## KERN RIVER BOATERS

**COMMENTS ON WR-1 WATER QUALITY**

**1.0 POTENTIAL RESOURCE ISSUE**

**Edison**: *[Project] operations have the potential to alter water temperatures and dissolved oxygen (DO) concentrations, which may affect suitable habitat for fish and other aquatic species.* (PSP WR-1 at 1.)

**KRB**: In the 2021 PAD, Edison concedes that “[t]he causes of reduced . . . DO concentrations were . . . likely due to [grazing] and abnormally high water temperatures during sampling.”[[1]](#footnote-1) Edison has also conceded that quantity of flow below Fairview Dam affects water temperature.[[2]](#footnote-2) It is troubling that Edison continues to hold out hope denying the obvious: project operations — the diversion of water at Fairview Dam — do not just “have the potential” to alter water temperatures and DO concentrations; project operations do alter those parameters. As USFS, NPS & CDFW concluded in the Upper Kern Basin Fisheries Management Plan, “The water diversion that has the greatest impact on the trout fishery occurs in [the project’s dewatered reach]. Water is diverted by Southern California Edison Company at Fairview Dam for hydroelectric power generation at Kern River Number 3 Powerhouse. There is potential for improving habitat for trout during low flow periods by reducing water temperatures by increasing flow releases from Fairview Dam. The various agencies and the public should work through the relicensing process, or other methods if practical, to obtain these water allocations during this critical low flow period.”[[3]](#footnote-3)

**2.0 PROJECT NEXUS AND HOW THE RESULTS WILL BE USED**

**EDISON**: *Additional data are needed to characterize water temperature and DO in the Project Area. Results will be used to assess Project-related effects on aquatic habitat and determine when the Regional Water Quality Control Board (RWQCB) water quality objectives related to stream temperatures and DO concentrations are met.* (PSP WR-1 at 1.)

**KRB**: Edison fails to explain why only these two water quality parameters are to be tested. The project may reasonably be expected to effect pH, conductivity, turbidity, and other relevant water quality parameters. Further, the degree to which these parameters are altered due to the natural travelling of water downstream as opposed to the project’s removal of critical quantities of that water cannot be established without a comparison of reasonably contemporaneous samples taken at reduced and zero levels of project operations (diversion). We request that this limited study be expanded to account for these facts.

**3.0 STUDY GOALS AND OBJECTIVES**

**EDISON**: *Collect current stream water temperature [and DO monitoring] data to characterize current water temperatures [and DO concentrations] during summer months.* (PSP WR-1 at 1.)

**KRB**: Project operations remove significant quantities of water from the NFKR year-round. Edison does not provide a rationale for limiting testing to summer months.

**EDISON**: *Collect current fecal coliform data to characterize bacterial concentrations.* (PSP WR-1 at 1.)

**KRB**: Although Edison proposes to study bacterial concentrations, it does not concede in the study plan that project operations may affect those concentrations, and thus Edison offers no project nexus for the study of bacteria. Although unstated by Edison, a nexus exists: In 1995, USFS, NPS, and CDFW concluded there was an “environmental concern” about coliform bacteria levels in the dewatered reach.[[4]](#footnote-4) CSWRCB has stated that “increased fecal coliform levels and potential solutions to the problem were flow-related.”[[5]](#footnote-5) USFS has noted that “[h]igh coliform bacteria counts may be responsible for instances of low DO” in the dewatered reach.[[6]](#footnote-6) The 1996 EA concluded, “Flows in the bypassed reach can influence bacteria counts through dilution.”[[7]](#footnote-7) Edison’s 2021 PAD also concedes that project operations “may influence coliform counts.”[[8]](#footnote-8) These facts should be included in the study’s description of potential resource issues and project nexus. Further, the degree to bacterial concentrations are influenced by the natural travelling of water downstream as opposed to the project’s removal of critical quantities of that water cannot be established without a comparison of reasonably contemporaneous samples taken at reduced or zero levels of project operation (diversion). We request that this limited study be expanded to account for these facts.

**4.0 STUDY AREA AND STUDY SITES**

**4.1. TEMPERATURE AND DISSOLVED OXYGEN MONITORING SITES**

EDISON: *2.* *WQ-NFKR-18.5: NFKR immediately downstream of Fairview Dam.* (PSP WR-1 at 1.)

KRB: As Adam Cohen stated in the March 22, 2022 PSP meeting, the proposed monitoring site is so close to the diversion point that it does not provide meaningful information on the impact of the project on the dewatered fishery. Given that there are so few monitoring sites proposed, we ask that either (a) this site be moved further downstream or (b) an additional site be included downriver to a site between the 1998-2002 monitoring site (6 km below Fairview Dam) and Goldledge campground.

EDISON: *4. WQ-NFKR-3.2: NFKR immediately upstream of the KR3 Powerhouse.* (PSP WR-1 at 1.)

**KRB**: The proposed monitoring site should be placed upstream of the project’s emergency spillway so that spillway operation, if needed, does not confound the results, which are attempting to capture project effects that would be lost by the inclusion of diverted water from the spillway.

## 4.2. FECAL COLIFORM SAMPLING SITES

## EDISON: *4. WQ-NFKR-3.2: NFKR immediately upstream of the KR3 Powerhouse.* (PSP WR-1 at 2.)

KRB: The proposed sampling site should be placed upstream of the project’s emergency spillway so that spillway operation, if needed, does not confound the results, which are attempting to capture project effects that would be lost by the inclusion of diverted water from the spillway.

EDISON: *[null].* (PSP WR-1 at 2.)

