

Attachment 2



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VIA FERC ONLINE

November 2, 2018

The Honorable Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Chairman Kevin J. McIntyre
Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

Re: Comments re Definite Plan,
Project Nos. 2082-062 (Klamath Project) and 14803-000 (Lower Klamath Project)

Dear Secretary Bose and Chairman McIntyre:

On behalf of Siskiyou County (“County”), we are writing to express our significant concerns regarding the Definite Plan for the Lower Klamath Project (“Definite Plan”) that was submitted by the Klamath River Renewal Corporation (“KRRC”) to the Federal Energy Regulatory Commission (“FERC” or “Commission”) on June 28, 2018. The Definite Plan is intended to support KRRC and PacifiCorp’s applications for hydropower license transfer (“Transfer Application”) and surrender (“Surrender Application”). Together, these applications propose to transfer, decommission, and remove the four lower Klamath River dams—Iron Gate, Copco I, Copco II, and J.C. Boyle—that comprise the Lower Klamath Project (“Project”). Three of these dams are located within Siskiyou County. The County has, on multiple occasions, expressed its concerns regarding the potential impacts of dam removal on imperiled species, water quality, and the overall health of the Klamath River ecosystem, as well as socioeconomic impacts on the local community. See, e.g., *PacifiCorp*, 162 FERC ¶ 61,236 at ¶ 28 (Mar. 15, 2018). Unfortunately, the Definite Plan fails to adequately address these concerns.

The Commission’s review is currently limited to the pending Transfer Application. *Id.*, ¶¶ at 12, 54. Pursuant to 18 C.F.R. §§ 9.2 and 9.3, a transfer application may be approved upon a showing that the proposed transferee is qualified to hold the license and operate the facility, and that a transfer is in the public interest. Typically, the Commission’s inquiry is limited to reviewing the transferee’s financial, legal, and technical qualifications to continue to operate the Project. *Id.* Here, however, because the Transfer Application is solely intended to facilitate the ultimate surrender and decommissioning of the Project, the Commission must also consider, based on the Definite Plan, whether KRRC is financially, legally, and technically qualified to effectuate dam removal, including whether it can safely remove Project facilities and adequately restore Project lands. *PacifiCorp*, 162 FERC ¶ 61,236 at ¶¶ 51, 50, 65. Unfortunately, the Definite Plan does not demonstrate that KRRC is qualified to do so. Rather, as described in detail herein, the Definite Plan is fatally flawed, and does not support a conclusion that KRRC will be able to undertake the Project as proposed. Specifically, the Definite Plan is deficient in many respects, including that it (1) proposes an unrealistic schedule, in part because it does not

account for adequate environmental review, (2) underestimates the costs associated with the Project, (3) does not adequately manage risk, (4) misconstrues preemption, and (5) substantively fails to address many critical aspects of the Project, including aquatic resources, terrestrial resources, recreation, and fire management. Accordingly, the County encourages the Commission to deny the Transfer Application because the Definite Plan fails to establish that KRRC is qualified to carry out the proposed Project. The County also reserves the right to provide further comments following any additional submissions by KRRC, following release of any work completed by the Independent Board of Consultants, during any forthcoming formal comment periods, and to present our arguments to the Commission before it makes a determination on the Transfer Application.

1. The Definite Plan's Proposed Schedule is Unrealistic.

Given the proposed drawdown date of January 1, 2021, and given that the end of 2018 is quickly approaching, the Definite Plan proposes a schedule for the Project that is highly unrealistic, particularly from an environmental permitting standpoint. The overly aggressive schedule appears to be driven by KRRC's desire to make the cost of the Project (discussed below) fit within KRRC's budget. Put another way, if KRRC is forced to push out its timeline to accommodate a realistic Project schedule, the cost of the Project will increase to the point where KRRC lacks sufficient funding. This is clear from the Definite Plan, and is one of its most significant flaws.

Examples of the various permitting processes that are not sufficiently underway so as to allow for the proposed timeline include the following:

- **Endangered Species Act ("ESA").** FERC has initiated informal consultation with the U.S. Fish and Wildlife Service and National Marine Fisheries Service under section 7 of the federal Endangered Species Act ("ESA"), but has not initiated formal consultation. Formal consultation and preparation of a biological opinion takes several months or more. Furthermore, no activity that constitutes an irretrievable commitment of resources can commence prior to completing the consultation process. 16 U.S.C. § 1536(d); 50 C.F.R. § 402.09. If formal consultation is not initiated by early 2019 (and there is no indication in the Definite Plan that this will occur), the ESA process will likely delay the proposed timeline.
- **National Environmental Policy Act ("NEPA").** Further NEPA review, including preparation of a new or supplemental environmental impact statement, is required prior to the Commission making a decision on the Transfer Application. Specifically, the Commission is obligated to commence the NEPA process "at the earliest possible time." 40 C.F.R. § 1501.2(d)(3); *see also* 40 C.F.R. § 1502.5; *Env'tl. Def. Fund, Inc. v. Andrus*, 596 F.2d 848, 853 (9th Cir. 1979) ("This court has also noted that delay in preparing an EIS may make all parties less flexible. After major investment of both time and money, it is likely that more environmental harm will be tolerated."). Failing to commence the NEPA review process until the Commission considers the Surrender Application would constitute impermissible project "segmentation." *See Myersville Citizens for a Rural Cmty., Inc. v. F.E.R.C.*, 783 F.3d 1301, 1326 (D.C. Cir. 2015); 40 C.F.R. § 1508.25(a)(1)-(3); *see also* 40 C.F.R. § 1502.4. Furthermore, categorical exclusions to

NEPA review are not applicable, given the “extraordinary circumstances” of this proceeding, as acknowledged by FERC. See 40 C.F.R. § 1508.4; 18 C.F.R. §§ 380.4(b)(2)(ii), (iii), (iv), (vi), (vii); see also *PacifiCorp*, 162 FERC ¶ 61,236 at ¶ 51. Accordingly, because further NEPA review must occur, and FERC has not yet commenced this process, additional environmental review will likely result in a delay to the Project timeline.

