

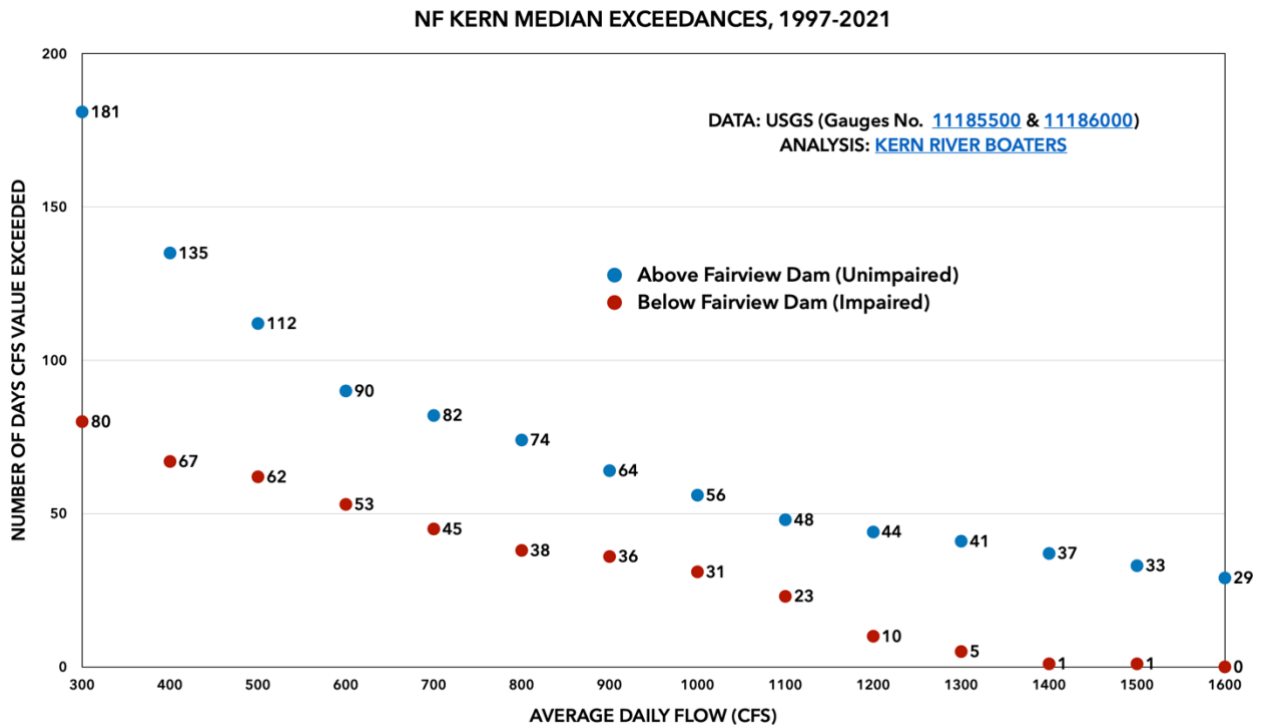
UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

IN RE

SOUTHERN CALIFORNIA EDISON  
KERN RIVER NO. 3 HYDROPROJECT

DOCKET NO. P-2290-122

KERN RIVER BOATERS' COMMENTS, STUDY  
REQUESTS, AND INFORMATION REQUESTS IN  
RESPONSE TO THE APPLICANT'S REVISED  
STUDY PLAN



This Chart Depicts How Many Days In A Median Year Given Flow Levels Were Exceeded on the North Fork Kern, 1997-2021

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## CITATIONS KEY

**KRB SD1** = *Kern River Boaters' Comments, Study Requests, And Information Requests In Response To Preliminary Application Document And Scoping Document One*, FERC eLibrary No. 20220120-5139, available:

[https://www.kernriverboaters.com/s/KRB\\_PAD\\_COMMENTS\\_FINAL.pdf](https://www.kernriverboaters.com/s/KRB_PAD_COMMENTS_FINAL.pdf)

**KRB SD2** = *Kern River Boaters' Comments, Study Requests, And Information Requests In Response To Proposed Study Plan And Scoping Document Two*, FERC eLibrary No. 20220603-5148, available: [https://www.kernriverboaters.com/s/KRB\\_SD2\\_PSP\\_COMMENTS.pdf](https://www.kernriverboaters.com/s/KRB_SD2_PSP_COMMENTS.pdf)

**1996 License Order** = 77 FERC § 61,313, available:

[https://drive.google.com/file/d/1zC\\_ooP1pb0VXp3bwgtrTecyyDIIPMKD2/view?usp=sharing](https://drive.google.com/file/d/1zC_ooP1pb0VXp3bwgtrTecyyDIIPMKD2/view?usp=sharing)

**1994 USFS N&SFKR W&SR ROD&CMP** = available:

<https://drive.google.com/file/d/1n0D8equMZaOkwLNDGenEkV54n1WACWkp>

**1995 USFS NPS CDFW UKBFMP** = available:

<https://drive.google.com/file/d/1HmiEvpKfsOghZdIQYOcaQ5Z-9uq1RKiF/view?usp=sharing>

**1996 EA** = FERC eLibrary No. 19960409-0312, available:

<https://drive.google.com/file/d/1srG-9gMmwSQM5-EbbRa8GlKBvErbGnG7/view?usp=sharing>

**1998 USFS NOD FONSI** = available: <https://www.kernriverboaters.com/s/USFS-NOD-FONSI-1998.PDF>

**1994 Whitewater Study** = FERC eLibrary No. 19940802-0010, available:

<https://www.kernriverboaters.com/s/1994WhitewaterBoatingStudy.PDF>

**1991 SCE FLA** (Final License Application) = available:

<https://drive.google.com/file/d/1sgDpcKkMy0fWmSkR8tSZIoFMNhbtYoRz/view?usp=sharing>

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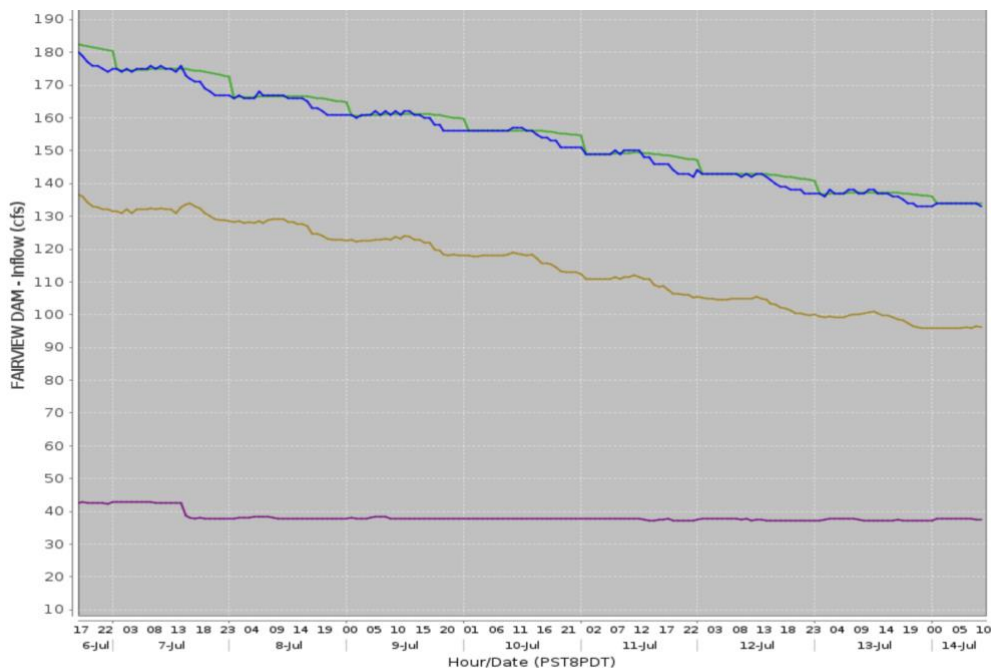
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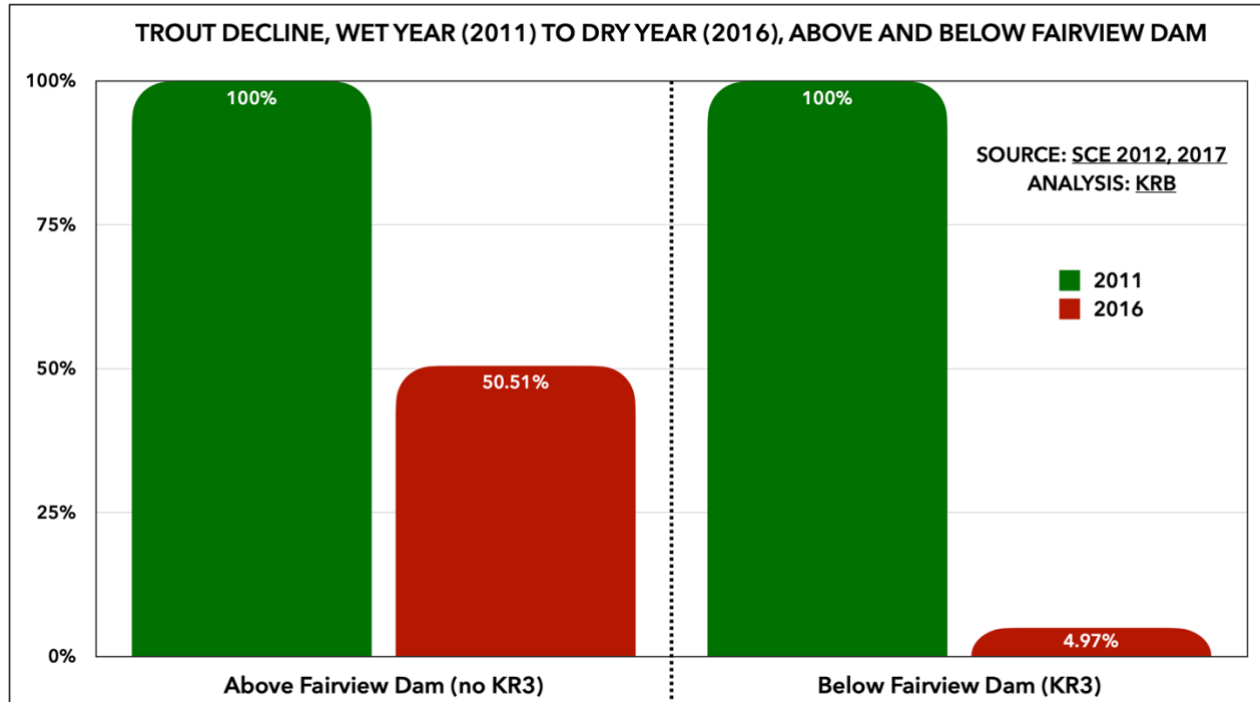
**I • UPDATE: EDISON IS VIOLATING THE MIF RIGHT NOW**

Condition 4 of the current license to operate KR3 calls for an MIF of 130 cfs or inflows at Fairview Dam, whichever is less, during the hot months of July and August. Edison has been in violation of this provision since July 07, 2022 — 13 days [and counting](#).<sup>1</sup> This is likely devastating the fishery below the dam. As the 1996 EA concluded, “The 130-cfs minimum flow during July and August would maintain temperatures at less than 20°C



1

for a distance of 6 km downstream from the dam under all but the most adverse conditions of low runoff and unusually hot weather. Thus, a minimum flow of 130 cfs in the bypassed reach would improve compliance with the Section 401 WQC's recommended temperature of 20°C for "cold" streams.”<sup>2</sup> When the fishery doesn't get the MIF in summer, we all should know by now what happens: all the trout die.<sup>3</sup>



The Drought Killed about Half the Fish; Fairview Dam Killed (Almost) All the Rest

It is true that the 35 cfs “hatchery flow” has precedence over the MIF in this environmentally insensitive license.<sup>4</sup> However, on January 07, 2022<sup>5</sup> CDFW explicitly terminated the hatchery flow, as is its sole right under Condition 4: “If operations at the planting base hatchery change, then CDF[W] may specify that the 35 cfs not be diverted at Fairview Dam.”

