans, and License Conditions Relevant to Establishing Flow Regimes in the American River Watershed.

Management and Monitoring Plans
Aquatic Resources
Benthic Macroinvertebrate Monitoring Plan
Fish Population Monitoring Plan
Foothill Yellow-legged Frog Monitoring Plan
Geomorphology/Riparian Monitoring Plan
Mercury Bioaccumulation Monitoring Plan
Sediment Management Plan
Streamflow Reservoir Elevation Gaging Plan
Water Quality Monitoring Plan
Water Temperature Monitoring Plan
Western Pond Turtle Monitoring Plan
Recreation Resources
Recreation Plan
Terrestrial Resources
Bald Eagle Management Plan

Note: Refer to USDA-FS Final Section 4(e) Terms and Conditions (December 2012) located on FERC's eLibrary at <http://www.ferc.gov/docs-filing/elibrary.asp> for copies of the above referenced documents.

FIGURE

Figure 1. Considerations Used to Develop Flow Regimes in the Middle Fork American River Watershed.