- **Section 404 of the Clean Water Act (“CWA”).** The U.S. Army Corps of Engineers cannot issue a section 404 permit for the Project until after the ESA and NEPA processes are completed. In addition, the Corps must complete its own alternatives analysis under section 404(b)(1). Given the issues identified above, completion of the section 404 permitting process will likely delay the Project timeline.
- **Procurement Process.** Under the proposed project delivery method, KRRC will select the design-builder prior to securing a guaranteed maximum price (“GMP”). Appendix A at 25-28. The designated design-builder will then spend six to nine months studying the Project area before the GMP is determined. *Id.* It is KRRC’s position that the GMP will be determined prior to KRRC’s acceptance of the Project license. *Id.* The timing of this process is entirely unrealistic. KRRC states that it plans to have the design phase begin in the first quarter of 2019. *Id.* This would mean that the entire procurement process, including a request for qualifications, request for proposals, and contract negotiation, would be completed in roughly four to six months. This is highly unlikely, as most procurements of this magnitude take at least twice that long. This also ignores the permitting processes that are likely going to alter the ultimate scope of the Project, including with respect to avoidance and minimization measures. This is yet another example of how unrealistic the timeline for the Project is, and how it will almost certainly result in cost overruns.

These examples are only a few of the regulatory, permitting, and compliance issues that are likely to result in a delay to the proposed Project timeline. Rather than acknowledge the complexities that are involved in obtaining the required approvals, it appears that KRRC is trying to downplay these complexities, while also creating a false sense of urgency to put pressure on FERC to make a decision regarding the pending applications as quickly as possible. The County encourages the Commission to carefully review all Project components, including costs (discussed below), prior to making any decision on the pending applications. In doing so, it will become apparent that the proposed schedule is unattainable. Accordingly, the County requests that the Commission deny the Transfer Application.

2. There is Inadequate Funding to Carry Out the Project.

KRRC’s funding sources are currently finite, with a cap of approximately \$450 million. Definite Plan at 299 n. 26. The current estimated cost of the Project (full dam removal) is \$397,700,000 (80% probability). *Id.* at 304. Using a Monte Carlo analysis, the Most Probable Low estimated cost is \$346,500,000 (10% probability) and the Most Probable High estimated cost is \$507,100,000 (90% probability). *Id.* The Most Probable High estimated cost – which KRRC claims would cover the cost of the Project in 90% of the scenarios – exceeds KRRC’s

current funding sources by \$57 million. This demonstrates that KRRC simply does not have the required funding for the Project.

In addition, other evidence demonstrates that current funding for the Project is inadequate. In October 2012, the “Klamath Dam Removal Overview: Report for the Secretary of the Interior” reported the costs of full dam removal with a 98 percent probability range of \$238,000,000 to \$493,100,000, and most probable cost of \$291,600,000. See <http://www.narlo.org/klamathdamremoval%20USGS.pdf>. In the past six years, the estimated most probable cost has increased by over \$100 million (\$291,600,000 compared to \$397,700,000). If the Project is delayed, for example, by three to six years (which will likely occur, for the reasons set forth above), the cost of the Project can be expected to increase by roughly \$50 to \$100 million or more, which would exceed KRRC’s available funding by a significant margin. Notably, KRRC does not have adequate funding to accommodate **any** delay; for this reason alone, its Transfer Application should be denied.

Furthermore, as described below with respect to risk management, it appears that KRRC has not appropriately attributed costs to various risks. As such, it is likely that cost overruns will occur. Indeed, it is well documented that, with respect to large scale infrastructure projects, cost overruns are the rule rather than the exception. In recent years, large projects across asset classes typically experience cost overruns of 80 percent above original estimates. See R. Agarwal et al., *Imagining construction’s digital future*, June 2016, available at <https://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/imagining-constructions-digital-future>. Likewise, with respect to dam projects specifically, recent studies have found that roughly 75% of projects experience cost overruns, with the average increase as high as 96% of the original cost estimate. See S. Lewis, *Study finds big cost overruns on global dam megaprojects*, March 2014, available at <https://www.enr.com/articles/2394-study-finds-big-cost-overruns-on-global-dam-megaprojects?v=preview>. Thus, given that costs are likely underestimated, and that the timeline is likely overly aggressive (due to, among other things, NEPA processes, ESA permitting approvals, etc.), KRRC’s current funding for the Project is inadequate.

The Commission has determined it “require[s] a detailed explanation of how [KRRC] would provide or obtain the funds necessary to decommission and remove the Lower Klamath Project in the event that funds equal to or greater than the maximum cost estimate for the full removal alternative are required.” *PacifiCorp*, 162 FERC ¶ 61,236 at ¶ 65. Yet, the Definite Plan does not adequately address potential delays or cost overruns. The Design Contingency is estimated at 10%, and the Construction Contingency is estimated at 20%. Definite Plan at 302. Given that large scale projects typically experience cost overruns of approximately 80-90%, KRRC’s proposal is insufficient. Moreover, the only mechanism for addressing cost overruns beyond those contemplated by the Design and Construction Contingency is a meet and confer process through which additional funding sources will be identified and pursued. *E.g.*, Definite Plan Cover Letter, Ex. B (Funding Agreement) at 19. This wholly fails to satisfy the Commission’s requirement that KRRC explain how it would obtain additional funding, if necessary.

Finally, the Definite Plan fails to provide adequate funds to address many of the concerns that the County has repeatedly voiced regarding the Project. These concerns include: (1) inadequate funding to compensate the County for the lost revenue stream resulting from a

decrease in property tax revenue; (2) inadequate funding to compensate for Project impacts, including land subsidence, increase of dust in the Project area, and road and bridge improvements; (3) inadequate funding for long-term power replacement stemming from the loss of power generated by the dams; and (4) inadequate funding to compensate landowners for the loss of property/value. KRRC's failure to secure (or even address) funding for these concerns further demonstrates that it has inadequate funding for the Project.

In sum, because KRRC has inadequate funds, including an inadequate contingency plan, to address Project delays or cost overruns, KRRC lacks sufficient funding to carry out the Project. For this reason, the Commission should deny the Transfer Application.