It should not fall upon private citizens as represented by Kern River Boaters and Kern River Fly Fishers’ Council to enforce the current license. The agencies — including FERC — must be proactive and secure the public interest against Edison’s lawless and

<sup>2</sup> 1996 EA at 24

<sup>3</sup> PAD at 5-63

<sup>4</sup> Even FERC had to admit that “typically” — *i.e.*, in every other hydro license — the MIF takes precedence over all other uses of inflows. 1996 EA at 34

<sup>5</sup> FERC eLibrary No. 20220110-5025. On January 11, 2022, we verified with CDFW FERC coordinator Abi Leon that it was CDFW’s intent to terminate this diversion with that letter.

cynical<sup>6</sup> appropriation of this water at the expense of the MIF. We ask that the agencies reading this take note and act; Edison would not have taken this action if it didn't think the agencies would ultimately let it get away with it. And we hope the agencies have long memories.

## II • WHY KERN RIVER BOATERS' STUDY REQUESTS SHOULD BE APPROVED

### **KRB SR-1: Aesthetic Flows**

**EDISON:** *SCE has . . . amended REC-2 Recreation Facilities Use Assessment to collect information regarding the public's perception and satisfaction about the aesthetic while recreating in the Fairview Dam Bypass Reach as part of the visitor survey. Additionally, if scenic/ wildlife viewing or photography was selected as an activity participated in, follow up questions will be asked regarding their opinion about the scenic characteristics of the area. . . . With SCE's expansion of the visitor survey questions, SCE will obtain information from a broad and diverse group of visitors to the area regarding their perception of the scenic quality in the Project Area. (RSP at 36.)*

**KRB SR-1 R1:** Conducting a survey of self-selected visitors in the dewatered reach does not come close to offering the quality of data inherent in our study request. Edison is proposing to internally analyze a survey of self-selected visitors to the dewatered reach. Surely Edison realizes that persons dissatisfied with the aesthetic will be less likely to be captured by intercepts or spot counts than persons satisfied: the latter are inherently less likely to be present — some may choose to recreate above Fairview Dam, where river aesthetics remain unaltered by the project, instead, and some may forgo the region altogether; neither group will be captured in the intercepts as written in REC-2. That is not “broad and diverse” enough.

In our experience, negative project effects are repeatedly demonstrated during “offseason” weekends, October through April. These months are outside the long summer camping season due to weather conditions. However, there remains a great deal of day use recreation above Fairview Dam. On these weekends, if one drives up canyon from Kernville to Johnsondale Bridge, one cannot help but notice the lack of parked cars or active people in the dewatered reach. However, once one passes Fairview Dam and continues north, active people and parked cars appear at a rate an order-of-magnitude greater than below the dam. For the next two miles of road, until the road leaves the riverside at Johnsondale

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<sup>6</sup> Edison is hoping to spin the clock on this issue with the agencies until the MIF goes down so that it doesn't have to turn off its powerplant, which is generating at a rate of only 2MW and which was recently offline for 16 straight months with no local disruption of service -- that should tell you all you need to know about what Edison thinks about the environment below Fairview Dam and the agencies it purports to collaborate with: not very much.

Bridge, NFKR day use recreators — boaters, angler, hikers, sightseers — are all bunched into this two-mile section in stark opposition to the empty conditions in the 16 miles below the dam. We posit that one looking down from above would see the project’s effect most vividly: many dots of cars and people enjoying the river above the dam, very few below. There are two obvious downsides to this effect: parking along the reach above the dam can be difficult to find with all the recreators squeezed in there due to poor hydrological conditions below the dam. This is particularly true at Johnsondale Bridge or Willow Point. None of this, moreover, captures the persons who are avoiding the region entirely — the dewatered reach because of impaired conditions, and the two-mile reach above the dam due to crowding. If conditions were improved below the dam, river enjoyment of all types — hiking, sightseeing, boating, and angling — would be more equitably spread above and below the dam, decreasing the resource pressure above the dam, and more visitors would attend the region overall.<sup>7</sup>

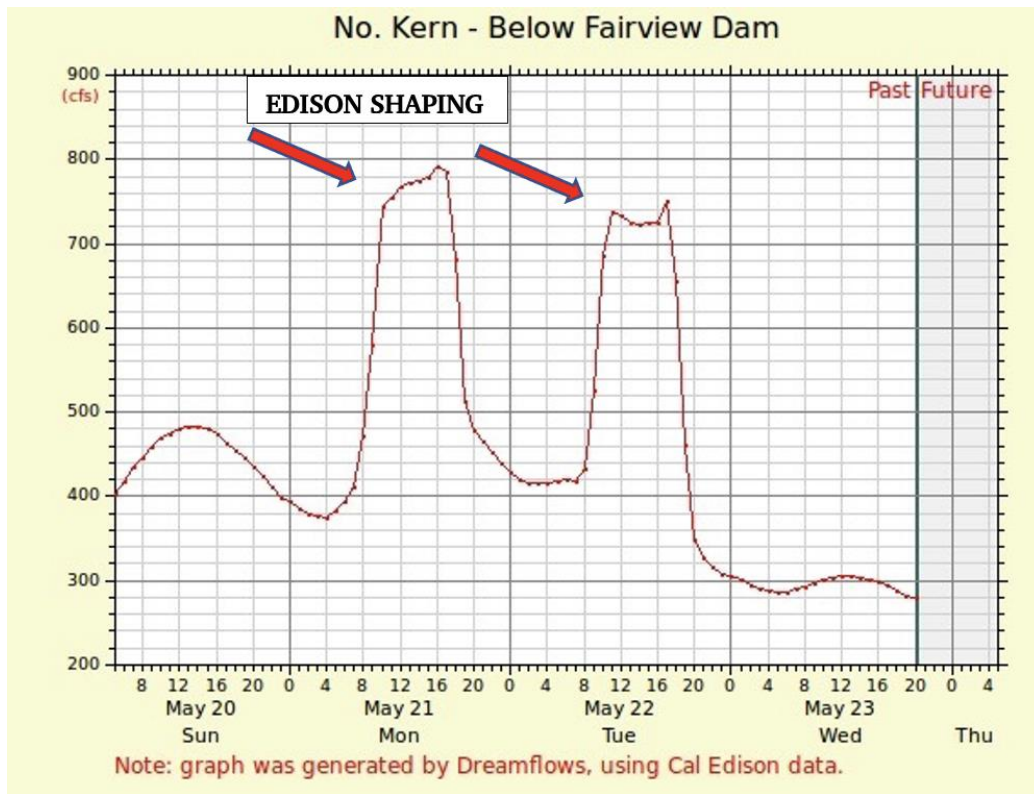
**EDISON:** *Additionally, for the same reasons as stated in the REC-1 PSP, a controlled flow study, as proposed, is not feasible at KR3 due to the lack of storage upstream of Fairview Dam coupled with the uncertainty of the snowmelt hydrograph of the NFKR. These limitations preclude the ability to plan a controlled flow conditions assessment study in advance on the NFKR. Advance planning is necessary for logistics, safety, and data collection as well as broad participation in the study. (RSP at 37.)*

**KRB SR-1 R2:** Edison refuses to engage KRB’s contentions. We have stated, and it is obvious, that Edison retains a significant ability to shape flows in the dewatered reach, given its physical ability to take or decline to take up to the first 600 cfs incoming at Fairview Dam:

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<sup>7</sup> For these reasons, if the Commission rejects KRB’s scientific study requests on Aesthetics, Water Quality, Angler Enjoyment and the like in favor of Edison’s plan, we ask that the Commission expand the REC-2 Intercept Survey and Spot Count routes (REC-2, §§ 6.1.1 & 6.2) to (1) span an entire river year, (2) include the two miles between Fairview Dam and Johnsondale Bridge, and (3) include in all questionnaires a query along the following lines: “Do you ever visit/recreate above Fairview Dam or choose not to recreate on the NFKR at all due to impaired flow conditions below the dam, and if so, how frequently?”

**Figure 1: Edison's significant ability to shape flows: Here it is increasing flows by about 300 cfs and holding it there for seven hours.**



The result is there remains a vast inventory of days suitable every year for our proposed study at targeted flow levels. KRB took the daily average flow data from the last 25 years<sup>8</sup> and found the following average numbers of days upon which different flow levels could be tested annually:

MEAN DAYS PER YEAR FLOWS ARE SUITABLE FOR TESTING WITHIN GIVEN RANGES (NFKR WY 1997-2021)			
RANGE (CFS) LOW	HIGH	TOTAL DAYS	DAYS PER YEAR
100	124	6529	261
125	149	6311	252
150	174	5659	226
175	199	4987	199
200	224	4634	185
225	249	4247	170

<sup>8</sup> USGS gauges:  
[https://waterdata.usgs.gov/nwis/dv?referred\\_module=sw&site\\_no=11185500](https://waterdata.usgs.gov/nwis/dv?referred_module=sw&site_no=11185500) &  
[https://waterdata.usgs.gov/nwis/dv?referred\\_module=sw&site\\_no=11186000](https://waterdata.usgs.gov/nwis/dv?referred_module=sw&site_no=11186000)



250	274	3878	155
275	299	3489	140
300	324	3140	126
325	349	2853	114

There are plenty of available and eligible study days for these target flows.

Edison conflates the size required for survey groups, which need be large, with that required for focus groups, which can be smaller and representative.<sup>9</sup> Moreover, as indicated in our revised request, desktop and recon should focus the targeted flow levels down to about four, and we suspect at least two of them will be at already-extant fish flow (MIF) levels that are more abundant for testing under routine project operations.<sup>10</sup> The only thing stopping the best available science being used to evaluate minimally acceptable aesthetics on this outstanding and regionally dominant river is Edison’s lack of willingness to do so. We ask that this issue finally, after 100+ years, be scientifically studied.

**EDISON:** *The remaining study objectives as noted above are not necessary as existing information is sufficient to address many of the study goals to analyze environmental effects of SCE’s relicensing proposal and reasonable alternatives, pursuant to FERC’s obligations under NEPA and the FPA. FERC stated in SD2 that, “the environmental baseline considered in relicensing proceedings is the environment as it exists at the time of relicensing, not conditions that pre-date the project before it was built.” . . . Other study objectives included in the Stakeholder study request include an evaluation of effects from altering flows. It is premature at this stage of relicensing to speculate on what new license measures may be appropriate, if any. . . . There are no proposed changes to existing facilities and no new facilities are proposed for the Project. Therefore, the existing information can be used to describe the Project in context with the overall scenic landscape. (RSP at 37.)*

**KRB SR-1 R3:** Edison’s RSP repeatedly asserts here and elsewhere that suggested studies of large data gaps regarding project effects — on aesthetics, on the environment, on recreation, etc. — are inappropriate because they go beyond the study of “baseline” conditions and/or are required for the development of PME’s. We urge the Commission to

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<sup>9</sup> Whittaker, “Flows and Aesthetics” (2017) at 28-29

<sup>10</sup> We have revised our study request to clarify that we seek solely to determine a minimally pleasing aesthetic flow, which can be informed with three of four flow levels. Edison routinely lowers flows in the dewatered reach below the lowest natural flow levels. People who live here, visit here, drive here, hike here, recreate here, and the like should never have to see this river at levels that are so plainly artificially lowered they cause a dissonant aesthetic response. See generally, “Aesthetics of the Everyday,” Stanford Encyclopedia of Philosophy at § 4 (“Negative Aesthetics”), available at:

<https://ramsey.stanford.edu/entries/aesthetics-of-everyday/>

fulfill its duty and look beyond the unfounded assertions of a company plainly uninterested in filling these data gaps and instead secure the public interest.

