August 8, 2022

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

Re: Comments of Foothill Conservancy, California Sportfishing Protection Alliance, American Whitewater, Friends of the River, and the Mother Lode Chapter of the Sierra Club on Scoping Document 1, on the Pre-Application Document, on applicant-proposed studies and study requests of others, for the licensing of the proposed Mokelumne River Pumped Storage Project, P-14796-001

Dear Ms. Bose:

Foothill Conservancy (Foothill), California Sportfishing Protection Alliance (CSPA), American Whitewater (AW), Friends of the River (FOR), and the Mother Lode Chapter of the Sierra Club, hereinafter collectively "Conservation Groups", respectfully submit comments on Scoping Document 1 (SD1), on the Pre-Application Document (PAD), and on applicant-proposed studies and studies requested by others, for the licensing of the proposed Mokelumne River Pumped Storage Project, P-14796-001.[1] If constructed, the project would be located in Amador and Calaveras counties, California. The license applicant is GreenGenStorage, LLC (hereinafter referred to as GreenGen or applicant).

These comments are structured as follows. First, we provide comments on SD1. Second, we provide comments on the PAD. Third, we comment on studies proposed by GreenGen and by other licensing participants.

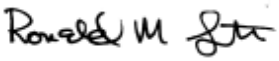
Thank you for the opportunity to provide these comments.

[1] *See* Scoping Document 1 for the Mokelumne Pumped Storage Project (Jun. 7, 2022), eLibrary no. 20220607-3011; *see also* Pre-Application Document, Mokelumne Pumped Storage Project P-14796 (Apr. 8, 2022), eLibrary no. 20220408-5267.

Respectfully submitted,

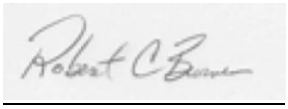
Megan Fiske
Executive Director
Foothill Conservancy
megan@foothillconservancy.org
(209) 223 – 3508

Chris Shutes
FERC Projects Director
California Sportfishing Protection Alliance
blancapaloma@msn.com
(510) 421-2405



Senior Policy Advocate
Friends of the River
(916) 442-3155 x 220
rstork@friendsoftheriver.org

Theresa L. Lorejo-Simsiman
California Stewardship Director
American Whitewater
(916) 835-1460
theresa@americanwhitewater.org



Rob Burness
Vice-Chair
Sierra Club Mother Lode Chapter
rmburness@comcast.net

BEFORE THE
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

GreenGenStorage LLC	**)**	**Mokelumne Pumped Storage Project**
	)	**Proposed Project No. 14796-001**

COMMENTS OF FOOTHILL CONSERVANCY, CALIFORNIA SPORTFISHING PROTECTION ALLIANCE, AMERICAN WHITEWATER, FRIENDS OF THE RIVER, AND THE MOTHER LODE CHAPTER OF THE SIERRA CLUB ON SCOPING DOCUMENT 1

Foothill Conservancy (Foothill), California Sportfishing Protection Alliance (CSPA), American Whitewater (AW), Friends of the River (FOR), and the Mother Lode Chapter of the Sierra Club, hereinafter collectively "Conservation Groups," respectfully submit comments on Scoping Document 1 (SD1) for the licensing of the proposed Mokelumne river Pumped Storage Project (P-14796-001). These written comments supplement the oral comments that Foothill and CSPA made at the daytime scoping meeting convened by staff from the Federal Energy Regulatory Commission (FERC or Commission) on June 29, 2022.[2]

I. The Commission should issue an environmental impact statement for the licensing of the proposed project.

The National Environmental Policy Act (NEPA) requires issuance of an environmental impact statement (EIS) for a proposed action that is "likely to have a significant effect." 40 CFR § 1501.3(a)(3).

There is virtual certainty of significant construction effects alone, including noise, traffic, vibration, and air pollution from operation of vehicles and equipment.

In addition, it is broadly acknowledged that there are extensive tribal cultural resources in the general project area. The cultural resources records search and literature review conducted by the GreenGen team identified a total of 171 prehistoric and historic cultural sites within the direct and indirect areas of potential effects (APEs).[3] The resources identified include ceremonial, archeological, petroglyph, and ancestral use sites that are important to the Northern Sierra Miwok Tribes and Washoe Tribe of Nevada and California. It is likely impossible to restore these resources once damaged or lost, especially since the integrity of the sites is "unusually high" due to their diversity and high concentration.[4]

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[2] *See* transcript of scoping meeting (June 29, 2022), eLibrary no. 20220715-4005, pp. 19-22 (M. Fiske, Foothill), 26-28 (M. Sierra, Foothill), 29-31 (B. Jobson, Foothill), 32-35 (C. Shutes, CSPA).
[3] *See* PAD, pp. 63.
[4] *Id.*

For these reasons and likely more, FERC should fulfill its NEPA responsibilities by issuing an EIS for this licensing proceeding.

II. The EIS should analyze alternatives that would meet the project purpose without constructing the proposed pumped storage project.

Scoping Document states in Section 3.3 (Alternatives to the Proposed Action): "Commission staff will consider and assess all alternative recommendations for operational or facility modifications, as well as protection, mitigation, and enhancement measures identified by the Commission, agencies, Indian tribes, NGOs, and the public."[5]

This formulation is inadequate under NEPA, because it assumes only modifications of the proposed action, not full alternatives to the proposed action. As the Council on Environmental Quality (CEQ) required in regulation on April 20, 2022, "reasonable alternatives" are defined as follows: "Reasonable alternatives means a reasonable range of alternatives that are technically and economically feasible, and meet the purpose and need for the proposed action."[6]

Applicant GreenGen explicitly frames the proposed Mokelumne Pumped Storage Project as energy storage. GreenGen's website (https://www.greengenstorage.com/) brands the proposed project as the "Mokelumne Water Battery Project," stating: "The Mokelumne Water Battery Project is designed to reduce California's reliance on fossil fuels by using excess renewable generation to pump water to higher elevations, storing carbon-free electricity until it is needed to meet peak energy demand."[7]

Since the stated purposed of the project is to store carbon-free electricity in order to meet peak demand for electricity, FERC's NEPA analysis should evaluate alternatives that would use different means to achieve the same stated purpose. This should, at minimum, include analysis of industrial-scale battery installation(s) to meet the needs for grid regulation and to meet peak load in the area that would be served by the proposed project. Such an alternative may prove more efficient or cost effective than the proposed pumped storage project in achieving the stated project purpose, and/or may have fewer or less severe environmental effects.

Consideration of reasonable alternatives that might avoid or lessen the impacts of the proposed action is consistent with the purpose of NEPA. This is true regardless of whether the lead agency ultimately has discretion to require an applicant to implement the alternative. NEPA was not designed to compel a specific outcome, but to bring about informed decision-making. The availability of a superior alternative, regardless of whether the lead agency has exclusive authority to require it, is relevant to a lead agency's decision whether to issue a permit or license and to the applicant's decision whether to proceed with, modify, or abandon its proposal.