KRB: The proposed sampling sites are located just above and at the end of the dewatered reach. We ask that a third coliform sampling site be included at Goldledge campground or some other convenient, representative site in the middle of the dewatered reach to greater contextualize and validate data captured at the two far ends of the reach.

**5.0 EXISTING INFORMATION:**

**EDISON:** *[null]*. (PSP WR-1 at 4.)

KRB: Edison fails to note the following recent[[9]](#footnote-9) summer water quality parameter samplings above and below Fairview Dam:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DATE | TEMP | TEMP | D.O. | D.O. | COND | COND | FLOW | FLOW |
|  | ABOVE | BELOW | ABOVE | BELOW | ABOVE | BELOW | ABOVE | BELOW |
| 7/3/2021 | 20.0 | 23.7 | 7.4 | 6.4 | 83 | 254 | 144 | 102 |
| 7/17/2021 | 19.3 | 23.3 | 7.0 | 6.2 | 157 | 194 | 126 | 86 |
| 8/7/2021 | 18.7 | 22.9 | 7.7 | 6.8 | 166 | 199 | 113 | 71 |
| GOAL | <20.0 | <20.0 | >8.0 | >8.0 | <200 | <200 |  |  |

(ABOVE=Above Fairview Dam, BELOW=Below Fairview Dam, TEMP=Temperature (C), D.O.=Dissolved Oxygen (mg/L), COND=Conductivity (µS/cm), FLOW=Average Daily Flow (cfs))

**6.0 STUDY APPROACH**

**EDISON**: *Data loggers will be deployed between June 1 and September 30, assuming safe access to the stream channel.* (PSP WR-1 at 4.)

**KRB**: Edison has not described existing information about water quality outside the warm season in its PAD or the PSP. Given that data gap, the relevant parameters should be monitored year-round. Project effects do not begin in June or end in September. Further, since water quality parameters are inherently sensitive to river conditions, and since any single sampling year may experience atypical environmental conditions (dry year *v*. wet year, low water *v*. high water, cold water *v.* warm water), sampling should be accomplished in at least two different years in an attempt to establish contingent baseline conditions in the dewatered reach. A second year of study should accordingly be added (with an option for cancellation if the water outlook is close to that studied in the first year). Finally, monitoring should be performed at least a few days each month without project operations to gain a more refined understanding of project effect — *i.e.*, to evaluate natural changes in water quality against those imposed by the project. We accordingly ask that monitoring continue for one year-long period, two June 01-September 30 periods, and that those times include several days per month without project operations.

**EDISON**: *Coordinates of each logger after installation will be recorded using a Global Positioning System (GPS) unit.* (PSP WR-1 at 4.)

**KRB:** At the March 22, 2022 PSP meeting, Edison consultant Adam Cohen acknowledged that the logger upstream of Fairview Dam would be placed outside of the influence (*e.g*., thermal) of the impoundment. One purpose of this study is to acquire data representative of flows above and below Fairview Dam. Flows above Fairview Dam should not be influenced by the impoundment so that they represent the natural state of incoming waters prior to project effects. For that reason, we ask that monitoring coordinates be revealed for public review to confirm adequate separation from the impoundment after data monitoring is complete and the loggers are removed.

**EDISON:** *Water temperature will be recorded at 15-minute intervals and summarized as daily means, maxima, and minima.* (PSP WR-1 at 4.)

**KRB:** In order to increase public confidence in the results, we ask that Edison provide all raw data to the public in a hosted electronic spreadsheet.

**EDISON:** *Data loggers will be placed in locations with sufficient circulation, yet also protected from high scouring flows.* (PSP WR-1) at 5.0

**KRB:** We ask that data loggers be positioned to ensure no unrepresentative project influence — *i.e.*, above the powerhouse emergency spillway to avoid measurement of conduit water mixed with river water and far enough above the impoundment at Fairview Dam to ensure no impoundment effects.

## **7.0 REPORTING**

**EDISON**: *[null].* (PSP WR-1 at 4.)

**KRB**: We ask that all raw data should be reported to the public in a hosted electronic spreadsheet. Hourly flow data should accompany the reporting to show the delta between the natural flow and the impaired flow to further refine the understanding of project effects.

**9.0 LEVEL OF COST AND EFFORT**

**EDISON:** *The estimated cost (2022 dollars) for the study is $42,000, which includes study-specific consultation, field work, data compilation and analysis, and reporting.* (PSP WR-1 at 6.)

**KRB:** We note that Edison’s estimated cost for this proposed water quality study is less than that of its desktop hydrology study, which involves “validation” of logged data that has already been submitted to USGS for two gauges and acquisition of publicly available data from the third gauge. (Compare PSP WR-1 at 6 [$42,000] with PSP WR-2 at 2 [$50,000].)

1. PAD at 5-45 [↑](#footnote-ref-1)
2. PAD at pp. 5-43 & 5-44 [↑](#footnote-ref-2)
3. 1995 USFS NPS CDFW UKBFMP at p. V-3 [↑](#footnote-ref-3)
4. 1995 USFS NPS CDFW UKBFMP at p. V-3 [↑](#footnote-ref-4)
5. 1996 EA at p. 26 [↑](#footnote-ref-5)
6. 1998 USFS NOD FONSI at Appendix E, p. 13 [↑](#footnote-ref-6)
7. *Ibid*. [↑](#footnote-ref-7)
8. Pad at p. 5-39 [↑](#footnote-ref-8)
9. Adventure Scientists, with USFS, NPS & USFWS, “Wild & Scenic Rivers Water Quality” at <https://experience.arcgis.com/experience/981d82b6126743dc8b053ea67aa2497d> [↑](#footnote-ref-9)