Contrary to Edison's attempt to keep this proceeding as close as possible to a referendum on the *status quo*, the Commission is obligated to go deeper and discover the best use of our common resource, the 16-mile encumbered reach of the Wild and Scenic North Fork Kern River — inarguably Southern California's most important river. In discovering the best use, the Commission is obligated to look **beyond** the *status quo*:

*[T]he Federal Power Act contemplates much more than a mere continuation of the status quo when the decision is made to relicense. Relicensing is substantially equivalent to issuing an original license . . . [and is] more akin to an irreversible and irretrievable commitment of a public resource than a mere continuation of the status quo. Simply because the same resource has been committed in the past does not make relicensing a phase in a continuous activity. Relicensing involves a new commitment of the resource, which in this case lasts for forty years.*<sup>11</sup>

To that end, the FPA directs this agency to “consider *all* beneficial public uses when it grants a license.”<sup>12</sup> That is because, in the end, “[t]he test is whether the project will be in *the public interest*. And that determination can be made only after an exploration of *all issues relevant to the ‘public interest’ . . .*”<sup>13</sup>

The Commission has KRB and the rest of the stakeholders it would go beyond the *status quo*: “Before the Commission can make an informed decision on a license application, it must *obtain adequate information* on the resources the project effects, such as soils, water quality, fish and wildlife, cultural, recreation, aesthetics, land use, and tribal resources. To obtain this information, it may be necessary for the applicant to conduct studies to assess these effects *so a range of potential protection, mitigation, and enhancement measures can be explored.*”<sup>14</sup> So Edison is flat wrong that studies of real data gaps in project effects *at the baseline* cannot be conducted or cannot be aimed at developing new mitigation conditions. The purpose of a study plan is to provide a sound evidentiary basis for recommended terms and conditions and inform judgements about which NEPA alternatives are reasonable to consider.<sup>15</sup> ***Indeed, in this proceeding, the “proposed action” and “no-action” alternatives are identical.*** But the Commission is obligated to evaluate a range of additional operational modifications to fulfill its NEPA obligations. Edison's line that “no

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<sup>11</sup> *Yakima v. FERC*, 746 F.2d 466, 476-477 (9th Cir. 1984) (italics added)

<sup>12</sup> *Id.*, at p. 471 (italics added)

<sup>13</sup> *Udall v. FPC*, 387 U.S. 428, 450 (1967) (italics added)

<sup>14</sup> FERC, “A Guide To Understanding And Applying The Integrated Licensing Process Study Criteria” (2012) at 1 (italics added)

<sup>15</sup> 68 Fed. Reg. at 51,078

effect at the baseline is a project effect” runs counter to everything above, and we ask that you reject it. We should all be here for the purpose of identifying project *all* project effects on this common resource, finding where data gaps are about those effects, and extending the ability of studies of those effects to inform plausible PMEs. Our requested studies here and elsewhere will provide the information necessary for the Commission to understand existing effects and evaluate reasonable alternatives.

Both here and elsewhere, Edison posits and argues against a straw man — namely, that we are attempting to recreate conditions of a bygone day. Look at this study request: it has never sought to re-enshrine unending natural flows; rather, it seeks to establish minimally enjoyable aesthetic flow levels, and it uses a quantitative scientific basis for doing so. At no point does it seek removal of project features or the end of project operations. This request is not focused on recreating historical conditions or assessing original project effects, but rather developing an instream flow program that mitigates project impacts while addressing beneficial uses of the waterway — *i.e.*, we seek to find where things can be improved in the broad public interest. Given this project’s shaky financial footing, it is no surprise that Edison objects to it.

**EDISON:** *Section 5.9 of the PAD (SCE, 2021) describes the visual character of the Project which was evaluated during the previous relicensing effort. The area surrounding the Project is designated by the USFS with a scenic integrity objective of “High” (Visual Quality Objective of “Retention”) and “Moderate/Medium” (Visual Quality Objective of “Partial Retention”) as illustrated in the scenic integrity map in the Sequoia National Forest Land and Resource Management Plan (USFS, 1988, 2019). The Project components have been part of the visual character of the area and have not significantly changed since construction completed in 1921, including when the Project was designated a Wild and Scenic River in 1988. (RSP at 37.)*

**KRB SR-1 R4:** Edison fails to confront KRB’s point that notwithstanding these designations, the 1994 USFS W&SR CMP directs USFS to “Strive for higher visual quality whenever practical.”<sup>16</sup> We agree with USFS: there is obviously room for improvement in river aesthetics here, as shown in the photographs accompanying our updated proposal, and as shown by the hydrology of project operations. Over the existing POR (WY 1997-2021), the daily average flow above Fairview Dam fell below 125 cfs just 5% of the time. Flows that low are objectively rare for this river corridor. By contrast, flows in the dewatered reach below Fairview Dam fell below 125 cfs 44% of the time due to project operations. That number would have been even higher had the project not been offline for repairs so often (completely offline for 1,506 of the 9,131 days in the POR, and partially offline for at least hundreds more). Project operations turn what are rare low flow conditions on the NFKR into a routine, near-majority of days occurrence. It is reasonable to expect such dewatering

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<sup>16</sup> 1994 USFS N&SFKR W&SR ROD&CMP at 45

to have a negative effect on the river as experienced by the humans who live in or visit that environment. The river was formed under a natural hydrograph; an unnaturally impaired hydrograph can render that formation aesthetically displeasing. Dewatering the river at Fairview Dam narrows the waters below, dries the riverbanks, exposes rocks in the riverbed that would otherwise be covered, reduces water speeds, lowers pool heights, eliminates many riffle sections, and increases areas covered with algae and other pond scum. The judgments cited by Edison, moreover, constitute *professional* aesthetic judgment, and such is not determinative here. Research cautions us that the aesthetic judgments of river professionals do not line up with the judgments of the public at-large.<sup>17</sup> As current Edison consultant John Gangemi has argued before the Commission, “Professional judgements often rely more heavily on personal values and bias rather than objective assessment of ecological processes. ***Professional judgement is not a surrogate for proper scientific study.***”<sup>18</sup> Indeed, in the last proceeding, USFS noted that some commenters requested increased minimum flows for “visual quality.” USFS did *not* state there was “no evidence of a problem.” Rather, it averred, “This topic was brought out when the licensing process was nearing completion and too late to address this licensing.”<sup>19</sup> KRB has tried to raise this issue from the earliest possible moments of this proceeding. The issue of the project’s impact on aesthetics in the dewatered reach has never been scientifically studied during the project’s 101-year-long encumbrance of this outstanding river. Edison has chosen not to engage with any of these facts in an effort to shove its unfounded viewpoint through this process. We expect the Commission to engage with and account for our arguments; if it did, we are confident it would approve our study request. For these reasons, we ask that the Commission direct Edison to implement our revised aesthetic flows study request, attached at the end of this document.

### **KRB SR-2 Water Quality Flows**

**EDISON:** *[A]rsenic levels were previously measured in bypass reaches and found to reflect local watershed conditions, as the Project does not contribute arsenic to the watershed. Therefore, there is no Project nexus to include arsenic sampling as part of this relicensing. (RSP at 37-38.) Although arsenic is present in the watershed, concentrations reflect local watershed conditions, and the Project does not contribute to or alter levels of arsenic. Data from the NFKR at Kernville (see PAD Section 5.2.4.4, Table 5.2-6) indicate that arsenic concentrations remain variable and occasionally elevated, including at full flow. (Attachment 3 at WR-3.)*

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<sup>17</sup> Shelby, B., Brown, T.C. and Taylor, J.G., “Streamflow and recreation,” US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station (1992)

<sup>18</sup> FERC eLibrary No. 19981204-0313

<sup>19</sup> 1998 USFS NOD FONSI at Appendix E, 8

**KRB SR-2 R1:** These statements are misleading and illogical. The PAD states that arsenic has not been detected upstream of Fairview Dam.<sup>20</sup> By contrast, arsenic has been detected at elevated levels in the dewatered reach and “at Kernville, approximately 2 miles downstream of the KR3 Powerhouse.”<sup>21</sup> The most reasonable inference is that the major source of arsenic is within the dewatered reach. Moreover, Edison fails to note evidence that concentrations were lower both upstream<sup>22</sup> and downstream<sup>23</sup> of the dewatered reach. According to that Application, “The EPA human health criteria for ingestion of fish and water for **carcinogens** was exceeded in all samples with detectable quantities of total arsenic” *by a factor of about 4,000.*<sup>24</sup> Although the project is not a source of arsenic, its operations reduce quantities of water that might otherwise reduce those threatening concentrations through dilution — no study has ever been conducted to answer that question. We have proposed such a study now: our request includes testing for coliform and arsenic concentrations at various enhanced flow levels in order to establish the reasonably contemporaneous effects of dilution, which is the flipside of the project’s operational effect of concentration within the dewatered reach.<sup>25</sup> Edison’s opposition to enhancing flows in furtherance of this evaluation can reasonably be interpreted as an admission that dilution *would* be effective in lowering those concentrations. Nevertheless, since the effectiveness of dilution of these substances has never been tested in the dewatered reach, we believe it is appropriate now. Finally, we noted in our SD2 document<sup>26</sup> that Edison has not offered a principled reason for testing bacteria but not arsenic, a carcinogen; neither are contributed by project operations. Edison has still not provided such a reason for testing one but not the other. Since Edison has not provide a reasonable explanation for not (1) testing for arsenic and (2) testing whether dilution could make the public healthier in regard to both arsenic and coliform, we ask that the Commission implement our KRB SR-2 Study Plan as it stands in our SD2 document<sup>27</sup>, whether independently or through incorporation with Edison’s RSP.

### **KRB SR-3 Enjoyable Angling Flows**

**EDISON:** *[A] controlled flow study, as proposed by the Stakeholder, is not feasible at KR3 due to the lack of storage upstream of Fairview Dam coupled with the uncertainty of the snowmelt hydrograph of the NFKR. These limitations preclude the ability to plan an on-water angling*

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<sup>20</sup> PAD at 5-48

<sup>21</sup> PAD at 5-40, 5-41, 5-45 & 5-48

<sup>22</sup> 1991 SCE FLA at E-2-32

<sup>23</sup> PAD at 5-41

<sup>24</sup> 1991 SCE FLA at E-2-32

<sup>25</sup> KRB SD2 at 67-70

<sup>26</sup> KRB SD2 at 66

<sup>27</sup> KRB SD2 66-70

*study in advance on the NFKR. Advance planning is necessary for logistics, safety, and data collection as well as broad participation in the angling study. (RSP at 38.)*

**KRB SR-3 R1:** Edison made the same reply in its PSP, and we countered with an explanation of the significant ability of Edison to influence flows in the dewatered reach and the identification of a vast inventory of potential days upon which to conduct our study.<sup>28</sup> The size of that inventory is such that logistics, safety, and data collection are not reasonable reasons to object. For instance, if you need more than 261 days to conduct a targeted flow study at 100-124 cfs, you are not seriously trying to conduct the study. Indeed, Whittaker says such studies can take advantage of the natural hydrograph and be composed of a smaller representative group.<sup>29</sup> Edison's objections do not withstand even moderate scrutiny.

**EDISON:** *In lieu of a controlled flow study, SCE has incorporated focused questions for anglers to respond to as part of the REC-2 Recreation Facilities Use Assessment Visitor Survey. The questionnaire asks participants to rate their fishing experience at the time of the survey in addition to other questions about their angling visit. (RSP at 38.)*

**KRB SR-3 R2:** REC-2 is an inadequate substitute for the scientific study we have requested. Conducting a survey of self-selected anglers in the dewatered reach does not come close to obtaining the quality of data about project effects that would result from our study request. Edison is proposing to internally analyze a survey of self-selected anglers in the dewatered reach. Surely Edison realizes that persons dissatisfied with angling in the dewatered reach will be far less likely to be captured by intercept or spot count survey questioning: those dissatisfied anglers are most likely to have self-selected to absent themselves from the dewatered reach altogether, and thus would have nothing to offer to the survey questions about their "angler visit." Some of the dissatisfied anglers who have not chosen to absent themselves from the roadside NFKR altogether as a result of project operations, however, are likely to be found in the two-mile roadside reach above Fairview Dam to Johnsondale Bridge.