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[5] *See* SD1, pp. 10.

[6] *See* Revised 40 CFR §1508.1(z) (Definitions), (published in Apr. 2022), pp. 23470.

[7] *See* https://www.greengenstorage.com/.

III. The EIS should analyze an alternative that would not require raising any dams.

The potential benefits to the proposed project of raising Salt Springs, Lower Bear, or Upper Bear dams are unclear. Presumably, it would increase flexibility to conduct pumped storage operations when reservoirs were close to full. However, during spill operations, it is likely that any additional capacity would also fill, eliminating flexibility with no freeboard at a higher reservoir stage. Other than during spill, reservoirs in California's Sierra Nevada mountains rarely remain full for long. A few thousand acre-feet of freeboard in upper and lower reservoirs would presumably allow pumped storage operation.

Many of the likely impacts of the proposed project attach to raising one or more dams. This is particularly true at Lower Bear, the most developed of the three reservoirs that have potential for project use. Raising one or more dams would likely also substantially increase construction impacts. A no-dam-raise alternative would be likely to greatly reduce the environmental effects of the project. The EIS should evaluate a no-dam-raise alternative.

IV. The EIS must analyze cumulative effects.

SD1 states that the Commission has not yet identified any cumulative effects of the proposed project.[8]

As discussed below, the proposed project would likely have cumulative water temperature effects downstream of the project area, in the North Fork Mokelumne River, mainstem Mokelumne River, Pardee Reservoir, and Camanche Reservoir.

In addition, the construction of the proposed project is likely to have socioeconomic effects in Amador and Calaveras counties due to temporary housing demand to accommodate workers constructing the project.

Temporary housing, or housing construction workers in camps, would be likely to create local sanitation and water supply effects.

There are likely to be many cumulative effects of project construction, and perhaps of project operation, on recreation. These include restrictions on access due to traffic and road closures. They also include restrictions on recreational enjoyment of features in the project area, due to noise, vibrations, visual impairment, loss of solitude, and similar.

Many other project effects would likely be exacerbated by their cumulative effects.

V. The EIS must analyze the effects of project operation on water temperature with a greater geographic scope than SD1 identifies.

[8] *See* SD1, pp. 11.

The most critical single water temperature issue in the Mokelumne River watershed is the maintenance of cold water releases from Camanche Dam into the lower Mokelumne River and into the intake for the Mokelumne River Fish Hatchery, located directly downstream of Camanche Dam. Both the Mokelumne River Fish Hatchery and the lower Mokelumne River produce fall-run Chinook salmon, which require cold water in roughly the October through May time period annually, and Central Valley steelhead, which require cold water year-round.

The East Bay Municipal Utility District (EBMUD) carefully manages cold water in its Camanche Reservoir and in its Pardee Reservoir, immediately upstream of Camanche, to maintain cold water for both hatchery and wild-produced salmon and steelhead. EBMUD describes this management as follows:

> EBMUD's approach to managing the system is based on direct control of the cold water hypolimnion in both Camanche and Pardee Reservoirs. This approach has been developed operationally; incorporating a flexible response to several unique features of the Pardee Reservoir/Camanche Reservoir system and is possible because of extensive monitoring during operation. The operational criteria for reservoir stratification in EBMUD's reservoir operations plan are:
>
> 1. Maintain stratification in Camanche Reservoir to the extent feasible from May through October to provide cold water releases to the lower Mokelumne River and the MRFH during the fall.
> 2. Maintain the stratification in Camanche by scheduling inflows of cold water from Pardee Reservoir, as needed, to replenish the hypolimnion of Camanche Reservoir. Releases from Pardee are normally not necessary for temperature management from approximately mid-November to April when Camanche Reservoir is cold and de-stratified.
> 3. Make best efforts to maintain a minimum of 28,000 acre-feet of hypolimneticd volume in Camanche Reservoir through October whenever Pardee Reservoir volume exceeds 100,000 acre-feet.[9]

EBMUD's cold-water management is extremely hands-on, and in critically dry years in particular requires very careful coordination across multiple operations to achieve cold water targets. The limited margin for error is shown in Figure 1, below.

[9] *See* EBMUD, Lower Mokelumne River Project – FERC Project No. 2916, 2021 Project Operations Report (Feb. 2022), eLibrary no. 202200217-5021, pp. 19-20.

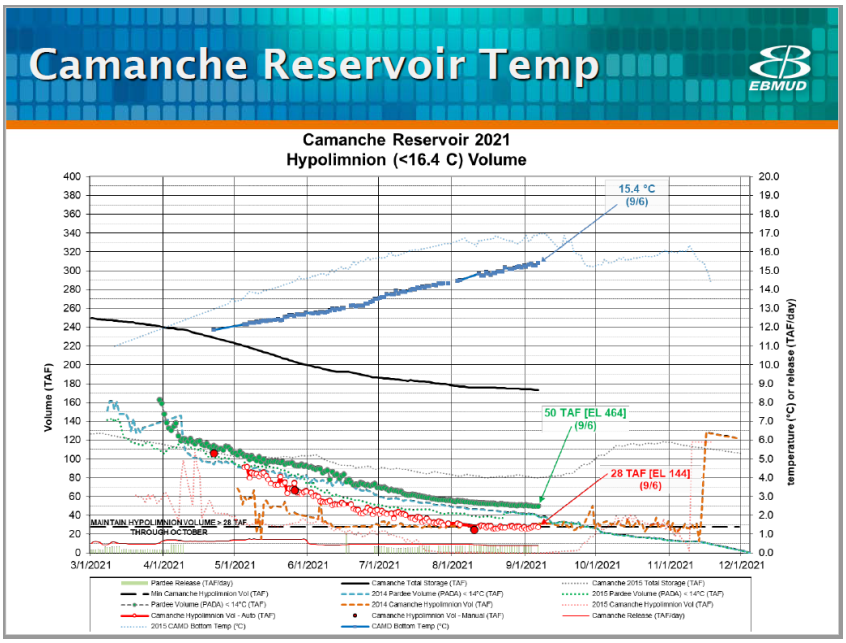

Figure 1: EBMUD graphic showing operation of Camanche Reservoir in critically dry year 2021, with comparison to critically dry year 2014. Note unfilled red circles from approximately August 10 through September 6, indicating maintenance of Camanche hypolimnion right at the 28,000 acre-feet target minimum. Source: EBMUD presentation on Water Supply Operations to EBMUD Partnership Coordinating Committee, September 10, 2021, slide 5.