3. The Definite Plan Does Not Adequately Manage Risk.

The Definite Plan's proposed risk management plan is deficient in many respects, including because (1) many components of the plan are uncertain or unknown and (2) many risks are not appropriately characterized in the risk register. For example, the County has identified the following concerns with the proposed risk management plan:

- The Project Insurance Program, which will be an owner-controlled insurance program ("OCIP"), will not be in place until removal work is ready to commence. As such, the precise terms and scope of the insurance program are unknown. This is problematic, as there are no policies and/or precise coverage terms available to review. At a minimum, the Commission should require KRRC to name the County as an additionally insured party under the forthcoming insurance program.
- The Project itself does not appear to have been properly vetted by the industry. The risk management plan states that "risk workshops" will take place at various points throughout the permitting and compliance process, including after the Board of Consultants reviews the Definite Plan. This suggests that, at this time, the industry has not yet reviewed and/or provided input on the proposed Project cost and scope. This seems to deviate from standard industry practice, which would typically involve holding an industry forum early in the process to make sure that a Project proposal is viable. Here, it is unclear whether such industry outreach has occurred. This means that the Project likely includes risks that the industry will find unacceptable. Furthermore, this suggests that the timeline and costs proposed by KRRC are understated and unrealistic.
- The risk register does not appropriately characterize the risks associated with the Project, and does not provide sufficient detail regarding the costs associated with each risk. Of the 103 risks identified, there are zero that are considered to have a 60% or higher probability of occurring. There are only three that have a probability of 40-59% probability of occurring. This seems to inaccurately characterize the likelihood that various risks will occur. For example, Risk No. 35, "Release of hazardous material (other than from construction equipment) to river during construction," is considered "very unlikely" to occur. Given the uncertainties associated with the sediment testing and modeling that has been performed to date, it is apparent that KRRC has downplayed the likelihood of this risk, among others, to a significant degree.

For additional deficiencies in the risk management plan, please see the Technical Memorandum attached hereto as Exhibit 1.

4. The Definite Plan Misconstrues Preemption.

The Definite Plan states that KRRC does not intend to comply with many state and local laws, including California Fish and Game Code sections 1602 and 2081, because they are preempted by FERC's authority under the Federal Power Act. Definite Plan at 38-39. This approach is unacceptable for a number of reasons. To begin with, KRRC as the applicant is not in a position to invoke preemption. The decision whether to do so lies with FERC. And FERC has made it clear that the Project should comply with all practicable state and local legal requirements.

In addition, because the State of California is a party to the Amended Klamath Hydroelectric Settlement Agreement ("KHSA"), KRRC is carrying out that agreement, KRRC officers and board members are appointed by the Governor, and KRRC is reliant on state funding to carry out the proposed action, KRRC is functioning as an arm of the state and engaging in self-governance. As such, its activities are not subject to preemption. See, e.g., *Friends of the Eel River v. N. Coast R.R. Auth.*, 399 P.3d 37 (Cal. 2017).

Further, it is well established that the Federal Power Act does not preempt state and local laws concerning proprietary water rights. Thus, because the County has used reservoir water for firefighting, recreation, and other municipal purposes, dam removal in effect involves a transfer of those proprietary water rights, which precludes preemption. See, e.g., *Cty. of Amador v. El Dorado Cty. Water Agency*, 76 Cal. App. 4th 931, 958 (Cal. 1999).

Finally, while the Federal Power Act occupies the field of hydropower licensing (except to the extent that proprietary water rights are at issue), nothing suggests that FERC's preemptive authority extends to hydropower facility decommissioning. Thus, because decommissioning has a different purpose than licensing, state and local permitting requirements are not preempted by federal law.

In sum, the determination regarding whether the Federal Power Act preempts the application of state law to the proposed action lies with FERC, not KRRC. And FERC has already clarified that KRRC must comply with state and local laws to the extent practicable. Therefore, the Definite Plan should be revised accordingly. Furthermore, the laws that KRRC seeks to circumvent protect, among other things, the critically endangered Lost River sucker and shortnose sucker. The Commission has, in past dam removal cases, and should in this case, require KRRC to obtain all local permits. See *Arizona Public Service Co.*, 109 FERC ¶ 61,036 (2004); *Wisconsin Electric Power Co.*, 94 FERC ¶ 61,038 (2001).

5. The Definite Plan Fails to Adequately Address Critical Aspects of the Project.

There are numerous other Project components that are inadequately addressed in the Definite Plan. Several of these are discussed below.

A. Aquatic Resources

The Definite Plan builds on the population data presented in the 2012 environmental impact statement/report (“EIS/R”) relating to spring and fall run Chinook salmon, Coho salmon, and steelhead. The discussion purports to set forth the most recent 10 years of available population abundance metrics. The County’s concerns include the following:

- Appendix I addresses dam removal benefits and effects on aquatic resources including fish, but it does not reference or describe the findings included in the final reports from expert panels on Chinook salmon, Coho salmon, steelhead, and other resident fish species. In particular, it does not acknowledge the substantial uncertainty associated with benefits of dam removal for salmonids described in the expert reports. By way of example, the report of the expert panel on Chinook salmon noted that the proposed action is likely to substantially increase the range and abundance of redband, which may increase predation of Chinook salmon, thereby reducing or canceling benefits of the proposed action for Chinook salmon. See Klamath River Expert Panel, Chinook Salmon, Addendum to Final Report at 18. This and other points raised are ignored in the Definite Plan.
- With respect to Lost River and shortnose suckers, KRRC proposes to translocate a minimum of 600 and a maximum of 3,000 fish to Tule Lake. Any remaining sucker populations within the reservoirs will be entirely lost due to dam removal. Given the imperiled status of these species, this proposal is inadequate. Furthermore, the KRRC claims that the lower Klamath sucker populations are not viable or self-supporting. This does not seem consistent with the apparent potential that there are in excess of 3,000 suckers in the lower Klamath reservoirs. There is a paucity of empirical research to confirm (or falsify) the claim that the lower Klamath populations are not viable. Furthermore, the County has been, and continues to be, extremely concerned with the State’s passage of AB 2640, which permits the California Department of Fish and Wildlife to authorize the take of suckers resulting from impacts associated with the Project. For further information regarding the County’s concerns, please see Exhibit 2, attached hereto.
- The 2012 EIS/R for the Project included a number of measures intended to protect aquatic resources. In the Definite Plan, KRRC indicates it intends to alter some of those measures and abandon others. For example, in the 2012 EIS/R, the Department of the Interior had proposed fall pulse flows to benefit Chinook and Coho salmon, but KRRC does not intend to provide such fall pulse flows. Appendix I at 93. Likewise, the 2012 EIS/R included a telemetry study, sucker salvage, and release into Upper Klamath Lake to benefit the Lost River and shortnose suckers. Appendix I at 122. But KRRC does not intend to implement these measures. Therefore, KRRC cannot rely on the 2012 EIS/R to establish compliance with CEQA and NEPA.
- With respect to spring run Chinook, the Definite Plan appears to concede that the Project will not, in fact, help spring run populations. Specifically, the only remaining spring run populations occur in the Salmon and Trinity rivers. Thus, KRRC acknowledges that “it is likely that some intervention [beyond the Project] will be

necessary to re-establish spring Chinook salmon populations in the Upper Klamath Basin.” Definite Plan at 226. This is noteworthy because spring run Chinook appear to be the most imperiled of the anadromous species that will be impacted by the Project, and KRRC effectively concedes that the Project alone will not benefit these populations.