In our experience, negative project effects on recreation are repeatedly demonstrated during "offseason" weekends, October through April. These months are outside the long summer camping season due to weather conditions. However, there remains a great deal of day use recreation *above Fairview Dam*. On these weekends, if one drives up canyon from Kernville to Johnsondale Bridge, one cannot help but notice the lack of parked cars or active people in the dewatered reach. However, once one passes Fairview Dam and continues north, active people and parked cars appear at a rate an order-of-magnitude greater than below the dam. For the next two miles of road, until the road leaves the

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<sup>28</sup> KRB SD2 at 80

<sup>29</sup> Whittaker *et al.*, "Flows and Recreation" (2005) at 26 & 30

riverside at Johnsondale Bridge, NFKR day use recreators — including most anglers — are all bunched into this two-mile section in stark opposition to the relatively empty conditions in the 16 miles below the dam. We posit that one looking down from above would see the project’s effect most vividly: many dots of cars and people enjoying the river above the dam, very few below. There are two obvious downsides to this effect: parking along the reach above the dam can be difficult to find with all the recreators squeezed in there due to poor hydrological conditions below the dam. This is particularly true at Johnsondale Bridge or Willow Point. None of this, moreover, captures the persons who are avoiding the region entirely — the dewatered reach because of impaired conditions, and the two-mile reach above the dam due to crowding. If conditions were improved below the dam, river enjoyment of all types — hiking, sightseeing, boating, and angling — would be more equitably spread above and below the dam, decreasing the resource pressure above the dam, and more visitors would attend the region overall.<sup>30</sup>

REC-2 is no substitute for our bog-standard, straight out of Whittaker angling enjoyment study, found in our SD2 document.<sup>31</sup> We ask that it be included in the Commission’s study plan determination.

#### **KRB SR-4 Conveyance, Forebay, and Penstock Safety**

**EDISON:** *As stated in SCE’s PSP filing, [SCE restates its KRB SR-4 comments in that filing].* (RSP at 38-39.)

**KRB SR-4 R1:** Edison has *completely* failed to engage, and thus has failed to rebut, the salient concerns we’ve raised: (1) KR1 had a “low hazard” rating prior to the catastrophic failure that occurred in 2013. (2) Neither Edison nor the Commission foresaw that incident, which happened despite that rating, and caused a huge mudslide in two places across Highway 178, closing the route completely for 10 days. (3) Only timing and luck prevented the loss of human life. (4) The Commission swiftly raised the hazard rating of that project from low to significant. (5) KR3 shares most of the same features as KR1; there is no reason the same sequence of events could occur there. And (6) KRB has provided photographs and a video demonstrating the project’s state of disrepair.<sup>32</sup> Since Edison has chosen not to try

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<sup>30</sup> For these reasons, if the Commission rejects KRB’s scientific study requests on Aesthetics, Water Quality, Angler Enjoyment and the like in favor of Edison’s plan, we ask that the Commission expand the REC-2 Intercept Survey and Spot Count routes (REC-2, §§ 6.1.1 & 6.2) to (1) span an entire river year, (2) include the two miles between Fairview Dam and Johnsondale Bridge, and (3) include in all questionnaires a query along the following lines: “Do you ever visit/recreate above Fairview Dam or choose not to recreate on the NFKR at all due to impaired flow conditions below the dam, and if so, how frequently?”

<sup>31</sup> KRB SD2 at 71-81

<sup>32</sup> KRB SD2 at 82-90

to engage any of our analysis or allay any of our concerns, we ask that the Commission implement our study request as it exists in our SD2 document.<sup>33</sup>

### KRB SR-5 Flow Travel Times

**EDISON:** *WR-2 RSP includes a description on how flow travel times along the NFKR between Fairview Dam and Kernville will be calculated. Where existing and available flow data from both the SCE flow gage below Fairview Dam and the USACE flow gage at Kernville, data will be analyzed to detect changes in flow fluctuations. Flow travel times will be estimated (on an hourly level) as depicted from the shifts in flow recorded between the two gages. Additionally, KRB fails to describe in their proposal why the level of granularity and excessive level of effort and cost of their proposed study is needed, and why the existing WR-2 study does not meet the information needs. (RSP 39.)*

**KRB SR-5 R1:** We cited in the request the analysis of present conditions in the regional energy market we included in our SD1 document.<sup>34</sup> It shows there to be predictable times that the regional social “need for power” is low or even negative, as indicated by market pricing (low or negative) and increasing renewable curtailments to combat the threat of daytime overgeneration. We also stated in our request that since the FPA requires “mitigating the project’s effects in balance with society’s need for power, it is important to know if and when there are opportunities for the mitigation of those effects *that coincide with times society has a relatively low need for power.*”<sup>35</sup> Under the current license, project operations are curtailed on occasion for recreational mitigation between the hours of 10 a.m. and 5 p.m. Do those times line up with the social need for power, or do they partly impinge upon that need? Further, do those times provide maximal mitigation in the riverbed, or are they partly lost by being delivered too late in the day? The first question requires an inquiry into the time it takes for an increase or decrease in the diversion at Fairview to alter generation output. The second requires an inquiry into how long it takes flows “released” at Fairview Dam to reach the end of the dewatered reach *via* the riverbed. We know that flows take much less time to reach the end of the dewatered reach — or the powerhouse, which are at the same place — *via* the smoother, straighter, and shorter project conveyance than *via* the riverbed. We just don’t know with reasonable precision how much time it takes, either *via* the conveyance or the river. To accurately assess the opportunities for hydrological mitigation that line up with times of low social need for power, we need to understand both: (1) What time do we have to stop limiting project operations for recreational mitigation if we want to support the evening energy demand

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<sup>33</sup> KRB SD2 at 82-90

<sup>34</sup> KRB SD1 at 11-22

<sup>35</sup> KRB SD2 at 92



ramp — *i.e.*, to help balance out the loss of solar? (2) If we have to stop limiting operations at an hour that *seems* early compared to the current schedule — say, 11 a.m. or noon — how much past that time will those flows remain at least partly in the dewatered reach for recreational enjoyment? The only way to confidently answer these questions is to know the amount of time it takes a change in the diversion to register at the other end of the dewatered reach, both within the powerhouse and in the riverbed. Edison did not raise this objection in its PSP; it waited until its RSP to do so. We have added this rationale to our study request and are confident the Commission will see the value in the information this study plan aims to obtain.

**EDISON:** *The KRB proposal would require the establishment of multiple new flow loggers/recorders along the Fairview Dam Bypass Reach and flowline, which makes the KRB proposal significantly more expensive than their \$15,000 estimate. (RSP at 39.)*

**KRB SR-5 R2:** This is a new objection, and we agree with Edison that, as written, our study proposal does not adequately clarify the type of gauging required or identify the opportunities to keep costs down. We do so now. To determine the timing of flows in the conveyance, Edison would be required to install nothing new; rather, it would simply need to record the timing of changes in the rate of diversion at Fairview Dam, which it already does, and correlate those changes with the timing of changes in generational output recorded at the powerplant, which it already does. To determine the timing of flows in the riverbed, Edison need simply keep recording the timing of changes of flows at USGS gauge 11186000, which is just below Fairview Dam, and record the same in the riverbed near the powerhouse. ***This last item is the only new gauge we propose.*** We have clarified further that this gauge *need not be a calibrated volume gauge*, but rather can simply be a simple height gauge, so that the timing of the peak or nadir of the change in flow below Fairview Dam can be compared with the timing of the same — a peak or nadir in flow — in the river near the powerhouse. Installation and recording this single additional gauge should be workable at or near our estimated budget; additional monies would be justified by the importance of the data to be obtained. Edison has already proposed analyzing data to estimate flow times with an error bar of up to an hour at both ends. Our proposal would involve the same analysis but with data of higher quality and granularity. Our proposal also eliminates the inherent uncertainty in Edison’s proposed estimation of the travel time from the powerhouse to the gauge at Kernville, which would be required to obtain the two types of data we seek: (1) riverbed to powerhouse, and (2) conveyance to powerhouse. For these reasons, we ask that the Commission implement our revised study request, attached at the end of this document, in full and, if it doesn’t, consider implementing the portion concerned with travel times in the conveyance — that information is critical if one wants to identify opportunities to enhance recreation in the reach with low *or even positive* impacts to our regional power needs.

## KRB SR-6 Tunnel Maintenance Flows

**EDISON:** *SCE has further refined the goals of the OPS-1 Study and expanded the study to evaluate the entire water conveyance system (tunnel, flume, siphon, and penstock) under varying flow conditions that will aid in the identification of guidelines to consider when discussing water conveyance system operations. The study goals and objectives in SCE's OPS-1 RSP include:*

- *Conduct an engineering review and evaluation of current conveyance conditions (e.g., hydrostatic pressure, flow depth) under varying flow conditions.*
- *Develop guidelines for future operational conditions using current Project information and industry best practices to maintain the conveyance systems integrity.*

*Also, any additional investigation of alternative tunnel configurations or lining are outside the scope of this relicensing, as SCE is not proposing any major infrastructure modifications to the water conveyance system other than routine O&M. (RSP at 39-40.)*

**KRB SR-6 R1:** We do not agree that Edison's inclusion of "varying flow conditions" is specific enough to denote the important data to be developed by our study request. Transporting water over concrete inherently damages the concrete, as recent pictures of the project's conveyance confirm.<sup>36</sup> This inherent rate of damage occurs *even if there is no cycling for mitigation*. There is thus some rate of damage to the concrete tunnel liners inherent in project operations *without any cycling for mitigation*. The relevant question for this study to answer, then, should be: What *additional* damage attends mitigation cycling? The study should accordingly report on the rates of *additional* damage under various feasible mitigation schemes, including one that provides for full natural flows (*i.e.*, a complete cycling that empties the conveyance), one that reflects the current 300 cfs cap (*i.e.*, cycling of all but 300 cfs from the tunnels), and other maintenance flow levels in between (*e.g.*, the cycling of all but 50, 100, 150, 200 & 250 cfs from the tunnels).

As for the liner's composition, Edison's position is that it must always keep 300 cfs in the tunnels, and thus can never provide more mitigation than the inflow at Fairview minus 300 cfs. The study should investigate whether there are alternate tunnel compositions (*e.g.*, different sealants, concrete formulations, or types of liner material) that would reduce or eliminate damage from mitigation cycling and what the costs of those materials would be — or would have been. Edison shut the project down for 16 months in 2013-2014 to complete, among other things, a "Tunnel Rehabilitation Project."<sup>37</sup> One aspect of the tunnel

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<sup>36</sup> See, e.g., KRB SD2 at 82-88 (pictures of the dilapidated KR3 concrete flume near the forebay under conditions circumscribed by a 300 cfs maintenance flow) & <https://vimeo.com/kernriver/siphon>

<sup>37</sup> See FERC eLibrary No. 20130620-4015. Edison improperly filed its entire application for that project as CEII because, as Edison later conceded, "only certain pages contained CEII."

project was to “improve the structural integrity” of the tunnels.<sup>38</sup> Edison does not indicate whether it chose to use superior materials for this project.<sup>39</sup> Given the congressional mandate to mitigate recreational losses from project operations that dates back to the mid-1980s, the study should inquire into what steps Edison took during its tunnel rehabilitation project to improve the structural integrity of the tunnels so that greater recreational flows could be afforded the public as mitigation for project operations or, if it did not take any such steps, why not. Edison should not be allowed to avoid adequate statutory mitigation consistent with contemporary values simply because it has chosen to construct and rehabilitate its project in a manner that breaks if such mitigation is provided. According to the Commission itself, “*most modern water conveyance structures (i.e., penstocks and water tunnels) include protective linings to prevent corrosion and to ensure a watertight seal* (MESA, 2011).”<sup>40</sup> “Watertight” does not sound like it (or the tunnel it was protecting) would be subject to damage from cycling. Since OPS-1 does not answer these questions, we ask that the Commission implement our proposed study as written in our SD2 document or implement its features in OPS-1.<sup>41</sup>

#### **KRB SR-8: Whitewater Flows**

**EDISON:** *No changes to the REC-1 RSP were made as the current study goal satisfies the commenters study plan intent. Additionally, the made statement above that, “..whitewater recreation is lost to project operations” is not factual, as the current Project flow regime represents the baseline condition considered for analysis in this relicensing not conditions that pre-date the Project before it was built.* (RSP at 40.)