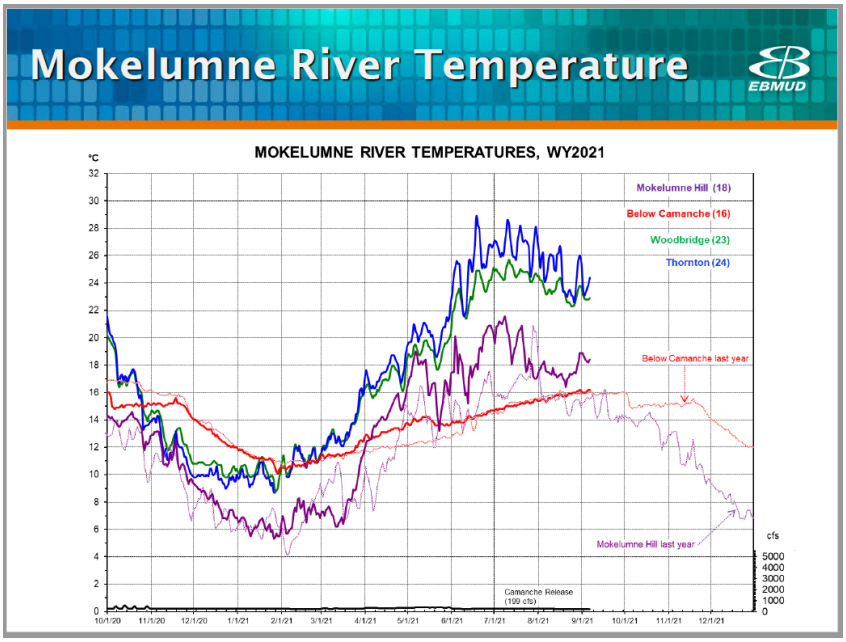

Figure 2: Water temperatures in the Lower Mokelumne River, water year 2021(through Sept. 6). Note rapid temperature increase from release at Camanche Dam (red line, River Mile 64) to Woodbridge Diversion Dam (green line, River Mile 40). Source: Ibid., slide 8.

Figure 2 shows that water in the lower Mokelumne River warms rapidly and extremely in the summer as it moves downstream from Camanche Dam. Even with EBMUD's careful management, over-summering rearing habitat for juvenile steelhead in the lower Mokelumne River is constrained to the reach of the river very near the dam. There is little margin for temperature increase in this highly constrained system.

It is unknown what effects changes the proposed Mokelumne Pumped Storage Project will have in the thermal stratification in Salt Springs Reservoir and in Lower Bear and/or Upper Bear reservoirs will be. It is unknown what changes the Mokelumne Pumped Storage Project would cause, seasonally, in release temperatures of water from these reservoirs and Salt Springs Powerhouse into the North Fork Mokelumne and the Project 137 system of canals, forebays, afterbays, and powerhouses. It is unknown whether changes in such release temperatures would seasonally change the thermal regime of water entering Pardee Reservoir.

However, due to the precarious thermal conditions of the lower Mokelumne River, it is reasonable to assume that any change in the thermal regime of water entering Pardee Reservoir could have significant effects on fish and their habitat in the lower Mokelumne River and on fish in the Mokelumne River Fish Hatchery.

The downstream effects of seasonal changes caused by the proposed project on the release temperature of water leaving Salt Springs Reservoir and Lower Bear and/or Upper Bear reservoirs and entering the North Fork Mokelumne and the Project 137 system are not necessarily intuitive. For example, colder release temperatures from Salt Springs in the spring and fall time periods could increase or prolong the mixing of water in Pardee Reservoir, delaying or disrupting thermal stratification. This effect could cascade downstream to Camanche Reservoir if the hypolimnion in Pardee Reservoir was less stable or less cold, constraining EBMUD's ability to use releases from Pardee to maintain the hypolimnion in Camanche.

The Commission should assure that all of these potential thermal project effects are studied as needed and analyzed in the licensing process, and evaluated in the EIS.

In terms of SD2, Conservation Groups recommend that it replace the language in the third bullet of Section 4.2.2. (Aquatic Resources) of SD1 that currently reads: "Effects of proposed project construction, operation, and maintenance on water quality, temperature, and thermal stratification in the reservoirs." Conservation Groups recommend that SD2 insert instead two bullets (recommended revision shown below in bold italics) that read:

- ***Effects of proposed project construction, operation, and maintenance on water quality and water temperature in Upper Bear, Lower Bear, Salt Springs, Pardee, and Camanche reservoirs; in the Bear River downstream of Lower Bear Reservoir; and in the North Fork and mainstem Mokelumne River between Salt Springs and Pardee reservoirs.***
- ***Effects of proposed project construction, operation, and maintenance, as applicable, on thermal stratification in Upper Bear, Lower Bear, Salt Springs, Pardee, and Camanche reservoirs.***

VI. The EIS should evaluate additional issues captured in the following recommended changes to be included in SD2.

A. SD2 should add a bullet to Section 4.2.3 (Aquatic Resources) to address project effects on aquatic macroinvertebrates in project-affected reservoirs.

Stage fluctuations and turbulence due to pumped storage operations may affect different life stages of caddisflies and callibaetis mayflies, likely the primary aquatic insects that provide food for fish in Lower Bear, Upper Bear, and Salt Springs reservoirs. Lake caddisflies and mayflies heavily use shallower water habitats, which are likely to be particularly affected by pumped storage operations. SD2 should add a bullet to Section 4.2.3 (Aquatic Resources) that reads: "Effects of the proposed action on aquatic macroinvertebrates in Lower Bear, Upper Bear, and Salt Springs reservoirs."

B. SD2 should, in Section 4.2.4 (Terrestrial Resources) and Section 4.2.5 (Threatened and Endangered Species), specifically mention foothill yellow-legged frogs (**rana boylii**).

Known populations of foothill yellow-legged frogs (*rana boylii*) exist in the North Fork Mokelumne River downstream of Salt Springs Reservoir. These populations may be affected by any change in the thermal regime in the North Fork Mokelumne that pumped storage operation of the proposed project may cause. The first bullets of Section 4.2.4 (Terrestrial Resources) and of Section 4.2.5 (Threatened and Endangered Species) of SD1, respectively, call out effects of the project on red-legged frogs and Sierra Nevada yellow-legged frogs. SD2 should add foothill yellow-legged frogs (*rana boylii*) to both of these bullets. Foothill yellow-legged frogs are listed as threatened under the California Endangered Species Act, and are undergoing a listing process for threatened status under the federal Endangered Species Act.

C. SD2 should add more specificity regarding the substance and geographic scope of project effects in Section 4.2.6 (Recreation Resources).

SD1 notes on page 9 (Section 3.2.3) that GreenGen proposes measures to mitigate project effects on recreation as follows: "Consult with the Forest Service to avoid or minimize conflicts in accessing recreational opportunities on Upper and Lower Bear reservoirs and identifying where proposed access roads related to project construction, operations, and maintenance would be located."