For additional deficiencies in the proposed aquatic resources measures, please see the Technical Memorandum attached hereto as Exhibit 1.

B. Terrestrial Resources

KRRC’s proposed measures with respect to terrestrial resources are inadequate. Specifically, the County is concerned that KRRC does not intend to conduct field surveys to determine to what extent listed species will be impacted by the Project. KRRC should be required to conduct such surveys, as this is standard industry practice. In addition, the Definite Plan contains incorrect information regarding threatened and endangered species (presumably because it is based on the 2012 EIS/R, which is outdated). For example, the Humboldt Marten was listed in August 2018, yet the Definite Plan does not list it as a protected species, and does not include any protections for it. This is improper.

For additional details regarding these concerns and others relating to terrestrial resources, please see the Technical Memorandum attached hereto as Exhibit 1.

C. Road Improvements

While the Definite Plan proposes various improvements to address road impacts resulting from the Project, the proposed improvements are inadequate. For example, the County’s Public Works Department has expressed significant concern over the use of Copco Road and other access roads before, during, and after construction. Copco Road cannot withstand the transport of the heavy equipment that is needed for dam removal activities. KRRC should be required to perform a comprehensive assessment to determine what improvements will be needed prior to construction, and what repairs will be needed during/after construction. In addition, Copco Road will not be able to be used for heavy equipment access during the winter months, which will need to be (and currently is not) incorporated into KRRC’s timeline.

For additional details regarding the County’s concerns with respect to proposed road improvements, please see the Technical Memorandum attached hereto as Exhibit 1.

D. Yreka Water Supply

KRRC has proposed three options to replace the City of Yreka’s water supply pipeline. The County’s concerns with KRRC’s proposal are twofold. First, as KRRC acknowledges, the current pipeline is buried in the reservoir bed, and therefore concealed from view. Yet two of the three proposed replacement options involve a new aerial pipeline. As such, at least two of the proposed options are aesthetically inferior to current conditions. KRRC should be required to propose other alternatives that involve a pipeline that is concealed from view. Second, the County is concerned that KRRC ultimately gets to decide which replacement option to select. While KRRC states that it will consult with the City of Yreka, there remains the possibility that

KRRC, due to cost considerations, selects an option that is not acceptable to the City of Yreka. KRRC should be required to obtain concurrence from the City of Yreka before proceeding with a water supply pipeline replacement plan.

E. Recreation Facilities Removal and Draft Plan

Of the 12 recreation facilities currently owned by PacifiCorp within the Project area, KRRC proposes to remove at least nine of them in their entirety. The ultimate disposition of the other facilities is “uncertain.” The County’s concerns regarding KRRC’s proposed recreation plan include:

- KRRC emphasizes that the Project involves the transfer of approximately 8,000 acres of real property located in Klamath County and Siskiyou County to the States of Oregon and California, respectively. This fact, however, does not control the ultimate disposition of that land. While the Amended KHSA states that the acreage is “intended” to be used for “public interest purposes,” such as fish and wildlife habitat restoration and enhancement, public education, and public recreational access, there is no guarantee that the acreage will be used in this manner. For various reasons, including that the States will bear the cost of how the land is used, managed, and maintained, it is possible that the land will not be used as “intended” in the Amended KHSA.
- The draft recreation plan is fraught with uncertainty. KRRC has not identified future owners or operators for recreational facilities that could be retained, including Jenny Creek day use area/campground and Fall Creek day use area. See Definite Plan at 261-268. Furthermore, while KRRC has engaged in stakeholder outreach regarding recreational proposals, it does not appear to have made much progress selecting and/or incorporating the proposals into the Project. KRRC has identified various screening criteria that it will use to evaluate the proposals, including the criterion that the proposal be “implementable through available funding.” Thus, due to cost constraints, KRRC could opt to not include **any** of the recreational proposals within the Project scope. It currently appears that KRRC has only committed to providing one whitewater boating area and one access area for fishing. None of the other proposals are currently included within the Project scope, and nothing requires that they be included in the future.

For additional details regarding the County’s concerns with respect to the proposed recreation plan, please see the Technical Memorandum attached hereto as Exhibit 1.

F. Downstream Flood Control Improvements

A total of 34 “habitable structures” are located within the preliminary 100-year floodplain for current conditions between Iron Gate Dam and Humbug Creek. These structures will be subject to an increased risk of flooding following dam removal when compared to existing flood elevations. KRRC states that it will “work with the owners of these structures to move or elevate legally established structures, **where feasible.**” Definite Plan at 270 (emphasis added). The County’s concerns regarding this section are twofold. First, KRRC is not required to remedy flood control issues if it is not “feasible.” It is unclear how such a feasibility determination will be reached, and few details are offered regarding how moving or elevating the structures would occur. Second, KRRC downplays the on-the-ground impacts to the people who reside in the

homes within the newly created floodplain, opting to dehumanize them and characterize their residences as “habitable structures.” Among other things, an increased risk of flooding could impact property values and strain the County’s flood control resources. None of these issues are discussed or addressed.

G. Fish Hatchery Plan

KRRC proposes to upgrade and fund the operations of the Iron Gate fish hatchery and Fall Creek fish hatchery for a period of eight years following dam decommissioning. Notably, the hatcheries will cease operations and be decommissioned after eight years. This approach is problematic. The fisheries have supplemented the Coho, Chinook and steelhead populations for over half a century. The impact of shutting down the fisheries does not appear to be well understood and is not discussed or addressed in the Definite Plan.

For additional details regarding the County’s concerns with respect to the proposed fish hatchery plan, please see the Technical Memorandum attached hereto as Exhibit 1.

H. Cultural Resources Plan

The Definite Plan states that the Klamath River Hydroelectric Project District (“District”) is eligible to be listed on the National Registry of Historic Places (“NRHP”) for its association with the industrial and economic development of southern Oregon and northern California, but that the California and Oregon State Historic Preservation Offices (“SHPOs”) have not concurred with this eligibility recommendation. Appendix L at 16. Concurrence from the SHPOs, and the ultimate status of the District, should be ascertained before dam removal activities commence. In addition, pursuant to section 106 of the National Historic Preservation Act (“NHPA”), KRRC must consult with the SHPOs, tribal historic preservation offices, and other interested parties, to identify historic properties (as defined under section 301 of the NHPA), assess whether and how these properties may be affected by the Project, and formulate a plan to avoid, mitigate, or resolve any adverse effects to cultural and historic sites and resources.