**KRB SR-8 R1:** The most obvious project effect to an unbiased observer is that the project renders the NFKR hydrograph a shadow of what nature intended, removing a vast inventory of recreational opportunities in the dewatered reach.<sup>42</sup> The local Chamber of Commerce has requested relief from this project effect: It seeks “a sensible plan to release water from the Fairview Dam so people that visit our town and patronize our businesses

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(FERC eLibrary No. 20130806-5052 at 3.) Edison informed FERC it would “appropriately segregate the public and CEII” portions and “resubmit the Applications” for public inspection. (*Id.*, at fn. 6.) KRB does not see any such resubmission in the FERC eLibrary.

<sup>38</sup> FERC eLibrary No. 20130620-4015 at 3

<sup>39</sup> See, e.g., [https://www.bestmaterials.com/PDF\\_Files/concrete-repair-guide-usbr.pdf](https://www.bestmaterials.com/PDF_Files/concrete-repair-guide-usbr.pdf) ; <https://nebula.wsimg.com/6d22154a2504a248dbd4457c6e6e20f9?AccessKeyId=8174FC0049DDC86865D&disposition=0&alloworigin=1>

<sup>40</sup> FERC eLibrary at 20130206-3031 at B-9, citing MESA Associates and Oak Ridge National Lab. 2011. “Hydropower Advancement Project – Best Practice Catalog: Penstocks and Tunnels.” Revised December 6, 2011.

<sup>41</sup> KRB SD2 at 91-95

<sup>42</sup> See KRB SD1 at Cover & 27-30

can count on higher flows at the most desirable sections of whitewater. We are in favor of having as much water flow as possible downstream of the Fairview Dam as possible at any given time.”<sup>43</sup> Trout Unlimited and the Kern River Conservancy have stated: “we can no longer tolerate the diversion of river flows which are critical for . . . whitewater tourism.”<sup>44</sup> Local outfitter Kern River Outfitters concurs: “As a whitewater rafting company, the de-watered section of the Kern means we are unable to operate in the de-watered section as the water is too low. . . . By allowing the water to flow through the entirety of the Upper Kern our community will prosper.”<sup>45</sup> If this is not enough evidence that project operations remove recreational opportunities, Edison should re-read the comments from this proceeding, the overwhelming majority of which talk about the project’s negative effects on recreational opportunities, and the overwhelming majority of which specifically support the comments offered by Kern River Boaters and this study request.<sup>46</sup> This information, which Edison has chosen to ignore, should not be new to Edison. According to the 1996 EA, “Whitewater boating is locally important as it benefits the local economy and provides recreational opportunities and benefits.”<sup>47</sup> The 1996 License Order speaks even more strongly: “The North Fork Kern River is the second most used river for whitewater recreation in California. In addition, whitewater boating is important to the local economy because of the tourist spending and jobs associated with boating opportunities.”<sup>48</sup> The project unquestionably removes a vast inventory of boating opportunities, both commercial and noncommercial and across the spectrum of craft. As FERC and USFS recognized, “increased availability of whitewater recreation opportunities would likely benefit the local

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<sup>43</sup> FERC eLibrary No. 20220121-5005

<sup>44</sup> FERC eLibrary Nos. 20220606-5243 & 20220603-5004

<sup>45</sup> FERC eLibrary No. 20220120-5030

<sup>46</sup> See FERC eLibrary Nos. 20220606-5051, 20220601-5318, 20220607-5064, 20220307-5033, 20220606-5243, 20220606-5144, 20220607-5008, 20220607-5007, 20220607-5006, 20220607-5001, 20220607-5000, 20220606-5189, 20220606-5159, 20220606-5145, 20220606-5009, 20220606-5008, 20220606-5007, 20220606-5002, 20220606-5001, 20220603-5006, 20220603-5003, 20220531-5004, 20220526-5001, 20220517-5007, 20220118-5095, 20220118-5126, 20220119-5000, 20220119-5041, 20220119-5101, 20220119-5180, 20220120-5030, 20220120-5035, 20220120-5087, 20220120-5089, 20220120-5104, 20220120-5130, 20220120-5131, 20220120-5141, 20220121-5004, 20220121-5006, 20220121-5024, 20211221-5001, 20220120-5002, 20220119-5001, 20220119-5018, 20220120-5004, 20220120-5010, 20220120-5011, 20220120-5020, 20220120-5036, 20220120-5070, 20220120-5079, 20220120-5099, 20220120-5138, 20220120-5168, 20220121-5000, 20220121-5001, 20220121-5003, 20220120-5005, 20220120-5119 at pp. 3-4 & 2022013-4000 at pp. 14, 17, 19, 26

<sup>47</sup> 1996 EA at 50

<sup>48</sup> 1996 License Order at 22

economy.”<sup>49</sup> The agencies announced they are “aware of the importance of river recreation opportunities in Southern California and have taken into account the potential public benefits of increased whitewater boating flows . . . .”<sup>50</sup> The agencies agreed that placing “restrictions on diversions for power” would “see the quality of the boating experience improve” and “open up more of the bypassed reach to boating opportunities.”<sup>51</sup> We appreciate that the baseline for the NEPA document is the current state of affairs. That does not change the fact that the central project operation — removing water from this river — also removes a large inventory of recreational opportunities.

**EDISON:** *[T]here has been substantial improvement in whitewater study design and planning as evidenced in the Whittaker et al. (2005) publication that the 1994 study does not incorporate.* (RSP at 40.)

**KRB SR-8 R2:** In fact, Whittaker is the basis of our study request, and we have repeatedly invoked his and others’ work in support of our request. Edison has chosen to ignore each of them in its RSP.<sup>52</sup> Given that none of Edison’s remaining comments about KRB SR-8 are significant — and the fact that Edison has refused to even engage let alone rebut the contentions we made in our SD2 document — we ask the Commission to implement our study request as written in SD2.<sup>53</sup>

### **KRB SR-9: Comparative Whitewater Opportunities**

**EDISON:** *The request to study other recreational opportunities outside of the Project Area/region will not help inform the development of a license condition. Conducting research about whitewater opportunities outside of the Kern River will not add to the understanding of potential effects from Project operations on the NFKR.* (RSP at 40-41.)

**KRB:** Edison said this before (PSP at 30), and we responded as follows:

Edison proposes to “contextualize” the economic contribution of recreation in the dewatered reach by comparing it with the overall contribution of recreation from the Kern River Valley down to Bakersfield some 40 miles away. (PSP SOCIO-1 at 1 [study area includes “the main stem of the Kern River”].) Such contextualization is improper because it is not measuring project effects. We seek to properly contextualize the project’s effect on whitewater recreation — i.e., to fully capture that impact — through a

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<sup>49</sup> 1996 EA at D-8 (quoted in 1996 License order at 23, fn. 57)

<sup>50</sup> 1996 EA at 15

<sup>51</sup> 1996 EA at 57

<sup>52</sup> KRB SD2 at 115-122

<sup>53</sup> KRB SD2 at 122-129

comparison of boating opportunities available to boaters in Southern California with those available to boaters in the Bay Area, including the amount of hydro disruption accepted to obtain those opportunities. The results of this study would pinpoint exactly how important the NFKR is to the Southern California boating community and what standard contemporary social values have set for whitewater boating opportunities a half-dozen hours to the north. This contextualization will increase the likelihood that rec flow license conditions for any new license issued here strike an informed balance between developmental and non-developmental values that is appropriate — i.e., that places a contemporary valuation on each. For these reasons, we ask that the Commission direct Edison to implement our updated comparative whitewater study proposal.<sup>54</sup>

Since our response was directly on point to Edison’s comments — showing the importance of our study request to the development of a recreational flow condition with an *accurate* understanding of the project’s *full* impacts as well as the *contemporary* social values that should animate the statutory balancing process — Edison’s choice to ignore that response and repeat its old comment militates heavily in our favor. We ask that the Commission implement our study request as written in SD2 or incorporate it into Edison’s REC-1.<sup>55</sup>

### III • COMMENTS ON EDISON’S REVISED STUDY PLAN

#### WR-1

**EDISON:** *Site 4, WQ-NFKR-3.2, collects temperature and DO information at the downstream-most portion of the Fairview Dam Bypass Reach. The location of this site immediately upstream of the KR3 Powerhouse was selected to capture the downstream conditions in the bypass reach, including flows released from the KR3 Penstock spillway. (RSP A3P5, WR-16.)*

**KRB:** We ask that the Commission move this proposed site to upstream of the project’s emergency spillway. As indicated in the response, the goal of this site is to capture project effects in the lowermost portion of *the bypassed reach*. That goal would be confounded by the inclusion of cooler, cleaner water from the spillway. Indeed, if the spillway operates, the site Edison has chosen would technically be outside of the bypassed reach, as flows would have been returned to the river above it. Although spillway operations occur at times, those times are rare and are not typical of this project’s operation. Results confounded by spillway operation would not be representative of project effects and waste limited study resources. Should the Commission disagree, we ask in the alternative that it require Edison to include

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<sup>54</sup> KRB SD2 at 131

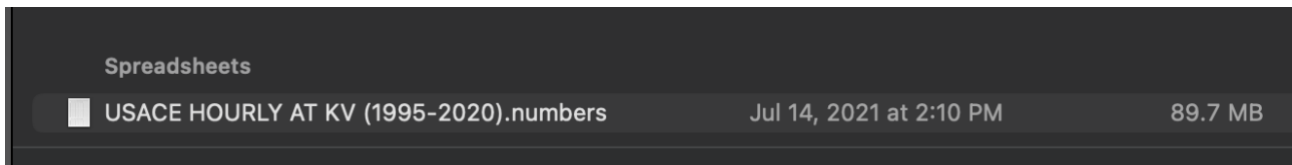
<sup>55</sup> KRB SD2 131-133

in its reports a description of the time and flow parameters for all spillway events during the conduct of this study, so as to properly contextualize the results obtained at this site.

## WR-2

**EDISON:** *Technological data storage limitations in the early portion of the current license period (water years 1996 through 2004) are not available on a finer time scale than what was already provided publicly (e.g., daily mean).* (RSP A3P6, WR-25)

**KRB:** Edison lost nine years of hourly flow data? “Storage limitations?” 26 years of hourly data from the USACE gauge in Kernville occupies less than 100 megabytes of space on our rig:



We ask that the Commission investigate into the circumstances of the loss of this important data.

We further note that Edison offers no reasons in response to our request that the raw hydrology data for the NFKR from ~~1996~~ 2005 through 2021 be provided by December 31, 2022. Edison offers no technical explanation for the difference in its position now — that data compilation (of a much lesser set, now, thanks to their loss of 9 years’ worth) and QC will take more than another year! — and its previous position that the full set of data would be provided Spring 2022, but for its pique at stakeholder involvement in the FERC docket. We think this speaks volumes about Edison’s lack of commitment to transparency and fairness in this process and ask the Commission again to direct Edison to subject this raw data to QC and provide it to stakeholders by the end of the year.

**EDISON:** *SCE did revise the Study Plan based on Stakeholder comments to include . . . calculation of natural functional flow ranges for the NFKR upstream of Fairview Diversion Dam in wet, moderate, and dry years, consistent with CEFF Section A (CEFWG, 2021; Stein et al., 2021).* (RSP at 13.)

**KRB:** KRB applauds Edison for including the California Environmental Flows Framework Section A natural functional flow metrics in its study plan. Section A is a critical lens representing the best contemporary science through which to evaluate MIF proposals for the health of this river. It will provide “natural ranges of flow metrics for each of the five functional flow components will support multiple ecosystem functions and satisfy the

habitat needs of native freshwater and riparian species.”<sup>56</sup> Further, “the outcome of Section A will be a set of ecological flow criteria derived from natural functional flow metrics that characterize the natural variability in flow that supports essential ecosystem functions.”<sup>57</sup> And finally, “unlike other environmental flow approaches that focus on single species management, a functional flows approach to freshwater ecosystem management focuses on those components of the flow regime that support key ecosystem functions (Yarnell et al. 2015; Grantham et al. 2020).”<sup>58</sup> We thank Edison for the inclusion of CEFF Section A in WR-2 and we withdraw our request for KRB SR-7.