Section 4.2.6 (Recreation Resources) of SD1 calls out effects of the proposed action on "recreation use and resources in the project area" and "Effects of project construction, operation, and maintenance on recreational whitewater boating use on the North Fork Mokelumne River, within the project area."[10]

Recreation interests exist outside of those who recreate "on Upper and Lower Bear reservoirs." Recreation occurs on Salt Springs Reservoir. Recreational boating (including a

[10] *See* SD1, pp. 13.

whitewater put-in) occurs on the North Fork Mokelumne River immediately downstream of Salt Springs Dam. There are established rock climbing areas below the Salt Springs Reservoir Dam. There are privately owned cabins, a Boy Scout camp, an LDS camp, a resort, and a marina at Lower Bear Reservoir. There are hundreds of campsites in close proximity to the proposed project. The proposed project, at minimum during construction, could limit or restrict access to the nearby Mokelumne Wilderness Area. Restrictions on road use during and/or after construction could limit recreation access for hunting or for winter snowmobiling.

SD2 should be clearer about effects on recreation use and resources than SD1. It is unclear in Section 4.2.6 of SD1 what the qualifier "in the project area" actually means.

There is, for instance, no whitewater boating within the reservoirs that the Mokelumne Pumped Storage Project would encompass within the project boundary. The proposed action could limit access to a whitewater put-in to the North Fork Mokelumne River just downstream of Salt Springs Dam, either during construction, or due to road use conflicts with access to project facilities, or due to the proximity of the put-in with critical energy infrastructure. If these are the potential project effects, SD2 should spell it out. If there is more that, SD2 should spell that out as well.

In sum, SD2 should clarify that the EIS will evaluate "[e]ffects of project construction, operation, and maintenance on recreation use and resources ***in the Mokelumne River watershed upstream of Pardee Reservoir.***" Studies and comments in the licensing proceeding will illuminate just what the extent and geographic scope of those effects are. Similarly, SD2 should clarify that the EIS will evaluate "[e]ffects of project construction, operation, and maintenance on recreational whitewater boating use ***between Salt Springs Dam and Pardee Reservoir.***" (Recommended revisions in bold italics.)

D. SD2 should explicitly address project effects on state as well as federal wild and scenic resources in Section 4.2.7 (Land Use and Aesthetic Resouces).

Section 4.2.7 (Land Use and Aesthetic Resources) of SD1 calls out "Effects of project construction, operation, and maintenance on National Wild and Scenic River System eligible river segments in the project-affected area."[11]

The North Fork Mokelumne River downstream of Salt Springs Reservoir gained California Wild and Scenic River designation in 2018. This designation protects the river from harmful projects and activities that would damage the outstanding wild, scenic, and recreational values the river provides. The Mokelumne Pumped Storage Project has the potential to impact the Wild and Scenic Mokelumne River segment by impairing access to recreation, causing noise and traffic impacts, and using destructive or obtrusive equipment that affects the scenic and other aesthetic values of the river.

SD2 should add a call-out to recognize state wild and scenic designation for the Mokelumne River, adding at the end of the preceding cited sentence: ***"… and on the existing***

[11] *See* SD1, pp. 14.

Mokelumne River wild and scenic corridor created pursuant to the California Wild and Scenic Rivers Act." (Recommended addition in bold italics.)

VII. SD2 should correct factual errors in Section 3.1.1 (Mokelumne Hydroelectric Project Existing Facilities) concerning the reservoir storage capacities of the existing Upper Bear River Reservoir and Lower Bear River Reservoir.

SD1 identifies reservoir storage capacities as follows: "the 1,770-acre-foot Upper Bear Reservoir …[and] the 1,840-acre-foot Lower Bear Reservoir."[12] However, the Pre-Application Document (PAD) identifies the storage capacities as 7306 acre-feet for Upper Bear Reservoir and 52.025 acre-feet for Lower Bear Reservoir.[13] Values in SD2 should line up the reservoir capacities stated in the PAD, and should clarify whether the amounts refer to usable storage or the total storage capacity in the respective reservoirs.

[12] *See* SD1, pp. 6.

[13] *See* PAD, Vol. 1, Tables 4-4 and 4-5, pp. 37.

BEFORE THE
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

GreenGenStorage LLC	**)**	**Mokelumne Pumped Storage Project**
	)	**Proposed Project No.14796-001**

COMMENTS OF FOOTHILL CONSERVANCY, CALIFORNIA SPORTFISHING PROTECTION ALLIANCE, AMERICAN WHITEWATER, FRIENDS OF THE RIVER, AND THE MOTHER LODE CHAPTER OF THE SIERRA CLUB ON PRE-APPLICATION DOCUMENT

Foothill Conservancy (Foothill), California Sportfishing Protection Alliance (CSPA), American Whitewater (AW), Friends of the River (FOR), and the Mother Lode Chapter of the Sierra Club, hereinafter collectively "Conservation Groups," respectfully submit comments on the Pre-Application Document (PAD) for the licensing of the proposed Mokelumne river Pumped Storage Project (P-14796-001).

These comments are organized by section of the PAD.

4.3.1. Lower Reservoir

The applicant should further clarify where the intake/outlet structures in the lower reservoir are in relation to the "nearly dead pool conditions in the fall and early winter."[14]

The statement that "With the addition of the Project, the reservoir's water level fluctuations will still fall between the two current operating points"[15] does not make it clear whether or not the project would be able to operate when the lower reservoir is at dead pool conditions.

4.7. Transmission Lines

The applicant should acknowledge in its draft license application that the existing transmission lines that they propose to use are not currently capable of handling the extra load and that upgrades would be required.

4.8. Project Operations

While Tables 4-6 through 4-8 and Figures 4-6 through 4-11[16] are helpful, the applicant should provide the same information for the hourly operational fluctuation.

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[14] *See* PAD, pp. 48

[15] *See* PAD, pp. 48

[16] *See* PAD, pp. 53-57

5.0 Cultural and Tribal Resources:

Due to the high concentration and importance of Native American resources within the proposed project area, we are concerned about the suitability of this project's location. This project would cause direct, indirect and cumulative impacts to Native American cultural, spiritual, and religious sites as well as traditional gathering places. While we do not speak on the behalf of Tribes, we do want our comments to respect and reaffirm their concerns regarding the cultural resources and lifeways that could be threatened by this project.

First of all, a full EIS should be completed for this project to analyze the significant number of impacts to cultural and Tribal resources. The cultural resources records searches and literature review conducted by the GreenGen team identified a total of 171 prehistoric and historic cultural sites within the direct and indirect areas of potential effects (APEs). The resources they identified include ceremonial, archeological, petroglyph and ancestral use sites that are important to the Northern Sierra Miwok Tribes and Washoe Tribe of Nevada and California.[17] They also identified some historic resources left behind from the mining era such as 20th century occupation sites, mining debris, and remnants of hydroelectric development features. The presence of these resources will make it extremely challenging for the project not to cause significant impacts. It is impossible to restore these resources once they have been lost, especially since the integrity of the sites are "unusually high"[18] due to their diversity and high concentration. Therefore, a full EIS should be conducted to understand the full extent of cultural and Tribal resources impacts in the project area.