The Definite Plan further states that the NRHP evaluation of traditional cultural properties, sensitive cultural resources, and traditional cultural riverscape was not formalized through consultation with the California and Oregon SHPOs and associated federal agencies, and remains a task for implementation under the Project. Appendix L at 16. This task should be completed well before dam removal activities commence.

For additional details regarding the County’s concerns with respect to the proposed cultural resources plan, please see the Technical Memorandum attached hereto as Exhibit 1.

I. Water Quality Monitoring Plan

Water quality monitoring is currently occurring through the KHSA’s Interim Measure 15, which requires PacifiCorp to perform monitoring from Upper Klamath Lake to the Klamath River estuary at the Pacific Ocean. Water quality monitoring will continue (although will be modified slightly) until the States of Oregon and California are satisfied that certain water quality standards have been met or three years post-construction, whichever occurs first. The County’s concerns with the proposed approach are twofold. First, it is problematic that water quality

monitoring will occur at a maximum for three years post-construction. If further water quality monitoring is needed, there is no mechanism for such monitoring to take place. Second, KRRC cites to various studies to support its conclusion that reservoir sediments in each reservoir are suitable for unconfined, aquatic disposal and that contamination risks from reservoir sediment are unlikely and/or are either lower than with the dams still in place and/or lower than background levels. KRRC ignores, however, that the studies that support this conclusion were performed with inadequate models, and that deeper sediment sampling is needed to better understand the nature of the reservoir sediments.

For additional details regarding the County's concerns with respect to the proposed water quality monitoring plan, please see the Technical Memorandum attached hereto as Exhibit 1, as well as the letters attached hereto as Exhibits 3 and 4, which the County submitted to the California State Water Resources Control Board and the Oregon Department of Environmental Quality in connection with the draft water quality certifications for the Project.

J. Fire Management Plan

In July 2018, the County suffered the Klamathon Fire, which burned over 38,000 acres and destroyed over 82 structures within the County's borders. The Klamathon Fire demonstrates the importance of the local reservoirs not only for firefighting, but also to contain wildfires, preventing the fires from devastating even more of the County's lands. Currently, the proposed fire management plan is deficient in many respects, including because it fails to include a replacement source of water that can be used for aircraft firefighting activities.

For additional details regarding the County's concerns with respect to the proposed fire management plan, please see the Technical Memorandum attached hereto as Exhibit 1.

K. Traffic Management Plan

The current traffic management plan is inadequate to protect the region's citizens, including County residents, from significant disruption during Project implementation. The Definite Plan should be revised to identify, with specificity, best practices with respect to signage, traffic management systems, and dust control.

For additional details regarding the County's concerns with respect to the proposed traffic management plan, please see the Technical Memorandum attached hereto as Exhibit 1.

L. Groundwater Well Management Plan

The Definite Plan's approach to groundwater wells is of particular concern to County citizens that reside near the Copco dams. As drafted, the proposed groundwater well management plan falls short of providing these residents with adequate protections for their groundwater supplies. Among other things, the County requests that: (1) field study results be augmented with groundwater modeling to predict the reservoir drawdown effects on the aquifers within the target area, (2) the impact of the reservoir drawdown on groundwater-fed streams within the target be addressed, as these streams support irrigation and presumably an aquatic ecosystem, and (3) the numerous other springs (besides the spring mentioned near Copco Lake) be catalogued and monitored.

6. CONCLUSION

For the foregoing reasons, the County encourages the Commission to deny PacifiCorp and KRRC's Transfer Application. Please do not hesitate to contact us with questions.

Sincerely,

A handwritten signature in blue ink that reads "Ashley Remillard". The signature is written in a cursive style with a large initial 'A'.

Ashley J. Remillard
Nossaman LLP

AJR:



TECHNICAL MEMORANDUM

November 2, 2018

Natalie Reed
County of Siskiyou
P.O. Box 659
Yreka, CA 96097

Re: Review and Comment on the Definite Plan for the Lower Klamath Project

DEFINITE PLAN

The Definite Plan provides the general overview of the proposed Project (Project). SWCA's specific comments on the Definite Plan are provided below and organized by appendix, chapter, and section.

APPENDIX A: RISK MANAGEMENT PLAN

The Risk Management Plan provides an analysis of the foreseeable risks associated with the Project and describes risk factors, insurance and bonding, strategy for procurement and contracting, and includes a Design and Construction Risk Register which describes perceived risk, the probability of occurrence, and the Overall Risk Rating.

Attachment A. Design and Construction Risk Register. Based on the dam removal experience of SWCA staff, the following risk evaluations appear flawed with respect to the probability of risk and the overall risk rating.

- **Risk 32 - Copco Lake reservoir rim or local slope failure along access roads.** The probability of risk is assessed as low (10–19 percent [%]). However, the impact and probability of slope failure along the access roads should be higher, thus increasing risk weight. Also, the overall rating should be higher than “medium” based on observations of the Condit Dam Decommissioning and Removal Project (PacifiCorp 2012).
- **Risk 41 - Unanticipated non-burial related cultural resources discovered during drawdown.** The risk is assessed as low. However, this risk should be assessed as high, because the area along the historic river channel is culturally rich. (PacifiCorp 2004).
- **Risk 43 - Unanticipated human burial sites discovered during drawdown.** The probability of only 10–19% risk of uncovering human burial sites is not accurate, given the known numbers of burial sites. There is also a substantial chance that there are unknown burial sites that could be discovered during drawdown. (PacifiCorp 2004), For example, an unknown burial site was uncovered at the Tulana Farm Restoration Project at the mouth of the Williamson River in 1998 after a period of high wind and heavy wave action exposed a burial site on the shore of Upper Klamath Lake (F. Shrier, pers. comm. 2018).
- **Risk 45 - Reservoir drawdown impacts water quality more severely than anticipated causing project shutdown.** The assessed overall risk rating of “medium” is not accurate, given the 1.2–2.9 metric tons of sediment present in the reservoirs. The Condit Dam Removal Project (PacifiCorp 2012) and the Marmot Dam

Removal Project (Major, et al. 2012) released a fraction of the projected sediment loads on the Klamath River, but the water quality impacts persisted for months after the initial breach.