## BIO-7

**EDISON:** *SCE is using crowdsourced information, including iNaturalist and gbif, to help determine potential population locations. However, while citizen science initiatives can be useful, it does not replace the need for highly trained biologists to conduct visual surveys. Additionally, using eDNA techniques to detect foothill yellow-legged frogs and other elusive species has proven to be highly effective, especially when populations are assumed to be low. eDNA surveys are not conducive to crowdsourcing because of the training and material required to collect un-contaminated samples. (RSP A3P12, BIO-7.)*

**KRB:** At no point did KRB even remotely suggest there to be no need for highly trained biologists in this endeavor. We have not asked to alter their role — or the role of eDNA — in the proposed study in the least. Rather, KRB pointed out the *potentially* determinative usefulness of crowdsourcing at extremely low cost that has been acknowledged by the academy and the agencies.<sup>59</sup> Not having heard any reason to eliminate crowdsourcing as a detection method in this case, we again ask the Commission to include it in the study plan: Edison’s biologists should develop a short but salient information sheet on how to identify, document, and report the species sought if come across in the project area — including direction not to disturb potential candidates — and host that sheet on a website that can be directly linked to and promulgated by managing agencies and conservation organizations.

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<sup>56</sup> CEFF Technical Report at 6

<sup>57</sup> CEFF Technical Report at 29

<sup>58</sup> CEFF Technical Report at 8; see also Duxbury E., “Environmental Flow Analysis on the NF Kern- A Case Study: 1997-2020 Data Set” (2022) Available:

[https://www.kernriverboaters.com/s/Environmental\\_Flows\\_NF\\_Kern-1997-2020.pdf](https://www.kernriverboaters.com/s/Environmental_Flows_NF_Kern-1997-2020.pdf)

<sup>59</sup> See Jennifer Morales, “Crowdsourcing conservation: How volunteers can advance federal conservation goals” (Medium.com, April 21, 2021). Available at: <https://medium.com/cgo-benchmark/crowdsourcing-conservation-c17c54b3555e>

See also: CDFW, “Saving Species Together” <https://wildlife.ca.gov/Saving-Species-Together#55656856-about-the-campaign>



We do thank Edison, however, for its provision of authoritative links on species identification and reporting. (RSP A3P7, BIO-7 & A3P16, BIO-32.)

### REC-1

**EDISON:** *Public safety is a real concern on the Kern River, where over 300 drownings have occurred since 1968, including 2 deaths in the last year. Flow fluctuations in the 16-mile bypass reach for the purpose of whitewater recreation raise concerns for public safety. (RSP A3P25, REC-6.)*

**KRB:** Edison’s “300” figure comes from Kern County’s “Kern River Deaths Since 1968” sign at the mouth of the canyon along Highway 178. ***That sign does not include deaths in Tulare County***, and thus does not meaningfully inform river safety issues in the dewatered reach.<sup>60</sup> Indeed, most “Kern River” miles in Kern County — where the “300” figure comes from — have been encumbered by hydropower (Borel, KR1, KCP, Rio Bravo) that artificially *lowers* flows. Furthermore, hydrological mitigation is subject to the governing regime that limits ramping rates of flows. Modulating flow changes under that regime has been successful; we are aware of no complaints or incidents resulting from either the current recreational flow regime or from Edison cycling its tunnels as a part of routine maintenance or operational contingencies. We accordingly agree with the comment of Mr. Nikirk that triggered Edison’s response above: this issue lacks evidentiary support for investigation at this point; Edison has had more than a year to obtain it.

### REC-2

**EDISON:** *The peak recreation season for this study is defined as April to September, and SCE acknowledges that there is recreation taking place during the shoulder seasons (fall and spring) as well as winter. Therefore, SCE has included two visitor survey approaches: in- person surveys during the peak recreation season, supplemented with an online survey that will be accessible to visitors for 12 months. The online survey access code (QR code) will be posted at various information boards at the entrance to the recreation sites, and a link will be available on the Project relicensing website. (RSP A3P34, REC-34.)*

**KRB:** As noted in our comments above<sup>61</sup>, we are extremely interested in having visitor intercepts and spot counts (1) extended into a full year in order to characterize “offseason” project effects from October through April and (2) extended upriver for two miles above

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<sup>60</sup> [https://www.bakersfield.com/kern-river-body-count-at-307-as-memorial-day-weekend-kicks-off/article\\_45cfb34e-9c8d-11ea-8786-07805f62c47a.html](https://www.bakersfield.com/kern-river-body-count-at-307-as-memorial-day-weekend-kicks-off/article_45cfb34e-9c8d-11ea-8786-07805f62c47a.html)

<sup>61</sup> See our comments above at KRB SR-1 R1 and KRB SR-3 R2, along with accompanying footnotes 7 and 30

Fairview Dam to Johnsondale Bridge. These steps would capture the views of recreators who may have foregone recreation in the dewatered reach specifically in reaction to the project's dewatering of the 16 miles below Fairview Dam. Without these two expansions, Edison risks having an incomplete understanding of project impacts, operating conditions, potential mitigation measures, and an insufficient record to meet the "substantial evidence" standard applicable to the license conditions as well as to support the USFS determination on whether "any proposed water resources projects will have a direct and adverse effect on the values for which the river was established."<sup>62</sup>

## SOCIO-2

**EDISON:** *Contrary to the commenter's opinion, the current Project flow regime represents the baseline condition considered for analysis in this relicensing, and there is no evidence of an adverse effect of the Project to the local economy. The commenter presents no evidence that the Project "depresses human economic and experiential enjoyment of the dewatered reach." In fact, this comment is belied by the popularity of this reach of the river, enjoyed by thousands of recreationalists each year. (RSP A3P43, SOCIO-2.)*

**KRB:** The project renders the NFKR hydrograph a shadow of what nature intended. That "depresses human economic and experiential enjoyment of the dewatered reach." The local Chamber of Commerce has requested "studies on the economic value of recreational whitewater in the Kern River Valley," believes "this economic value has increased exponentially since the last relicensing," and seeks "a sensible plan to release water from the Fairview Dam so people that visit our town and patronize our businesses can count on higher flows at the most desirable sections of whitewater. We are in favor of having as much water flow as possible downstream of the Fairview Dam as possible at any given time."<sup>63</sup> Trout Unlimited and the Kern River Conservancy have stated: "we can no longer tolerate the diversion of river flows which are critical for fish populations, the aesthetic value of the North Fork of the Kern, as well as angling and whitewater tourism which are vital for the economic health of the Kern River Valley."<sup>64</sup> Local outfitter Kern River Outfitters concurs: "As a whitewater rafting company, the de-watered section of the Kern means we are unable to operate in the de-watered section as the water is too low. . . . By allowing the water to flow through the entirety of the Upper Kern our community will prosper."<sup>65</sup> If this is not enough evidence for Edison, it should re-read the comments in this proceeding, the overwhelming majority of which talk about the project's negative effects on

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<sup>62</sup> 16 U.S.C. § 825(b); 68 Fed. Reg. at 51,078; 36 CFR § 297.4

<sup>63</sup> FERC eLibrary No. 20220121-5005

<sup>64</sup> FERC eLibrary Nos. 20220606-5243 & 20220603-5004

<sup>65</sup> FERC eLibrary No. 20220120-5030

recreation and the local economy — and the overwhelming majority of which specifically support the comments and study requests offered by Kern River Boaters.

This information, which Edison has chosen to ignore, should not be new to Edison. According to the 1996 EA, “Whitewater boating is locally important as it benefits the local economy and provides recreational opportunities and benefits.”<sup>66</sup> The 1996 License Order speaks even more strongly: “The North Fork Kern River is the second most used river for whitewater recreation in California. In addition, whitewater boating is important to the local economy because of the tourist spending and jobs associated with boating opportunities.”<sup>67</sup> The project unquestionably removes a vast inventory of boating opportunities, both commercial and noncommercial and across the spectrum of craft. As FERC and USFS recognized, “increased availability of whitewater recreation opportunities would likely benefit the local economy.”<sup>68</sup> The agencies announced they are “aware of the importance of river recreation opportunities in Southern California and have taken into account the potential public benefits of increased whitewater boating flows . . . .”<sup>69</sup> The agencies agreed that placing “restrictions on diversions for power” would “see the quality of the boating experience improve” and “open up more of the bypassed reach to boating opportunities.”<sup>70</sup> The point is further shown by angler dissatisfaction with the fishery in the dewatered reach and the poor prospects for fish survival due to project operations. Our group has over 1,100 members now, and we can declare without hesitation: People repeatedly decline to recreate in the dewatered reach because of project operations. Furthermore, the fact that the dewatered reach is popular for recreation stems from the project’s limitations. It is not able to remove more than 600 cfs from the river. Thus, for a portion of some years, large inflows during peak runoff marginally decrease the impact of project effects. That does *not* make the reach a popular destination when it is in the solid grip of project effects, especially during the shoulder seasons that would otherwise present highly enjoyable opportunities for recreation in the reach but for the project’s imposition of (inadequate) fish flows. Project effects extend into the perennial flow season when natural inflows remain adequate for enjoyable recreation, but the public is again offered fish flows in the reach. The project unquestionably depresses the potential for enjoyment of the dewatered reach and, by extension, the reach’s contribution to the local economy. The fact Edison attempts to challenge this salient point at this late stage (KRB has made this argument since Day One of this proceeding; only now at the eleventh hour does Edison

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<sup>66</sup> 1996 EA at 50

<sup>67</sup> 1996 License Order at 22

<sup>68</sup> 1996 EA at D-8 (quoted in 1996 License order at 23, fn. 57)

<sup>69</sup> 1996 EA at 15

<sup>70</sup> 1996 EA at 57

contend it lacks evidentiary support) is unhelpful to the process and reveals weakness in its position.<sup>71</sup>

#### **IV • KRB INFORMATION REQUESTS**

KRB asks that the Commission direct Edison to comply with just one of our four information requests. KRB has found a turbine flow efficiency formula (KRB IR2) in the FERC record. KRB has lodged its NFKR hydrology request in WR-2, rendering a separate KRB IR3 request redundant. And Edison has provided information that allows us to obtain creek hydrology (KRB IR4) from CSWRCB. That leaves **KRB IR1: CAISO BID HISTORY**, which Edison has not acknowledged, as follows:

#### **KRB IR1: CAISO BID HISTORY**

The California Independent System Operator [“CAISO”] creates and regulates the California energy market. Through its pricing mechanisms, the CAISO market signals 24/7/365 through its prices whether power generation is highly valuable to the grid (by offering high prices), moderately valuable to the grid (moderate prices), or marginally valuable to the grid (low prices). It even signals when power generation is harmful to the grid by offering negative prices.

Edison participates in the CAISO market, bidding the power produced by KR3 into the “day ahead” market.<sup>72</sup>

The Federal Power Act, as interpreted by the Commission, charges it with balancing the noneconomic value of recreation against the economic value of power generation and designing a license that is best adapted to the project given the relative strength of these competing values.

One obvious metric of the economic value of power generation to our society is the prices reflected on CAISO’s market. If there are various times of day, days of the week, or month of the year, in which generation is marginally or negatively valued, the case for favoring noneconomic values such as recreation and the environment in the Commission’s delicate balancing analysis may be relatively enhanced.<sup>73</sup> Knowing how Edison’s generation of power has been valued by the CAISO market — which is about as fair an indicator of that power’s social utility can be — is the starting point in evaluating whether there are

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<sup>71</sup> See Clark, Jef *et al.* "[Moving the goalposts](#)" *Humbug! The Skeptic’s Field Guide to Spotting Fallacies in Thinking* (2005) at 101

<sup>72</sup> Dan Keverline, KR3 Managing Operator, 10FEB2021 TWG

<sup>73</sup> See KRB SD1 at 11-22

times its energy is only marginally useful or even disfavored by our contemporary energy market.

For these reasons, we request that the Commission direct Edison to provide by April 31, 2023, the record of its bids into the day-ahead CAISO market from 2017 to 2022 in Excel spreadsheet format on its relicensing website for stakeholders and the managing agencies to examine and evaluate as a necessary condition of moving forward with the pre-application process.