In addition to requiring a full EIS to analyze impacts, extensive cultural resource identification surveys and non-disturbance and/or mitigation plans should be completed prior to the issuance of the EIS. These surveys and plans should include all Tribes who have expressed interest in the project as documented in the Tribal consultation memos. This will give an opportunity for all interested Tribes to identify their resource concerns and discuss with the applicant what measures need to be taken to protect those resources before the project is finalized. It would also show that the project applicant GreenGen is acting in good faith to sponsor meaningful Tribal consultation by allowing all interested Tribes to participate in the resource identification and mitigation plan process.

Cultural resource identification and mitigation plan process should begin as soon as possible to allow the most time for addressing Tribal concerns and interests. Many of these Tribes have only one representative who engages with government projects and environmental resources, which can leave them with very little capacity to engage on a large-scale project like this. Starting the process early, considering the input from all interested tribes, and providing as many opportunities for input as possible will demonstrate that GreenGen is acting in good faith to sponsor meaningful Tribal consultation. We hope to see these actions being taken before the draft license application is filed.

[17] *See* PAD, pp. 75
[18] *Id.*

The PAD discusses input from only one Tribe. The only Tribe that joined GreenGen on the cultural resources site visit that helped determine the area of potential effects (APE) was the Calaveras Band of Mi-Wuk Indians, even though there are other recognized tribes who have expressed interest in the project. The Washoe Tribe of Nevada and California, the Buena Vista Band of Me-Wuk Indians, and the Ione Band of Miwok Indians have all expressed interest in both cultural and tribal resources as well as other resources like waterways and fish populations.[19] We expect there to be consultation with other Native American Tribes and consideration for their interests before the draft application license is filed.

The Calaveras Band of Me-Wuk does not speak for other Tribes, so statements such as "The survey did not identify any red flags that would prevent the use of either Lower Bear or Upper Bear Reservoirs for Project purposes"[20] should be removed or modified to reflect that one survey effort led to that conclusion, noting that further consultation with additional Tribes will be conducted to determine potential impacts. The applicant should refrain from stating there are no adverse effects to cultural resources before completing tribal consultation.

Finally, we believe the Commission needs to make a better effort to consult with interested Tribes. Many of the Tribal consultation memos that were filed in the FERC eLibrary were records of failed attempts at communication with the Tribal Chairperson.[21] Most tribes have a specific Tribal Historic Preservation Officer (THPO) or cultural resources officer who gets involved with projects because the Tribal Chairperson has other responsibilities to fulfill. FERC staff should make additional efforts to communicate with the THPO or cultural resources representative of each Tribe, as well as with the Tribal Chairperson.

6.1.4. Geotechnical Site Tour

We encourage the applicant to consult with PG&E, the licensee of Project 137 regarding dam safety evaluations and reports that should be available to the project applicant to better inform the geotechnical history of the dams and associated structures.

6.2.2. Existing Streamflow Data

It is important to note that the historical outflow data for Lower Bear reservoir provided only includes years in which flows were being regulated by the existing operational Upper Bear reservoir and does not represent "natural" pre-reservoir flow rates.

6.2.3. Existing Water Quality Data

Robust studies and monitoring of water temperature in the reservoirs must be provided. The applicant refers to in-reservoir temperature monitoring that ended in 2009. Given climate change considerations in particular, this data is minimal and needs to be adjusted to consider

[19] *See* FERC Tribal consultation memos, eLibrary no. 20220608-3018, eLibrary no. 20220610-3013, and eLibrary no. 20220706-3034

[20] *See* PAD, pp. 75

[21] *See* FERC Tribal Consultation memos, eLibrary no. 20220713-3005, and eLibrary no. 20220713-3009

rising temperatures and declining snowpack. Within the 8 years of in-reservoir temperature monitoring, there were times that dissolved oxygen (DO) in the cold water pool dropped below the Basin Plan standard. This makes it even more critical to ensure water quality decisions are based on robust and recent information.

6.4.2. Wildlife Resources

Salt Springs Reservoir is home to one of around 400 known pairs of nesting Peregrine Falcon.[22] This is a very unique and important location for Peregrine Falcon. License conditions should specifically address the impacts of construction, particularly noise and dust, on Peregrine Falcon. In addition, the license should consider mitigation for increasing the voltage of the transmission lines in the project footprint, which pose a risk to all avian species, including the Bald Eagle.

6.6.2. Culturally Significant Species

The Calaveras Band of Mi-Wuk is not the only Tribe that may be concerned about culturally significant species in the project footprint. As noted above, the applicant should incorporate feedback from any and all affected and interested tribes.

6.7. Non-Native Invasive Species

Moving water between two water bodies provides an opportunity to spread invasive species as well as disease. The license application should address and if necessary propose mitigation for the spread of water-borne diseases, particularly the Chytrid fungus, which affects amphibians. Mitigations should be in place, specifically mitigating the risk of disease spread through decontamination of equipment when moving between watersheds. Consultation with the USFWS to determine the appropriate mitigations is encouraged. We also recommend the use of eDNA sampling to determine presence/absence of aquatic species and diseases.

6.8.1.1 Cabins, Camping, and Day Use Areas

The applicant should acknowledge that the ease of accessibility to Project reservoirs is due to the paved roads that access this remote high elevation area.

The Camp Winton Boy Scouts of America facility is not accurately described in the PAD. The PAD states that Camp Winton "is accessible only by foot or boat;"[23] however, Camp Winton is accessible by vehicle using the gated dirt road off Bear River Road. Hundreds of boy scouts annually attend this camp on the shore of Lower Bear Reservoir and utilize the boat ramps and other associated facilities. Additionally, the conceptual engineering maps show LDS Camp Ritchie but none of the other developed recreational facilities, including Camp Winton, around Lower Bear Reservoir.

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[22] *See* https://wildlife.ca.gov/Conservation/Birds/Peregrine-Falcon

[23] *See* PAD, pp. 118

In addition to the developed campgrounds, extensive "dispersed" camping, which does not require a fee, occurs throughout the project area. The license applicant should acknowledge this use as well and attempt to quantify it. Quantifying dispersed camping is important for considering socioeconomics and environmental justice impacts, as it is typically lower-income individuals who opt for free camping.

6.8.1.7. Climbing

The Calaveras Dome climbing area has world-class granite traditional climbs. There are 62 documented climbs on 3 domes plus a few random routes scattered in the area. The primary domes that climbers access are Calaveras Dome and Hammer Dome. Climbers drive down the main access road (Ellis Creek Road) to Salt Springs Road and park at various pullouts to then hike to the base of these domes. All climbs can be completed in a day. The proximity to Tahoe and Sacramento make this a semi-popular climbing area. Use levels remain moderate due to the difficulty and length of many of the climbs. The rock quality and routes are of high quality. The license application should analyze access to these resources through construction, and should propose feasible mitigation for any loss of access.

