

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, DC 20426
September 21, 2026

OFFICE OF ENERGY PROJECTS

Project No. 2916-085 – California
Lower Mokelumne River Hydroelectric
Project
East Bay Municipal Utility District

VIA Electronic Mail

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**Reference: Study Plan Determination for the Lower Mokelumne River
Hydroelectric Project, P-2916**

Ms. Jain:

Pursuant to 18 C.F.R. § 5.13(c) of the Commission's regulations, this letter contains the study plan determination for the Lower Mokelumne River Hydroelectric Project No. 2916 (Lower Mokelumne Project or project), which is located on the Lower Mokelumne River in Amador, Calaveras, and San Joaquin Counties, California. The determination is based on the study criteria set forth in section 5.9(b) of the Commission's regulations, applicable law, Commission policy and practice, and Commission staff's review of the record of information.

Background

On April 2, 2026, East Bay Municipal Utility District (EBMUD) filed a Proposed Study Plan (PSP) that includes 16 studies in support of its intent to relicense the project. The PSP addresses studies on water resources, fish and aquatic resources, terrestrial resources, socioeconomics, recreation, and cultural resources.

EBMUD held an Initial Study Plan meeting to discuss the PSP on April 29, 2026. Comments on the PSP were filed by the Amador County Fish and Wildlife Commission.

EBMUD filed a Revised Study Plan (RSP) on July 30, 2026. The RSP includes the 16 studies previously included in the PSP, of which 3 have been revised based on

comments received on the PSP. Comments on the RSP, including requests for modification of proposed studies, were filed by California Department of Fish and Wildlife (California DFW) on August 18, 2026.

Study Plan Determination

As indicated in Appendix A, of the 16 studies proposed by EBMUD, 15 are approved as filed, and 1 study is not required. Requested modifications to two of the proposed studies are not adopted.

The bases for not adopting the one proposed study and not adopting the two requested modifications are discussed in Appendix B. Commission staff reviewed all comments and considered all study plan criteria in section 5.9 of the Commission's regulations. However, only the specific study criteria particularly relevant to the determination are referenced in Appendix B.

Studies for which no issues were raised in comments on the RSP are not discussed in this determination. All components of the approved studies must be completed as described in EBMUD's RSP. Pursuant to section 5.15 (c)(1) of the Commission's regulations, the initial study report for all studies in the approved study plan must be filed by September 1, 2027.

Please note that nothing in this study plan determination is intended, in any way, to limit any agency's proper exercise of its independent statutory authority to require additional studies. EBMUD may choose to conduct any study not specifically required herein that they feel would add pertinent information to the record.

If you have any questions, please contact Ousmane Sidibe, the Commission's relicensing coordinator for the project, at (202) 502-6245 or ousmane.sidibe@ferc.gov.

Sincerely,

for
Terry Turpin
Director
Office of Energy Projects

Enclosures: Appendix A – Summary of Determinations on Proposed and Requested Studies

Appendix B – Staff's Recommendations on Proposed and Requested Studies

APPENDIX A

SUMMARY OF DETERMINATIONS ON PROPOSED AND REQUESTED STUDIES

Study	Recommending Entity	Approved	Approved with Modifications	Not Required
WR-1 – Water Quality Study Plan	EBMUD	X		
WR-2 – Water Temperature Study Plan	EBMUD	X		
WR-3 – Hydrology and Operations Modeling Study Plan	EBMUD	X		
FA-1 – Fish Population Study Plan	EBMUD	X		
FA-2 – Instream Flow Study Plan	EBMUD	X		
FA-3 – Reservoir Fish Habitat Study Plan	EBMUD	X		
FA-4 – Special Status Amphibians and Aquatic Reptiles Study Plan	EBMUD	X		
FA-5/FA-6 – Chinook Salmon Egg and Juvenile Survival Study Plan	EBMUD	X		
REC-1 – Recreation Facilities Inventory and Condition Assessment	EBMUD	X		
REC-2 – Recreation Use and Needs Study Plan	EBMUD	X		
CR-1 – Cultural Resources Study Plan	EBMUD	X		
CR-2 – Tribal Ethnography Resources Study Plan	EBMUD	X		

Study	Recommending Entity	Approved	Approved with Modifications	Not Required
TERR-1 – Wildlife Resources Study	EBMUD	X		
TERR-2 – Botanical Resources Study	EBMUD	X		
TERR-3 – Wetland, Riparian, and Littoral Habitats Study	EBMUD	X		
EJ-1 – Environmental Justice Study	EBMUD			X

APPENDIX B

STAFF RECOMMENDATIONS ON PROPOSED STUDY AND REQUESTED STUDY MODIFICATIONS

The following discusses Commission staff's recommendations on studies proposed by East Bay Municipal Utility District (EBMUD) for which modification requests were filed by California Department of Fish and Wildlife (California DFW). We base our recommendations on the study criteria outlined in the Commission's regulations [18 C.F.R. section 5.9(b)(1)-(7)].