- **Risk 46 - Reservoir drawdown results in greater than anticipated erosion at bridges or along channel creating passage barriers.** Based on observations at the Condit Dam Decommissioning and Removal Project, the assessed overall risk of “low” is not accurate for bridges or channel erosion, since both occurred after reservoir drawdown for the Condit Dam. (PacifiCorp 2012). Channel erosion continued along the White Salmon River for more than a year after drawdown, causing the need to stabilize the slopes adjacent to the Northwestern Lake Bridge supports (PacifiCorp 2012). As noted in Appendix K (Road and Bridge Structure Data and Long-Term Improvements) some bridges may require replacement after reservoir drawdown. This indicates that the risk rating should be higher.
- **Risk 48 - Reservoir dewatering and subsequent operations have greater than anticipated effect on groundwater wells.** A probability of 10-19% and an overall rating of “low” is unrealistic and shows an unwillingness to appreciate the true risk.
- **Risk 69 - Limited recovery of fish species of concern.** A risk probability of “unlikely” and an overall rating of “low” is not adequate given the environmental issues identified in Appendix I (Aquatic Resources) and Appendix M (Water Quality Management Plan). The severity of potential impacts to all aquatic species and the overall risk rating should be “high.”

APPENDIX D: DAM STABILITY ANALYSES

Appendix D is a technical memorandum containing a dam stability analysis for the J.C. Boyle Dam and Iron Gate Dam prepared by AECOM staff in June 2018. Based on the technical memorandum, the Klamath River Renewal Corporation (KRRRC) developed a drawdown plan, which is set forth in Chapter 4 of the Definite Plan. AECOM's recommendations are set forth below, as well as SWCA's concerns regarding the recommendations and the ultimate drawdown plan.

AECOM recommendations

1. Based on the analyses, reservoir drawdown could be as high as 10 feet per day. However, AECOM recommends that reservoir drawdown be 5 feet per day, except as noted for J.C. Boyle Dam below. Appendix D at 8.
2. It is our understanding that the demolition of J.C. Boyle Dam includes removal of concrete stoplogs within two diversion culverts. The removal of the concrete stoplogs (likely by blasting) will result in drawdown of approximately 10 feet for the first culvert and 8 feet for the second culvert within less than 24 hours. Although we conclude that the J.C. Boyle Dam will perform satisfactorily under these rapid drawdown conditions, AECOM recommends a hold period of one week be implemented between removal of the stoplogs from the first culvert until the stoplogs from the second culvert are removed to allow for pore pressure dissipation. *Id.*
3. The analysis results indicate that no slope instability would result during reservoir drawdown. However, there is a potential for shallow slumping along the upstream embankment slopes due to the potential strength loss of surficial materials during the drawdown. Therefore, AECOM recommends frequent visual inspection during the reservoir drawdown process. If any shallow slumping is observed, riprap can be placed to provide additional resistance. *Id.*

4. AECOM recommends that instrumentation be installed to monitor the upstream slopes during reservoir drawdown for dam removal. The types of recommended instrumentation include survey monuments, inclinometers, and piezometers. Daily readings are recommended to closely monitor if there are any unanticipated slope movements or pore pressure accumulation. AECOM recommends that the instrumentation be installed the year prior to reservoir drawdown. The piezometers would be monitored during reservoir drawdown to confirm that the transient phreatic surface within the upstream shell of the dam falls as the reservoir elevation drops. *Id.*

Concerns regarding drawdown plan

- While the Klamath River Renewal Corporation (KRRRC) has adopted recommendation #2, above, the values given for the amount of water leaving J.C. Boyle Reservoir are provided in cubic feet per second. Definite Plan at 106. This should be revised to reflect the cubic feet per day standard that is used in other parts of the analysis.
- As a precautionary measure, dump trucks loaded with riprap should be onsite at the Iron Gate and J.C. Boyle Dams in case shallow slumping is observed.

APPENDIX E: RESERVOIR RIM STABILITY ANALYSES

Chapter 2. J.C. Boyle Reservoir. For J.C. Boyle Dam, KRRRC concluded that “deep-seated large landslides are less likely.” Appendix E at 16. Therefore, stability analyses for the rim of J.C. Boyle Reservoir are deemed not required to support the preliminary design. *Id.* This is improper; such analyses should be required.

Chapter 3. Copco No. 1 Reservoir. During rapid drawdown, the stabilizing effect of the Copco Dam Reservoir on the slope is absent but the pore water pressures within the slope remains high in materials with low permeability. *Id.* at 34. The high pore pressures in combination with the lack of the stabilizing effect from the reservoir can lead to significantly reduced slope stability. *Id.* However, in Table 3.6, the stability analyses for 17 of the 24 segments are listed as “In Progress.” A complete reservoir rim stability analysis is essential to evaluate environmental impacts of the project, especially at Copco Reservoir, where there is an existing population and infrastructure. This analysis should be performed.

3.4.5 Future Analysis and Investigations.

- Referring to Table 3.6, the report provides:

While the analyses discussed above are still preliminary, the results indicate that certain areas or segments may have the potential for slope instability as a result of the project activities. Some of these segments are below the current reservoir water surface, and slope failures within these segments would not impact existing roads or private property/structures. KRRRC does not propose additional field investigations for these segments.

Id. at 38. If there are known areas of potential slope instability, KRRRC should conduct further analysis to ensure the safety of residents and infrastructure. The conclusion presented is counterintuitive in suggesting that despite the potential for slope instability, there will be no impact.

- KRRRC also concludes that:

Some larger deeper slides are also possible within Copco No. 2 reservoir where submerged higher bluffs exist along the original Klamath River channel. These shallow slides and potential slides along the river channel pose no threat to roads or private property; however, KRRC will monitor these areas during and post-drawdown to assess any potential impact to existing cultural resources.

Id. This paragraph mentions “larger deeper slides” but then refers to “shallow slides.” Again, the conclusion that roads or property will not be affected is not supported by the facts presented. KRRC should explain why the larger slides and shallow slides pose no threat to roads or property.