6.8.3 Mokelumne Wilderness Area

At this stage in the project, it is inaccurate for the project applicant to say that "It is not anticipated that proposed Project construction or operations would impact the Mokelumne Wilderness Area."[24] The proposed project powerhouse is only 800 feet away from the wilderness boundary, so there is likely to be some noise, traffic, and construction-related issues. On a recent field visit, we could hear the humming of the current powerhouse from all the way up the canyon above Salt Springs Reservoir. The applicant and Commission staff should review the Mokelumne Wilderness Management Guidelines[25] and consult with the USFS to ensure that the proposed project and its construction will comply with the standards and guidelines provided by that document.

6.8.4 Wild and Scenic Rivers

The PAD does not completely reference the appropriate studies and plans to update the description of eligible National Wild and Scenic River segments on the North Fork Mokelumne and Bear Rivers in the license application. According to the Stanislaus National Forest Land and Resource Management Plan EIS Appendix E: Wild and Scenic River Study Eligibility/Suitability[26], a total of 27 miles of the North Fork Mokelumne from Highland Lakes down to Salt Springs Reservoir is eligible for National Wild and Scenic River (NWSR) designation. This segment contains outstandingly remarkable scenic, recreation, geology, and fish values. The North Fork Mokelumne above Salt Springs Reservoir has a total of 9 recreation-eligible and 18 wild-eligible miles. The PAD currently says there are only 22 miles that are eligible upstream of Salt Springs Reservoir.

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[24] *See* PAD, pp. 126

[25] *See* Mokelumne Wilderness Management Guidelines (March, 2000).

[26] *See* Stanislaus National Forest Land and Resource Management Plan EIS, Appendix E, Wild and Scenic River Study Eligibility/Suitability (October, 1991).

There are also more than 6 miles downstream of Salt Springs Reservoir that are eligible for NWSR designation. According to the ENF Land and Resource Management Plan ROD, "The North Fork of the Mokelumne, from below Salt Springs Reservoir to Tiger Creek Reservoir, has been determined to be eligible for inclusion in the National System. A ten mile segment is eligible for a 'recreation' classification and another 7 miles is eligible for a 'wild' classification."[27] This means there 17 miles from immediately below Salt Springs Reservoir to Tiger Creek Reservoir that are eligible for NWSR designation. The 10-mile recreation segment was found eligible but not suitable for NWSR designation; however, the applicant must still comply with the State Wild and Scenic River laws for that segment.

The BLM Sierra Resource Management Plan (RMP) and ROD[28] found an additional 20.2 miles of the North Fork Mokelumne from below Tiger Creek Dam down to 100 feet below Highway 49 eligible for NWSR designation. It is extremely important to accurately describe the eligible NWSR segments so that potential project impacts to WSR eligibility can be determined. The license application should analyze potential impacts to eligibility for all of the appropriate river segments.

In response to the proposed project, the USFS has the authority to reassess Wild and Scenic River eligibility/suitability to determine if new information or circumstances have arisen. Section 5(d)(1) of the NWSRA states:

> In all planning for the use and development of water and related land resources, consideration shall be given by all Federal agencies involved to potential national wild, scenic and recreational river areas, and all river basin and project plan reports submitted to the Congress shall consider and discuss any such potentials. The Secretary of the Interior and the Secretary of Agriculture shall make specific studies and investigations to determine which additional wild, scenic and recreational river areas within the United States shall be evaluated in planning reports by all Federal agencies as potential alternative uses of the water and related land resources involved.

The original USFS assessment of the Mokelumne river was in 1988, so there is a large amount of new information available about the presence of outstanding values. The project applicant should consult with the USFS to reassess designated segments and determine if the project will impact the eligibility of those segments. In an appeal to the Forest Service ENF Land and Resource Management Plan, it was revealed that the USFS had tentatively decided that lower Bear River, Cole Creek, Green Creek, and Beaver Creek in the Mokelumne Archeological District were also eligible due to outstanding cultural values.

It is against the NWSRA to allow developments and projects that impact the outstanding values of designated and eligible WSR. If these segments within the Mokelumne Archeological Area are determined to be eligible, then the project would not be allowed to move forward since it will have significant impacts to Cole Creek and potentially lower Bear River.

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[27] *See* ENF Land and Resource Management Plan ROD (January, 1989), pp. 7

[28] *See* BLM Sierra Resource Management Plan and ROD (February, 2008).

It is inaccurate for the project applicant to imply that the project will not have potential effects on designated or eligible Wild and Scenic River Segments. "During Project licensing, any potential effects to designated or eligible Wild, Scenic, or Recreational river segments due to proposed Project construction or operations will be evaluated, however, the Project does not propose to modify the high-water mark of Salt Springs Reservoir."[29] Just because the project does not propose to modify the high-water mark of Salt Springs Reservoir does not mean that it will not impact designated and eligible Wild and Scenic River segments.

The project can affect Wild and Scenic River segments with outstanding recreational values by impacting access to recreation areas like boating take- outs, campgrounds, day use areas, hiking trails and dispersed recreation areas. The project construction season is likely to overlap with peak recreational use periods, which could impact the recreational value of these rivers. There is a large amount of Cultural and Tribal Resources in the project area that contribute to the Wild and Scenic value of both the Mokelumne River and Bear River. The project has the potential to impact these cultural and Tribal sites, which could then affect Wild and Scenic River designation.

6.10. Socioeconomic Resources

The applicant should provide a more thorough review of the socioeconomic impacts on businesses that operate within the project footprint, in addition to looking at socioeconomics county-wide. Project construction and operation will have impacts on socioeconomics. If construction closes access across the dam, the Camp Winton Boy Scout camp would be inaccessible, resulting in loss of access to affordable recreation, and impacts to the staff. Project construction and operation will very likely impact the Bear River Resort, which may or may not be able to continue to operate normally during construction and operation. The daily shoreline fluctuation may impact the Resort's ability to offer a dock and seasonal boat slip rentals, and may impact their boat rental operation. The resort is family-owned and employs locals, some of whom live on site. The impacts to recreation from the project would have socioeconomic impacts that should be assessed and mitigations proposed. Additionally, any mitigations for loss of recreational access should be in place before access is lost or reduced.

7.0 Preliminary List of Potential Issues and Study Needs

The existing information gathered in the PAD is very general and lacks detail, making it difficult for us to identify study needs and potential issues. We are expecting the applicant to file more detailed study plans after collaborating with the USFS, USFWS, the California State Water Resources Control Board (SWRCB), and other interested licensing participants. Collaborating with these agencies to form detailed study requests will make it easier for both the applicant and licensing participants during the licensing process.