I. REQUESTED STUDY MODIFICATIONS

Fish Population Study (FA-1) and Reservoir Fish Habitat Study (FA-3)¹

Applicant's Proposed Studies

The goal of the proposed *Fish Population Study (FA-1)* is to document fish species composition, distribution, and relative abundance in the project reservoirs (Pardee Reservoir and Camanche Reservoir) and the Lower Mokelumne River. Fish population surveys in the project reservoirs will occur along transects that are consistent with historic monitoring locations for the purposes of comparison. The surveys will be conducted once at each transect during the late summer/fall 2026 field period, using nighttime boat electrofishing as the sole capture method, with in-situ water quality measurements (temperature, dissolved oxygen, turbidity) collected at each sampling location.

The goal of the proposed *Reservoir Fish Habitat Study (FA-3)* is to characterize the management of reservoir water surface elevations at the project and its relationship to fish habitat availability. The study will use the fish assemblage data collected in FA-1, the results from the *Hydrology and Operations Modeling Study (WR-3)* and *Water Temperature Study (WR-2)*, and historical dissolved oxygen data to assess daily water surface elevations and pool habitat volumes (cold water, warm water, dissolved oxygen) at each reservoir under current operations and alternative hydrology scenarios and

¹ In its August 18, 2026 letter, California DFW specifies that it is requesting modifications to the *Reservoir Fish Habitat Study (FA-3)*; however, the contents of its request appear to be instead related to the surveys being conducted as part of the *Fish Population Study (FA-1)*. Therefore, this determination provides background descriptions of both studies in order to provide context for the discussion below.

provide a comprehensive understanding of how operational patterns influence fish habitat.

Requested Study Modification

California DFW requests that, in addition to the late summer/fall fish surveys, EBMUD conduct fish surveys at the proposed locations on Pardee and Camanche reservoirs during the spring as well. California DFW notes that additional surveys are needed to provide a full understanding of the fish populations potentially affected by project operations, maintenance activities, and facilities. In addition, California DFW requests that EBMUD provide a summary report for each individual sampling effort and incorporate them into an annual report that includes interpretations of species trends, recruitment, sampling limitations, and comparisons to past data.

Reply Comments

EBMUD did not provide reply comments on California DFW's requested study modification.

Discussion and Staff Recommendation

Although California DFW states that additional fish surveys are needed to allow a full understanding of the fish populations potentially affected by project operations, maintenance activities, and facilities, it did not describe how the existing information and proposed study proposal would not adequately inform those potential effects (section 5.9(b)(4)). EBMUD has been conducting late summer/fall fish population surveys in the project reservoirs biennially since approximately 2011, and they propose to continue reservoir sampling that is consistent with those sampling methods to maintain comparable data sets. EBMUD has also been collecting spring fish population data since 2001 in the riverine reaches of the project area and proposes to do so as a part of FA-1. Therefore, we conclude that the data that EBMUD would collect in its proposed studies, coupled with the fish population data contained in the Pre-Application Document, will provide adequate data to inform Commission staff's analysis of project effects and inform the development of license requirements (section 5.9 (b)(5)). Additionally, the inclusion of springtime reservoir boat electrofishing sampling would add over \$100,000 to the study cost (section 5.9(b)(7)). For those reasons, we do not recommend California DFW's spring reservoir fish sampling surveys.

California DFW's request that EBMUD provide a summary report for each individual sampling effort (one sampling event in the spring and one sampling event in the summer/fall) is moot. EBMUD proposes in section 8.0 of the study plan to provide the results of each year's sampling effort in a summary report in September of 2027 and August of 2028. These reports would provide much of the information requested by

California DFW. In its request that the summary report include “interpretations of species trends, recruitment, sampling limitations, and comparisons to past data,” California DFW did not describe why that additional information would be needed (section 5.9 (b)(4)). The stated purpose of FA-1 is “to document fish species composition, distribution, and relative abundance in the project reservoirs (Pardee Reservoir and Camanche Reservoir) and the Lower Mokelumne River.” California DFW’s request for additional data would not be necessary to meet the stated study objectives (section 5.9 (b)(1)). For these reasons, we do not recommend that EBMUD be required to modify the data reporting procedure described in its study plan.

Special Status Amphibians and Aquatic Reptiles Study (FA-4)

Applicant’s Proposed Study

The goal of the proposed *Special Status Amphibians and Aquatic Reptiles Study (FA-4)* is to determine the presence of these species in the project area. The objectives of the study are to: (1) document the distribution and abundance of northwestern pond turtle populations; (2) document the presence of potential northwestern pond turtle nesting habitat near project facilities; (3) conduct breeding habitat assessment and visual encounter surveys for breeding and young-of-year foothill yellow-legged frogs in representative sites in the Lower Mokelumne River from Camanche Dam to Woodbridge Irrigation District Dam (WIDD) and associated tributaries; (4) continue conducting surveys consistent with the monitoring requirements under the Safe Harbor Agreement² for California red-legged frog and California tiger salamander, and continue documenting the presence of western spadefoot during these surveys; and (5) characterize habitat for giant garter snake and western spadefoot.