- KRRC acknowledges that about 3,700 feet of slopes along Copco Road, and about 2,800 feet of slopes adjacent to personal property, may be at risk due to slope failures, including up to 8 parcels with existing habitable structures. *Id.* at 38-39. KRRC states it will “consider” the following actions to offset potential impacts:
 1. For segments along Copco Road:
 - a) Re-align of road segment away from rim slope.
 - b) Engineer structural slope improvements (e.g. drilled shafts or other structural elements that could be installed to resist slope movement).
 2. For segments adjacent to property or structure:
 - a) Move structure or purchase property.
 - b) Engineer structural slope improvements (e.g. drilled shafts or other structural elements that could be installed to resist slope movement).

However, due to the severity of the potential impacts to homeowners, KRRC should commit to more than just “considering” these actions. KRRC should meet with the Siskiyou County Board and the affected Siskiyou County (County) residents to discuss potential compensation and mitigation for losses.

- The evaluation concludes that “based on the low permeability of the diatomite, changing the drawdown rate would have minimal impact on the rapid drawdown stability analysis results. Therefore, KRRC is not proposing to limit the drawdown rate for drawdown of Copco No. 1 Reservoir.” *Id.* at 39. However, this planned drawdown rate for the Copco No. 1 reservoir is inconsistent with the recommendation in the Appendix D, Dam Stability Assessment, which clearly states that the drawdown procedure for Iron Gate and J.C. Boyle dams should proceed cautiously and, at the very least, not exceed 5 feet per day. Appendix D at 8. An analysis supporting the differing drawdown rates across all four reservoirs should be provided.

APPENDIX F: RESERVOIR DRAWDOWN ANALYSIS

Chapter 2. J.C. Boyle Reservoir. KRRC states that the suspended sediment concentrations under the new proposed drawdown procedure are not expected to differ from those previously estimated in the U.S. Bureau of Reclamation’s 2012 Detailed Plan (about 0–8 mg/l). This assumption is likely inaccurate, given that observations of the Condit Dam Decommissioning and Removal Project (PacifiCorp Energy 2012) indicate suspended sediment concentrations exceeding 10,000 mg/l. Appendix F at 17. Page

Chapter 3. Copco 1 Reservoir. KRRC states that the sediment concentrations under the new proposed drawdown procedure are not expected to differ from those previously estimated in the U.S. Bureau of Reclamation’s 2012 Detailed Plan (about 0–200 mg/l). *Id.* at 72. However, it is more likely that suspended sediment concentrations will

exceed the 10,000 mg/l concentrations observed during the Condit Dam Removal (PacifiCorp 2012) since over 100 years of sediment has accumulated in the bottom of the reservoir. For example, the Marmot Dam Removal Project in Oregon, a much smaller project than the proposed Project, also produced suspended sediment concentrations exceeding 10,000 mg/l (Major et al. 2012).

Chapter 4. Iron Gate Reservoir. KRRC states that the sediment concentrations under the new proposed drawdown procedure are not expected to differ from those previously estimated in the U.S. Bureau of Reclamation's 2012 Detailed Plan (about 0–1,000 mg/l). Appendix F at 125. However, sediment concentrations are likely to exceed 10,000 mg/l (PacifiCorp Energy 2012; Major et al. 2012) because all four dams will be removed simultaneously and the Iron Gate Dam monitoring site will measure the sum total of suspended sediments from all four dam sites.

Chapter 5. Flood Frequency Analysis. The drawdown analysis also evaluates flood frequency at each project to illustrate the range of possible peak flows that could occur. However, there is no discussion of the graphs presented and whether the graphs illustrate peak flows after dam removal, during dam removal, or both.

Appendix E should provide greater explanation of the model output and the results under the best and worst water year scenarios.

APPENDIX H: RESERVOIR AREA MANAGEMENT PLAN

The 2018 Reservoir Area Management Plan is intended to replace the 2011 Plan. The 2018 Plan includes updated goals and objectives, new information learned from other dam removal and restoration projects completed since 2011, and project-related details and information not available in 2011.

The Restoration Plan proposes a 10-year restoration timeline which includes 1–2 years for preparation (seed collecting and propagation, invasive plant control, etc.) and five years for plant establishment and monitoring after dam removal. Appendix H at 50. Restoration actions detailed in the Plan include manual sediment removal and grading, enhancement of longitudinal connectivity and habitat quality of tributaries (including removal of fish passage barriers), development of floodplain features (wetlands, floodplain swales, and side channels), channel complexity/floodplain roughness with the addition of large wood habitat features, and revegetation. Sediment jetting with a barge-mounted water jet is proposed during reservoir drawdown to maximize sediment erosion at Copco 1 and Iron Gate Reservoirs, and to reconnect tributaries with the river channel, as needed. SWCA's concerns regarding the plan include the following:

5.5.1 Reservoir Drawdown Sediment Evacuation. KRRC will designate culturally sensitive areas to avoid during grading. Appendix H at 60. Additional surveys should be performed during drawdown to identify cultural resources that may have been previously covered by the reservoir.

5.5.2 Tributary Connectivity. KRRC will inventory barriers to volitional fish passage and rectify as many of these as funding allows. *Id.* at 61. This section should disclose how much funding is anticipated to be allocated for this purpose, and the typical cost for those activities.

5.5.6 Revegetation.

- KRRC should coordinate with the County's Agricultural Department regarding re-vegetation concerns, including with respect to the spread of noxious weeds as a result of dam removal. The County's Agricultural Department is responsible for noxious weed control and has concerns over spreading of seeds and plants through sediment release, and moving seeds outside of normal river banks during flood events. KRRC should address these concerns.
- Both temporary and permanent irrigation will be installed in the riparian bank zone. *Id.* at 80. The plan should address how long the irrigation will remain in place or what criteria would be used to evaluate removal.

Chapter 6. Monitoring and Adaptive Management. Monitoring will be performed using visual inspections, physical measurements, ground photo points, aerial photography, and LiDAR (sediment monitoring). The monitoring plans for sediment stabilization/evolution and volitional fish passage include protocols and indicators, but they lack performance criteria by which success or failure can be measured. *Id.* at 106-108. The plan should include such performance criteria.