7.1 Cultural and Tribal Resources

[29] *See* PAD, pp. 128

The Cultural and Tribal Resources section of the PAD states that "GreenGen would work collaboratively with all requisite Tribal, state and federal entities to define the APE associated with the Project."[30] However, the PAD reflects consultation with one tribe to define the APE of the project, the Calaveras Band of Mi-Wuk Indians. It is imperative that GreenGen begins to collaborate with all other tribes who have expressed interest in this project, including the Washoe Tribe of Nevada and California, the Buena Vista Band of Me-Wuk Indians, and the Ione Band of Miwok Indians. A collaborative effort with all interested tribes to identify tribal resources and develop a historic properties management plan (HPMP) would be the best way to ensure GreenGen is adhering to the National Historic Preservation Act (NHPA) Section 106 compliance process.

The PAD suggests, in contrast, that the applicant intends to rely heavily on consultation with one tribe. For example, "The indirect APE is proposed to be surveyed with the same methods but in more selective areas based on consultation with the Calaveras Band of Mi-Wuk Indians and the USFS."[31] There are other tribes who have interests and resources within the project area who should be allowed to give their input on this project. The applicant should consult with other tribes to identify resources, develop field survey methods, and develop resource management plans.

7.2 Geology and Soils

Conservation Groups are concerned that project-related erosion could have negative impacts to native fish and wildlife, both within and downstream of the reservoirs. We support the plan to conduct a geotechnical study that evaluates impacts to shoreline erosion, stabilization techniques, what to do with tunnel spoils, and other areas. This study should also include an analysis of how the erosion associated with the project could impact native species and associated habitats. It is worth noting that Bear River Resort has existing erosion control in place to protect some of its shoreline infrastructure, and a significant stretch of Bear River Road along the Southern shore of Lower Bear Reservoir already requires large rock riprap to protect the shoreline and the road.

7.4. Fish and Aquatic Resources

The license application should evaluate potential impacts to fish and aquatic resources from the potential spread of disease, specifically *Chytridiomycosis* from the fungus *Batrachochytrium dendrobatidis*. We recommend using eDNA sampling to determine the presence/absence of the fungus in waterways which are habitat for listed amphibians. Mitigation measures should include decontamination of equipment when traveling between watersheds.

7.5. Wildlife and Botanical Resources

[30] *See* PAD, pp. 141
[31] *See* PAD, pp. 142

In addition to the proposed studies, the licensee should also evaluate the potential impacts to bat populations in the area. Bat populations are declining where white-nose syndrome is present. Especially given the project's use and construction of underground infrastructure and adits, it is important to survey for and provide necessary mitigation for bat populations that may be present in the project area, as some sensitive bat species are known to utilize caves and structures.

7.6. Wetlands, Riparian, and Littoral Habitat

The relationship between groundwater and wetland, riparian and littoral habitat warrants further consideration. Impacts from any dam raise, from the daily reservoir fluctuation, and from the proposed power tunnel on the groundwater table should be examined.

7.7. Recreation and Land Use

A dam raise at either reservoir would impact recreational components in the area, both during construction and over the course of project operation. After study of potential impacts, the license application should propose adequate mitigation measures that can be put into place before construction begins.

7.9. Socioeconomic Resources

We disagree that there are no potential adverse effects to socioeconomic resources from construction and operation. Loss of access during construction will have socioeconomic impacts and should be further evaluated in tandem with examining recreational impacts from the project. The socioeconomic impacts related to Bear River Resort warrant close examination, as multiple years of construction may have a disproportionate impact on resort operations and its economic viability. Remote resorts such as Bear River Resort are already subject to loss of income when wildfire, drought and other climate-related challenges deter tourism. Multiple seasons of impacts from construction and/or operation P-14796 could impact the viability of the business in the long term.

BEFORE THE
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

GreenGenStorage LLC	**)**	**Mokelumne Pumped Storage Project**
	)	**Proposed Project No. 14796-001**

COMMENTS OF FOOTHILL CONSERVANCY, CALIFORNIA SPORTFISHING PROTECTION ALLIANCE, AMERICAN WHITEWATER, FRIENDS OF THE RIVER, AND THE MOTHER LODE CHAPTER OF THE SIERRA CLUB ON APPLICANT-PROPOSED STUDIES AND STUDIES REQUESTED BY OTHERS

Foothill Conservancy (Foothill), California Sportfishing Protection Alliance (CSPA), American Whitewater (AW), Friends of the River (FOR), and the Mother Lode Chapter of the Sierra Club, hereinafter collectively "Conservation Groups," respectfully submit comments on applicant-proposed studies and studies requested by others for the licensing of the proposed Mokelumne river Pumped Storage Project (P-14796-001).

The information provided in the PAD about the preliminary list of potential issues and study needs is extremely general, making it challenging to form new study requests. We hope to collaborate with the project applicant and other interested licensing partners to help develop appropriate study plans that provide the necessary information to evaluate potential project impacts. The feedback below is provided for the Mokelumne Pumped Storage Project (P-14796) summary of studies to be conducted under the Integrated Licensing Process (ILP) study program.[32] We hope our feedback identifies where there is a lack in data, and what other study information is needed to evaluate potential project impacts.

I. Comments on Operations and Water Temperature Modeling, applicant-proposed study WR-1.

According to a handout distributed by consultants to GreenGen to an online meeting of licensing participants on July 18, 2022, GreenGen proposes to develop an operations model to simulate the operation of Upper Bear, Lower Bear and Salt Springs reservoirs ("project reservoirs"). GreenGen also proposes to model the water temperature and thermal stratification of those reservoirs, and the water temperature of releases from those reservoirs by developing and deploying a CE-QUAL-W2 model, which would use inputs from the newly developed operations model.

Conservation Groups look forward to working with GreenGen to select an appropriate modeling platform for the operations model. It will be important to construct a model on a daily time-step, with capabilities to model hourly operations on an in-model or post-processing basis.

[32] *See* Mokelumne P-14796 DRAFT Study Program Study Table Summary, distributed by consultants to GreenGen to an online meeting of licensing participants on July 18, 2022.

Conservation Groups support the use of a CE-QUAL-W2 model as appropriate to model thermal stratification and mixing within the three reservoirs that may be directly affected if the proposed project is constructed and operated.

As discussed above in comments on scoping, it is unknown whether construction and operation of the project will change the release temperatures from the project reservoirs into the North Fork Mokelumne River. It is important to recognize that changes in the timing of stratification of the project reservoirs, as well as changes in average release temperatures into the North Fork Mokelumne River and into PG&E's Project 137 hydropower system, could affect aquatic biota downstream. This is because changes in stratification of the project reservoirs could affect the timing as well as the average temperatures of these releases.

As an example, warmer releases in the spring into the North Fork Mokelumne River could accelerate the onset of breeding of foothill yellow-legged frogs, an ESA candidate species, in the Devil's Nose reach of the North Fork Mokelumne River. Earlier breeding, particularly in wetter water years, could increase the likelihood that egg masses could be scoured if there are spills following the onset of breeding.