## **V • KRB REVISED STUDY REQUESTS**

### **KRB SR-1: AESTHETIC FLOWS**

*Criterion (1) – Describe the goals and objectives of each study proposal and the information to be obtained.*

The goal of this study is to describe and evaluate the effects of project operations on minimally acceptable aesthetic flows throughout the dewatered reach of the project — 16 miles of the Wild and Scenic North Fork Kern River — and to evaluate potential measures to alleviate those effects. This would be accomplished by evaluating the aesthetic benefit of various flows released into it from Fairview Dam. The objectives of this study are to:

- (1) Document the existing aesthetic character and conditions of the dewatered reach;
- (2) Identify key observation points;
- (3) Collect photo and video documentation under various existing and controlled flow conditions throughout the reach;
- (4) Conduct a focus group assessment of controlled flow conditions, either at key observation points or through photographs of the same;
- (5) Determine the operational feasibility, effects on generation, and cost of providing aesthetic flow releases;
- (6) Evaluate the potential effects of minimally acceptable aesthetic flow releases on other resources including recreational uses, aquatic resources, water quality, and project generation.

*Criterion (2) – If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.*

Not applicable.

*Criterion (3) – if the requester is not a resource agency, explain any relevant public interest considerations in regards to the proposed study.*

The Commission is charged by the Federal Power Act to balance developmental values with nondevelopment values, including aesthetic values, in its formation of hydropower licenses

in a manner best adapted for the affected resource, its user groups, and the goals of existing management plans. The United States Forest Service is charged with establishing conditions in hydropower licenses that are necessary for the public's utilization and enjoyment of the affected resource, including aesthetic enjoyment.

The dewatered reach of the Wild and Scenic North Fork Kern River attracts vast members of the public throughout the year. It is the closest major perennial river to Southern California. It also has inherent outstanding values, and its visual values are to be conserved and enhanced under the Wild and Scenic River Act.<sup>74</sup> It is unique in that the dewatered reach runs close to, and is frequently viewable from, the adjacent state highway, Mountain 99. More of it is viewable from the many popular campgrounds, developed and primitive, directly next to the river. Aesthetic changes have the potential to affect public use and enjoyment of the dewatered reach. To fully evaluate the project's effect on aesthetic flows over within the dewatered reach, and to balance potential enhancement opportunities with their costs, an aesthetic flow study is relevant to the public interest. It would also assist USFS with its obligation under Section 7 of the Wild and Scenic River Act to evaluate whether a proposed license for KR3 would directly and adversely impact the river.

*Criterion (4) – Describe existing information concerning the subject of the study proposal, and the need for additional information.*

The PAD generally describes the visual characteristics of project facilities and surrounding project lands.<sup>75</sup> However, it does not describe the relationship between decreased flows and aesthetics in the dewatered reach, nor does it cite any studies that characterize or evaluate that relationship. Information on the aesthetic conditions collected during this study would inform a decision on whether additional minimum releases from the project's diversion would be warranted to improve the aesthetic quality of the dewatered reach. In the last proceeding, USFS noted that some commenters requested increased minimum flows for "visual quality," but averred, "This topic was brought out when the licensing process was nearing completion and too late to address this licensing."<sup>76</sup> It is ripe to be addressed at this early stage.

A 1982 USFS study team stated that Fairview Dam "does not greatly alter the free-flowing character of the river" below. However, it is important to note that this judgment was essential to the eligibility of the dewatered reach as a Wild and Scenic River — without it, the reach would have been ineligible.<sup>77</sup> This was a functional judgment reflecting the

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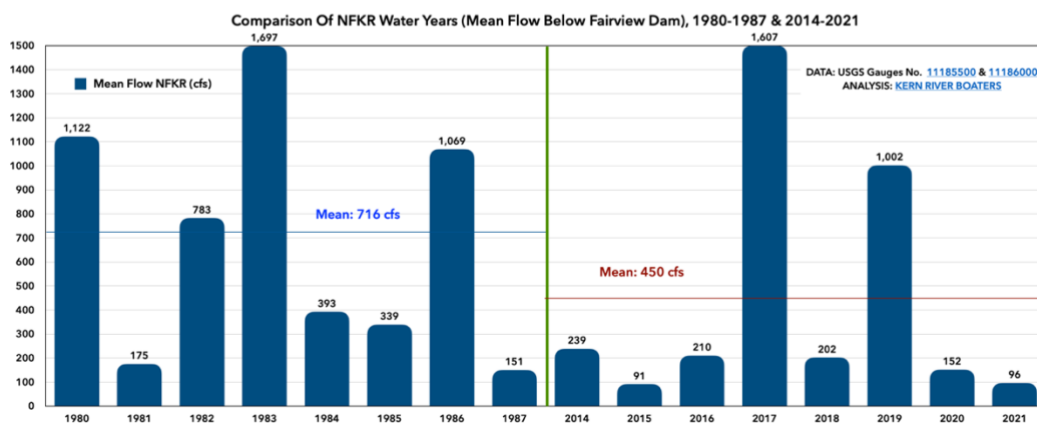
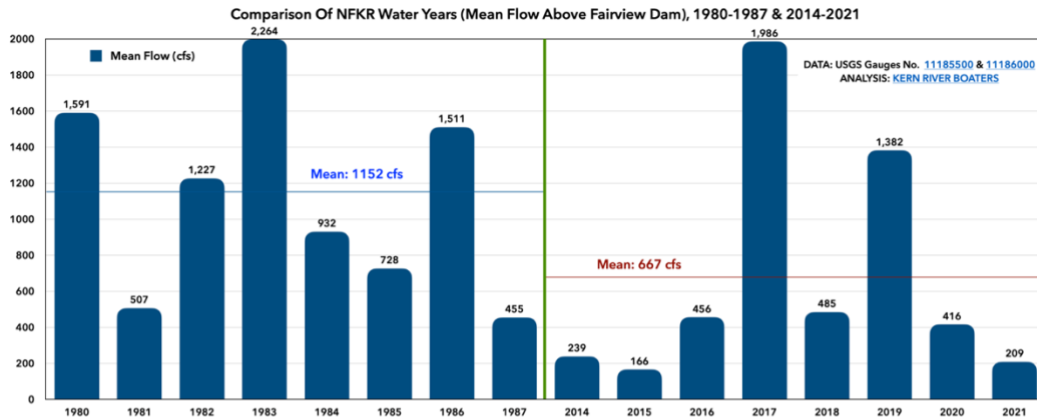
<sup>74</sup> 1994 USFS N&SFKR W&SR ROD&CMP at 45

<sup>75</sup> PAD at 5-158 through 5-170

<sup>76</sup> 1998 USFS NOD FONSI at Appendix E, 8

<sup>77</sup> WSRA at § 15(b)

smallness of the impoundment and dam and the lack of river course alteration. It was not an aesthetic judgment of the visual quality of the dewatered reach. A fair reading of the 1982 FEIS reveals it does not have anything to say about aesthetics or visual quality attending fish flow releases in the dewatered reach. Furthermore, flows at the time of the study and designation were much higher than those recently experienced in this drainage:



The 1994 USFS W&SR CMP describes a visual resource as “The composite of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors,” and directs USFS to “Strive for higher visual quality whenever practical.”<sup>78</sup> It offered this direction notwithstanding the functional conclusion of the 1982 FEIS cited by Edison; there is obviously room for improvement.

Even if the passage from the 1982 FEIS constituted an aesthetic judgment, it would constitute a professional aesthetic judgment, and such is not determinative here. Research cautions us that the aesthetic judgments of river professionals usually do not line up with

<sup>78</sup> 1994 USFS N&SFKR W&SR CMP at 45 & “Appendix C” at 18

the judgments of the public at-large.<sup>79</sup> Moreover, in the last proceeding, USFS noted that some commenters requested increased minimum flows for “visual quality.” USFS *did not* state there was “no evidence of a problem.” Rather, it averred, “This topic was brought out when the licensing process was nearing completion and too late to address this licensing.”<sup>80</sup> KRB has raised this issue at the earliest possible moment in this proceeding. The issue of the project’s impact on aesthetics in the dewatered reach has never been scientifically studied during the project’s 101-year-long encumbrance of this outstanding river.

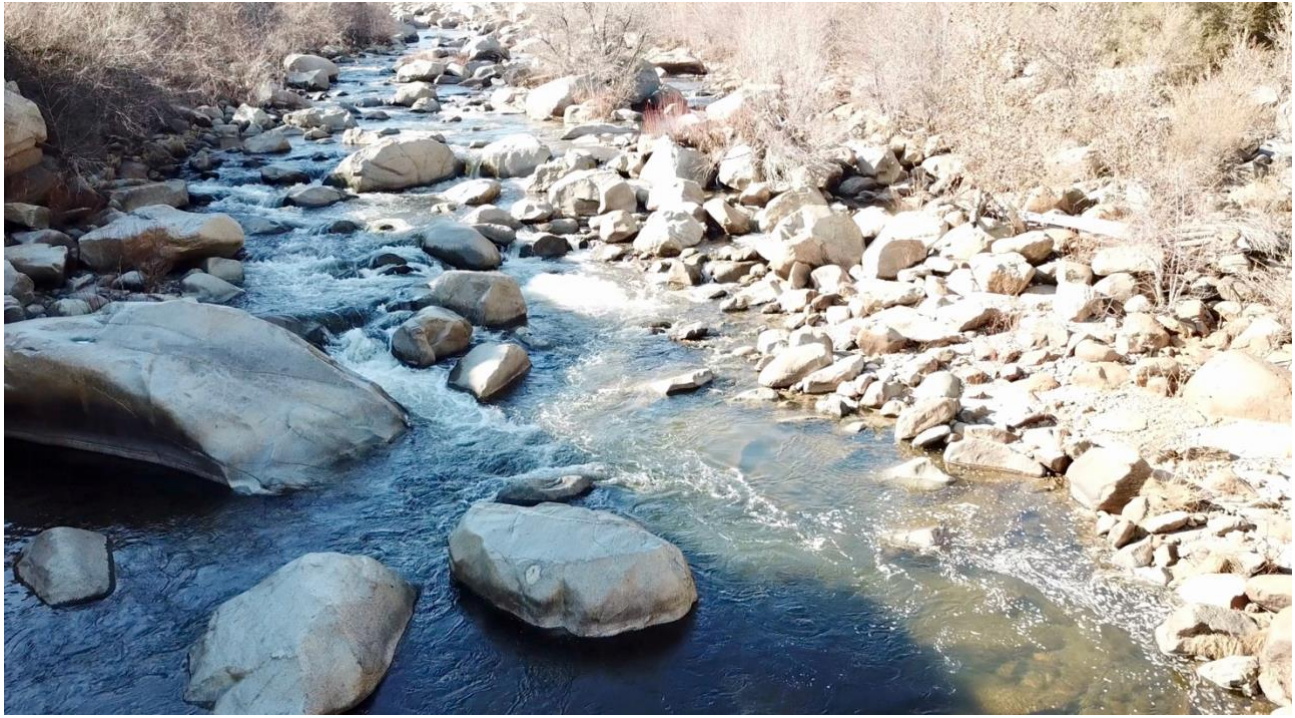
Edison routinely dewateres the NFKR to levels far below the lowest levels of natural flow. Over the existing POR (WY 1997-2021), the daily average flow above Fairview Dam fell below 125 cfs just 5% of the time. Flows that low are objectively rare for this river corridor. By contrast, flows in the dewatered reach below Fairview Dam fell below 125 cfs 44% of the time due to project operations — almost half the time. That number would have been even higher had the project not been offline for repairs so often (completely offline for 1,506 of the 9,131 days in the POR, and partially offline for at least hundreds more). Project operations turn what are rare low flow conditions on the NFKR into a routine, near-majority of days occurrence. It is reasonable to expect such dewatering to have a negative effect on the river as experienced by the humans who live in or visit that environment: the river was formed under a natural hydrograph; an unnaturally impaired hydrograph can render that formation aesthetically displeasing. Dewatering the river at Fairview Dam narrows the waters below, dries the riverbanks, exposes rocks in the riverbed that would otherwise be covered, reduces water speeds, lowers pool heights, eliminates many riffle sections, and increases areas covered with algae and other pond scum. The following images depict the dewatered reach with about 50 cfs in the riverbed on a day when 550 cfs was incoming at Fairview Dam:

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<sup>79</sup> Shelby, B., Brown, T.C. and Taylor, J.G., “Streamflow and recreation,” US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station (1992)

<sup>80</sup> USFS KR3 FONSI (1998) at Appendix E, 8







*Criterion (5) – Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.*

Project operations leave only 40-130 cfs, or less, in the dewatered reach when incoming flows are below 640-770 cfs and decreases all incoming flows above 640 and 770 cfs by 600 cfs. Edison dewateres the NFKR to levels far below the lowest levels of natural flow. As explained above, project operations turn a rare occurrence of flows below 125 cfs (5%) into a routine phenomenon (44%). That number would have been even higher had the project not been offline for repairs so often (completely offline for 1,506 of the 9,131 days in the POR, and partially offline for at least hundreds more). Project operations accordingly turn what are very rare low flow conditions on the NFKR into a routine, typical occurrence. The results of this study would provide a separate, independent vector of analysis for a minimum flow regime, and it may dovetail with agency goals on issues such as environmentally required minimum flows, angler-enjoyable fish flows, water quality flows, and enjoyable recreational flows.