Northwestern pond turtle population sampling under FA-4 would occur in the vicinity of established electrofishing transects in Pardee and Camanche reservoirs, and on the Lower Mokelumne River from Camanche Dam to WIDD, in areas that represent suitable habitat. For the northwestern pond turtle nesting habitat surveys, EBMUD proposes to: (1) develop habitat suitability criteria in cooperation with resource agencies and relicensing participants, (2) conduct a desktop analysis and develop a geographic information system (GIS) map of potential nesting habitat locations in the study area, and

² The Safe Harbor Agreement between EBMUD and the U.S. Fish and Wildlife Service serves to enhance and manage habitat on EBMUD lands in San Joaquin, Amador, and Calaveras counties for the California red-legged frog, California tiger salamander, and valley elderberry longhorn beetle, while also providing regulatory assurance that EBMUD can manage the lands for water supply and other lawful uses while enhancing habitat for these three species.

(3) conduct a field survey of the potential nesting locations identified that are near project facilities where project maintenance occurs.

For the northwestern pond turtle aquatic surveys, EBMUD proposes to: (1) identify and map known occurrences within the study area based on a review of existing information and agency consultation, (2) select the study sites in the vicinity of the Fish Population Study electrofishing sites on Pardee and Camanche reservoirs and on the Lower Mokelumne River, (3) add a second study site within Reach 3 and include one additional study site downstream of Highway 49 in the project boundary, (4) conduct visual encounter surveys (VES) at the study sites during the active turtle season, (5) collect and analyze environmental DNA (eDNA) samples, and (6) record any incidental sightings of turtles during other studies.

Foothill yellow-legged frog population sampling would occur in the vicinity of established electrofishing transects on the Lower Mokelumne River below Camanche Dam to WIDD and associated tributaries. As part of the Safe Harbor Agreement, California red-legged frogs are surveyed on a 3-year rotation within three established survey sections, with one in each recreation area (Camanche North, Camanche South, and Pardee).

For the foothill yellow-legged frog breeding habitat surveys, EBMUD proposes to identify areas for breeding, egg deposition, and larval development in the Lower Mokelumne River from Camanche Dam to WIDD and associated tributaries, based on a desktop analysis, and then develop a map of potential breeding habitat. For the foothill yellow-legged frog aquatic surveys, EBMUD proposes to: (1) conduct VES at representative sites in the vicinity of the Fish Population Study electrofishing sites on the Lower Mokelumne River during breeding season, (2) add a second study site within Reach 3, (3) conduct and analyze eDNA samples, (4) conduct two VES young-of-year surveys following breeding season, (5) record incidental observations during other studies, and (6) develop and updated map showing potential breeding habitat and documented occurrences.

Requested Study Modification

California DFW states that during study plan development, both California DFW and U.S. Fish and Wildlife Service (FWS) were involved in discussions with EBMUD regarding specific survey locations for inclusion in the FA-4 study, including on the Lower Mokelumne River between the project reservoirs and upstream of Pardee Reservoir; however, EBMUD did not include these locations in its Revised Study Plan (RSP). Therefore, California DFW requests that EBMUD be required to select final survey site locations in consultation with California DFW and FWS.

Reply Comments

EBMUD did not provide reply comments on California DFW's requested study modification.

Discussion and Staff Recommendation

California DFW did not explain why special status amphibian and aquatic reptile surveys need to be conducted at additional locations to adequately inform Commission staff's analyses of project effects on special status amphibians and subsequent development of license requirements (section 5.9(b)(4)). Staff finds that special status amphibians and aquatic reptiles would be adequately surveyed within the project boundary based on EBMUD's proposed studies for both northwestern pond turtle and foothill yellow-legged frog, as well as the continuation of the annual surveys required under the Safe Harbor Agreement for California red-legged frog, California tiger salamander, and western spadefoot. We conclude that EBMUD's proposed study would follow appropriate scientific methods (section 5.9(b)(6)) and provide adequate data to inform Commission staff's analysis of project effects and inform the development of license requirements (section 5.9 (b)(5)). We find that the proposed survey locations cover a representative area of locations that could potentially be affected by the project and would adequately inform our analyses of possible project effects. For these reasons, we do not recommend that EBMUD be required to select the final survey site locations in consultation with California DFW and FWS.

II. Studies Not Required

Environmental Justice Study (EJ-1)

Applicant's Proposal

EBMUD proposes to determine if and how continued project operations could disproportionately and adversely affect environmental justice (EJ) communities. The goals and objectives of EJ-1 are to: (1) identify the presence of EJ communities that may be located within the study area; and (2) develop strategies to conduct outreach to identified EJ communities to ensure meaningful involvement in the relicensing process is achieved.

Comments on the Study

No comments on the proposed study were filed.

Discussion and Staff Recommendation

President Trump's Executive Order 14148, titled 'Initial Rescissions of Harmful Executive Orders and Actions' rescinds Executive Order 14096 (Revitalizing Our Nation's Commitment to Environmental Justice for All). For this reason, the study is not needed for staff's environmental analysis, which will examine impacts to all potentially affected communities and, where appropriate, will consider measures to mitigate those impacts.