Increases in the temperatures of water released from Salt Springs into the Project 137 system could adversely affect resident rainbow trout in the North Fork and mainstem Mokelumne River. In addition, Foothill Conservancy, CSPA, EBMUD, fisheries agencies, and others spent several years beginning in 2015 developing a plan for a pilot reintroduction of fall-run Chinook salmon into the reach of the mainstem Mokelumne River between Pardee Reservoir and the confluence with the Middle Fork Mokelumne. EBMUD is currently evaluating the costs and technical requirements of adding filtration facilities to the Mokelumne River Fish Hatchery that would mitigate the potential introduction of pathogens that might accompany such a reintroduction. Increases in fall water temperatures in the mainstem Mokelumne upstream of Pardee Reservoir could adversely affect the opportunity for reintroduction of Chinook salmon into upstream of Pardee Reservoir, as well as the fish passage conditions for the existing population of kokanee salmon in Pardee Reservoir that spawns in the Mokelumne River upstream of Pardee.

It is the understanding of Conservation Groups that EBMUD plans to request a study of the thermal impacts of the construction and operation of the proposed Mokelumne Pumped Storage Project on inflows to Pardee Reservoir and on the thermal stratification of EBMUD's Pardee and Camanche reservoirs. For reasons largely described above in section V of comments on scoping, Conservation Groups support EBMUD's study request. Any change in the thermal regime of inflows to Pardee Reservoir has the potential to adversely affect EBMUD's ability to manage stratification and cold-water management in Pardee and Camanche reservoirs. This in turn could adversely affect fisheries in the lower Mokelumne River and in the Mokelumne River Fish Hatchery.

Conservation Groups call attention to the fact that there is no publicly available operations model for PG&E's Project 137 system. In order to model the downstream thermal effects of any changes in output temperatures from Salt Springs due to the proposed project, it will be necessary to develop an operations model for the Project 137 system. This will require

the cooperation of Project 137 licensee PG&E and considerable technical effort. Any impulse on the part of Commission staff, GreenGen, or PG&E to defer development of an operations model for the 137 system should be tempered by the reality that development of such a model may exceed the time that would be allotted in a second-year study that made model development contingent on the outcome of the modeling of project reservoirs (itself an extensive effort).

II. Comments on Additional Proposed Studies

A. BR-1 Special Status Amphibian and Aquatic Reptile Study

We encourage the applicant to consult with USFWS and the USFS in addition to PG&E to determine appropriate protocol for surveys, particularly for *Rana sierrae*. The study plan refers to using a modified version of the Seltenrich and Pool (2002) protocol, which is a protocol specific to *Rana boylii*, not *Rana sierrae*. Differences in their habits and habitats suggest that survey protocols are not directly applicable. We also encourage collaboration with the P-137 Ecological Resources Committee and the associated SEMP study efforts so that both projects may benefit from the study effort and that the study be as comprehensive as possible.

Additionally, the amphibian study should survey for Batrachochytrium dendrobatidis, the fungal source of the amphibian disease *Chytridiomycosis*, using eDNA sampling. If the fungus is present in any of the water bodies, mitigations to prevent the spread of the fungus by surveyors as well as project construction and operation will need to be implemented.

B. R-4 Wildlife Study

We request that Component 5: Bat Habitat Assessment and Survey include supplemental surveys for the presence of white-nosed syndrome where project construction and operation would impact bat populations identified through the survey effort. White-nosed syndrome has been spread via humans between cave systems and other bat habitats, so mitigation measures may be necessary if project operations are determined to impact bat habitats.

C. GS-1 Geotechnical Investigation

Because the applicant has not committed to which of the upper reservoirs will be utilized, the study should evaluate both tunnel alignments in phase 2.

GS-1 should also evaluate the impacts of the dam raises on both reservoirs as well as on the shorelines of the reservoirs.

GS-1 should look at the potential for erosion and instability from the daily fluctuations of reservoir levels.

D. RA-1 Recreation Resources and Land Use Study

Given the tremendous concentration of recreation resources in the project area and the expected impacts of construction and operation of the project on shoreline resources and access,

it is especially important to conduct a robust recreation and land use study. The 2001 Mokelumne Settlement Agreement, in addition to the license terms for Project 137, compel PG&E to maintain a variety of recreational opportunities to balance project impacts on the public resource. If P-14796 truly intends not to impact P-137, then impacts to those compulsory recreation opportunities must be avoided or mitigated.

We request RA-1 include a traffic study to capture the amount of vehicle traffic traveling over Lower Bear Reservoir Dam on Bear River Road. Access across the dam is essential for: Camp Winton BSA, Pardoes Point Campground, South Shore Campground, Bear River Group Camp, Cole Creek Campground, Mokelumne Wilderness access via Tanglefoot Canyon trailhead, the tract of 45 cabins, and opportunities for hunting, wildlife viewing and dispersed camping.

RA-1 should consult with CDFW to generate numbers for hunting tags issued for that zone, and for any angler survey stations that may exist in the project area.

RA-1 should consult with Bear River Resort to obtain figures for the quantity of boat rentals, campground occupancies, and other recreational opportunities quantified by the resort.

RA-1 should consult with the USFS and/or PG&E to determine campground occupancies, wilderness permits issued for trailheads accessed via the project area, and any other quantifiable recreational activities.

E. RA-2 Aesthetics and Visual Resources Study

RA-2 should consider the viewshed at the Peddler Hill vista point, which provides sweeping views of Lower Bear River Reservoir and the granitic Bear River canyon. RA-2 should also consider the impacts of the proposed infrastructure above Salt Springs Reservoir which, due to the open granite nature of the canyon, will have far-reaching visual effects. Line of sight in the Mokelumne River Canyon upstream of Salt Springs Reservoir extends quite far, and the proposed infrastructure would likely have visual impacts from many places within the Wilderness.

F. SO-1 Socioeconomic Study

We are glad to see that there is a socioeconomic study proposed, considering that the PAD asserted that there would be no socioeconomic impacts from the project. SO-1 should be sure to examine socioeconomic effects of project construction as well as operation. Evaluation of impacts to the broader community should also include a focused look at the socioeconomic impacts to the immediate Bear River area.

G. SO-2 Traffic Impacts Analysis

SO-2 should consider the impacts to the alternative routes that would be used by some of the public when construction blocks traditional access.

H. SO-3 Environmental Justice Study

SO-3 should evaluate impacts to low-income individuals who rely on the area for subsistence hunting and fishing, and for affordable recreation opportunities. The accessibility of the area with a 2WD passenger car and the availability of no to low-cost recreational opportunities, including dispersed camping, swimming, and fishing, makes it important to low-income communities. The proximity of these resources to towns such as Jackson and Ione also make it an important area for low-income individuals.