*Criterion (6) – Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.*

The aesthetic flow study should follow the methods outlined in *Flows and Aesthetics: A Guideline to Concepts and Methods* (Whittaker 2017). These guidelines recommend a progressive approach with phased efforts of increasing resolution.

Phase 1 (desktop analysis and reconnaissance assessment) includes the characterization and documentation of key viewing locations and key viewing characteristics (i.e., waterfalls, vegetation, distance, etc.) in the dewatered reach. Potential use and access to these key viewing locations would be studied. From the information gathered during Phase 1, a controlled flow evaluation form would be created. In Phase 2 (documentation and assessment of targeted flow evaluations), Edison would either tailor its diversion to release target flows selected in consultation with a focus group that would evaluate the flows in person or with video/photographic representations, or the same could be accomplished opportunistically as the targeted flow levels are achieved under normal operations. The 2017 guidelines provide considerations and recommendations on how to best identify key observation points, collaborate with the public, and conduct surveys, among other study components.

### **Desktop Analysis and Reconnaissance Assessment (Phase 1)**

#### *Focus Group*

A focus group composed of interested stakeholders should be assembled to provide assistance and input. These stakeholders should include members from the public, not just from the Kern River Valley, but also members representative of from its primary visitor base of Southern California, from Bakersfield, out to Ventura County, down through Los Angeles, Riverside and Orange counties, and concluding in San Diego. The focus group members should allow for collaboration and agreement on multiple decision points regarding the development of the study.

#### *Key Observation Points*

In consultation with the focus group, identify key observation points to represent important landscape perspectives and viewing opportunities of the dewatered reach. Key observation points should include at least some of the following sites with extended roadside visuals and turnouts, from North to South (identified by corresponding rapid name): Bomb's Away, Fairview, Hairy Ferry, Boateater, Passing Lane, Redrock, Squashed Paddler, Golf Course, and Fender Bender. KOP's should also include views from at least some of the developed (e.g., Fairview, Goldledge, Camp 3) and primitive (e.g., Chamise, Springhill, Chico Flat) campsites. The assessment should include identification of key viewing characteristics (e.g., channels, key features/structures, waterfalls, pools) and characterization of potential use and access of these areas.

#### *Historic Data Gathering*

Assess and characterize the timing and flow ranges of historic flow exceedance events to characterize existing flow conditions as they relate to the aesthetic character of the dewatered reach.

## **Documentation and Assessment of Targeted Flows (Phase 2)**

### *Controlled Flow Conditions and Evaluation Form*

With the assistance of the focus group, determine the targeted flow levels for conducting a review/evaluation of identified flows from the key observation points. An explanation of the targeted aesthetic flows should be included in a study progress report provided to the Commission and interested stakeholders. A broad range of flows would allow evaluators to conduct a meaningful evaluation and identify a minimum acceptable flow aesthetic flow. At least four flows should be evaluated as part of the flow study: current minimum fish flows, and additional low, moderate, and high flows. Edison maintains a significant ability to shape flows below Fairview Dam anywhere from the level of natural flow above Fairview Dam to a level of 600 cfs less — and anywhere in between.

A numeric rating evaluation form of the overall view and specific elements (e.g., sound level, amount of turbulence) should be developed. The form should include questions pertaining to the evaluation of the aesthetic conditions for each key observation point location under the targeted flow ranges.

### *Controlled Flow Assessment*

The focus group should review the flows on-site at the key observation points, complete the evaluation form, and participate in a focus group discussion (off-site). Photo and video (with sound), documentation of the observed flows reviewed by the focus group should be documented.

## **Data Analysis and Report Preparation**

The operating consultant should prepare a report that includes discussion of the study methodology, study area, analysis and results of the Aesthetic Flow Study. The report should document the information compiled from the above efforts, including analysis and summary of the focus group evaluation form responses and discussions. The report should also include an assessment of potential effects of providing aesthetic flows on other resources, such as recreation opportunities, aquatic resources, and project power generation. Comments and criticisms of the analysis should be incorporated into the report as an appendix.

The proposed aesthetic study follows methods outlined in *Flows and Aesthetics: A Guideline to Concepts and Methods* (Whittaker 2017). Therefore, these methods are consistent with generally accepted methods for conducting an aesthetic flow study.

*Criterion (7) – Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.*

The anticipated cost for the aesthetic flow study request is estimated to be within the range of \$20,000 to \$30,000. There are no proposed alternative studies.

## KRB SR-5: FLOW TRAVEL TIMES

*Criterion (1) – Describe the goals and objectives of each study proposal and the information to be obtained.*

The goal of this study is to evaluate the amounts of time changes in flow take to transmit from the project's diversion point to its powerhouse, both through its conveyance and through the dewatered reach, the results of which may constrain or afford opportunities for plausible environmental or recreational mitigation measures.

*Criterion (2) – If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.*

Not applicable.

*Criterion (3) – if the requester is not a resource agency, explain any relevant public interest considerations in regards to the proposed study.*

The Commission is charged by the Federal Power Act to balance developmental values with nondevelopment values, including recreational and environmental values, in its formation of hydropower licenses in a manner best adapted for the affected resource, its user groups, and the goals of existing management plans. The United States Forest Service is charged with establishing conditions in hydropower licenses that are necessary for the public's utilization and enjoyment of the affected resource, including recreation. The results of this study may further the managing agencies' goals by providing solid data about constraints and opportunities the project's configuration affords for environmental and recreational mitigation. For instance, recreational flow releases, which lower the ability of the project to generate power, may be able to be coordinated in substantial respect with predictable times of day, days of the week, or months in the year when energy markets are likely to signal low or negative needs for marginal power.<sup>81</sup> Such coordination will require information about how long it takes for the water to travel the conveyance (to evaluate at what time changes in the diversion affect the timing of the project's power production) and the dewatered reach (to evaluate the recreational opportunities afforded by changes in the diversion).

The dewatered reach of the Wild and Scenic North Fork Kern River attracts vast members of the public throughout the year. It is the closest major perennial river to Southern California, and attracts significant numbers of visitors for camping, hiking, fishing, whitewater, and other forms of recreation throughout the year. It also has inherently outstanding recreational values that are to be conserved and enhanced under

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<sup>81</sup> See KRB SD1 at 11-22

governing management plans.<sup>82</sup> The amount of time flows take to reach the powerhouse through the project's conveyance and through the dewatered reach may constrain or afford opportunities for conservation and enhancement mitigation in the public interest. Since the managing agencies are charged with mitigating the project's effects in balance with society's need for power, it is important to know if and when there are opportunities for the mitigation of those effects that coincide with times society has a relatively low need for power. A controlled-flow timing study would accordingly serve the public interest in designing a license that best serves this public resource.

*Criterion (4) – Describe existing information concerning the subject of the study proposal, and the need for additional information.*

The PAD does not describe the amount of time flows or flow changes at the diversion take to arrive at the project powerhouse by either its relatively direct concrete conveyance or the relatively meandering natural riverbed it affects.

*Criterion (5) – Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.*

The project presently takes the first 40-45 cfs of incoming flows at the Fairview diversion dam for minimum power generation, and then, after the seasonally varying minimum instream flow requirement is satisfied, takes the next 600 cfs. These conditions leave only 40-130 cfs, or less, in the dewatered reach when incoming flows are below 640 and 770 cfs, and decreases all incoming flows above 640 and 770 cfs by 600 cfs. The project accordingly has a major effect on recreation in the dewatered reach throughout the year. The proposed controlled-flow timing study would be used to develop timing requirements of recreational or ecological releases to as part of the license requirements.

*Criterion (6) – Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.*

The study would involve flow gauges at the diversion point and timed releases of several different quantities of water. Two different sets of timings need to be collected: 1) time required for water to move through its conveyance until it reaches the powerhouse, and 2) time required for water to move through the dewatered reach of the NF Kern. This can be accomplished with the use of a gauge at the diversion point, at the forebay, and just

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<sup>82</sup> 1994 USFS N&SFKR W&SR ROD&CMP at CMP 46-47

upriver of the tailrace, along with the existing gauge in the riverbed just below Fairview Dam. Alternatively, a simple logging of energy output could directly correlate timing at the forebay. Edison, moreover, retains the capacity to significantly shape flows in the riverbed and its conveyance to obtain this data.

**Part 1: Time required in conveyance**

Sensors do already exist at “the penstocks [which] are equipped with electronic flowmeters for the determination of the amount of waterflow” (SCE, 1991). Where not already present, flow gauges should be placed at the diversion point at Fairview dam, at the generators or penstock valves. Using these sensors, change the diversion from 0 cfs to each flow volume as specified (and according to ramping maximum constraints), and record the time required for the specified flow to reach the point of power generation. Optionally, also record the power generated itself (MW) and measure time required to corresponding power generation if there are any further time delays or requirements.

Flow volume (cfs)	Time required for water passage through conveyance from diversion point to power generation point (minutes)	Time required from water diversion to power generation (minutes)
100		
200		
300		
400		
500		
600		

**Part 2: Time required in river channel**

Where not already present, flow gauges should be placed at the diversion point at Fairview dam, and in NF Kern River at the Powerhouse above the powerhouse discharge to capture the flows in the river at that point. Using these sensors, change the diversion to release each flow volume specified into the river channel, and record the time required for the specified flow to reach the Powerhouse via the river channel. Since these times will differ based on how much water is in the river, evaluate the speed at various incoming flow levels.

Flow volume released (cfs)	Time required for water passage through river channel from diversion point to Powerhouse (minutes)			
	Incoming flow above Fairview is 100 cfs	Incoming flow above Fairview is 500 cfs	Incoming flow above Fairview is 1000 cfs	Incoming flow above Fairview is 1500 cfs
100				

200				
300				
400				
500				
600				

Where data is already recorded and available, it could be provided in lieu of re-measurement. Report and share all results with stakeholders.

*Criterion (7) – Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.*

The cost for this internal study should be an estimated \$15,000 based on the use and recording of three gauges, less if energy correlation is used at the endpoint. The controlled flow portion of the study would not amount to an out-of-pocket cost to Edison; it would be lost generation opportunity in service of designing a license for vastly more generation (40 years of such) that is best adapted to the affected resource and its users. Edison’s proposed alternative is inadequate in that it does not plainly state (1) that it will measure flow travel times in both the river and its conveyance, (2) that it will measure flow travel times at different changes in flow level, and (3) that it will identify these times according to the best science available rather than estimate them.

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## VI • Submitted By Kern River Boaters

This document was generated through engagement with and consideration of the Directors of Kern River Boaters, its Relicensing Committee, the KRB membership group, conservationists, the local community, and countless seasonal, travelling, local, weekender, old, new, and wayward whitewater recreators, all of whom deeply love the Wild and Scenic North Fork Kern.

Respectfully submitted,

//s// ED

Elizabeth Duxbury, President

//s// JLP

José Luis Pino, Vice President

//s// BD

Brett Duxbury, Secretary-Treasurer

DATED: July 20, 2022