APPENDIX I: AQUATIC RESOURCES MEASURES

2.2.1 Fisheries Benefits of Recent Dam Removals in the Pacific Northwest.

- KRRRC anticipates that the Project will replicate the benefits of other dam removal projects in the Pacific Northwest. However, studies of the benefits of other dam removal projects lack an evaluation of long term results that only several generations of salmon and steelhead returns can verify. Further, the river conditions at the other dam removal sites discussed in Chapter 2 of the Definite Plan are far superior to the existing conditions of the Klamath River. Superior riverine conditions at the other project locations include pH levels that are near neutral (versus 9.0 or higher on the Klamath River); normal to high dissolved oxygen levels; little to no irrigation withdrawals (Rogue River excepted); clear, cold water without uncontrolled algae blooms; and glacial or spring-fed flow that provides cool and consistent flow during the warm, dry months.
- The Klamath River, upstream of Keno Dam, will not support adult salmon and steelhead survival unless these adults are transported past Keno and Upper Klamath Lake to the Williamson and Sprague Rivers (Huntington et al. 2006). Unless very significant improvements are made to allow fish access and suitable habitat is restored, the chance for successful reintroduction is very low. In addition, success is even more unlikely without strains of salmon and steelhead that 1) can survive the warmer temperatures and poor water quality, 2) return to spawn when the best possible river conditions exist, and 3) outmigrate as juveniles from the upper watershed before river conditions reach lethal levels in the late spring (Huntington et al. 2006).

Section 2.2 Anticipated Project Benefits on the Klamath River Basin Aquatic Resources.

- This section states that Iron Gate Dam blocks access to the Upper Klamath River for three species of salmon, Pacific lamprey, and freshwater mussels. Mussels are not known to migrate upstream, so they should be removed from this statement.
- This section states that the Project will make miles of historic habitat accessible to anadromous salmonids and lamprey. Table 2-3 cites studies indicating that thousands of salmon and steelhead were historically produced in the upper Klamath River and its tributaries. However, the analysis overlooks two key elements of historical habitat:
 - 1) Lower Klamath Lake (which was filled and reclaimed by the US Bureau of Reclamation in the early 1900s) historically stored water from high flows, then released cool water during the rest of the year into the mainstem of the Klamath River, thus maintaining an environment that promoted rearing of juvenile salmon and allowed safe access for returning adults.
 - 2) The vast network of irrigation canals in the Upper Klamath River did not exist when the salmon and steelhead runs were prolific, so there is a large amount of water that no longer flows into the Klamath River. The irrigation return flows that occur now bring warmer water, suspended sediment, and a litany of agricultural chemicals that were not present in the historical habitat.

- This section mentions benefits to fall Chinook salmon only. The Definite Plan appears to concede that the Project will not in fact help spring run populations. Specifically, the only remaining spring run populations occur in the Salmon and Trinity rivers. Thus, KRRC acknowledges that “it is likely that some intervention [beyond the Project] will be necessary to re-establish spring Chinook salmon populations in the Upper Klamath Basin.” Definite Plan at 226. This is noteworthy because spring run Chinook appear to be the most imperiled of the anadromous species that will be impacted by the Project, and KRRC effectively concedes that the Project alone will not benefit these populations.
- This section does not reference or describe the findings included in the final reports from expert panels on Chinook salmon, coho salmon, steelhead, and other resident fish species. In particular, it does not acknowledge the substantial uncertainty associated with benefits of dam removal for salmonids described in the expert reports. By way of example, the report of the expert panel on Chinook salmon noted that the proposed action is likely to substantially increase the range and abundance of redband, which may increase predation of Chinook salmon, thereby reducing or canceling benefits of the proposed action for Chinook salmon. See Klamath River Expert Panel, Chinook Salmon, Addendum to Final Report at 18. This and other points raised are ignored in the Definite Plan.

2.2.2 Water Quality and Water Temperature. KRRC claims that the Project will result in improved water quality, but does not provide a citation that substantiates that claim. The citations provided only address water temperature. KRRC should provide a citation supporting the conclusion that the Project will result in improved water quality and provide a summary of the cited source.

2.2.3 Hydrograph. This section claims that after dam removal, the resulting flow will mimic the natural hydrograph. Unfortunately, the “natural hydrograph,” without a functioning Lower Klamath Lake and with extensive irrigation withdrawals, will likely have lower flows in the summer and early fall than the naturally occurring hydrograph prior to dam construction. The resulting lower flows and higher temperatures may create a barrier to adult fish migrating upstream. This issue should be addressed in the analysis.

2.2.4 Disease. With respect to fish disease, it is not clear that the benefits of the Project outweigh the potential risks.

- This section states that the project is expected to reduce disease impacts to adult and juvenile salmon related to *Ceratanova shasta* (*C. shasta*) and *Parvicapsula minibicornis*. Both of these pathogens are myxozoan parasites that share vertebrate and invertebrate hosts. This section anticipates that the Project will reduce disease by restoring natural channel-forming processes. However, the Definite Plan also states that the existing pools in the Klamath River downstream of Iron Gate Dam, will be filled in with cobble and silt, and that high flow events will eventually scour out the silt and some of the cobble, but the river will not likely return to pre-removal conditions. The existing deep pools harbor cooler water and act as refugia for migrating adults during the warmer months. Since the prevalence of infection is tied to warmer water and to crowded conditions for fish (i.e. with less cool water refugia, adults are likely to crowd into limited space), it seems more likely that disease issues will persist. In addition, *C. shasta* is prevalent in the creeks and rivers upstream of Upper Klamath Lake, so it will be difficult to control the persistence of myxozoans and eliminate the detrimental effects of infestation. (Huntington et al. 2006). At best, resistant strains of salmon and steelhead may eventually evolve, which could take a long time and countless generations before adaptation, if it were to occur at all, could come to fruition. (Huntington et al. 2006).
- Although the Project is expected to reduce fish disease because infected carcasses will be washed downstream, elevated flows may also redistribute the diseased spores throughout a longer reach of the Klamath River. The analysis should address this possibility.

2.3.1 Suspended Sediment Effects: This section anticipates that the Project will release 1.2–2.9 million metric tons of fine sediment downstream of Iron Gate Dam over a two year period. Appendix I at 31. This estimate is likely optimistic, since it assumes that much of the reservoir sediment will remain in place and stabilize. With projected suspended sediment concentrations initially exceeding 1,000 mg/l for weeks, KRRC acknowledges the negative impacts on aquatic organisms will be potentially lethal to salmon eggs and migrating adults, mussels, and lamprey adults and ammocoetes. The duration of high suspended sediment concentrations depends on how much reservoir sediment is initially flushed from each reservoir and the water year conditions that are exhibited during the dam removal year. Therefore, the adverse impacts could last for weeks, as this section projects, or they could persist for months, even years. Therefore, the suspended sediments analysis should also assess the worst-case-scenario and possible negative impacts that have been associated with other dam removal projects, such as Marmot Dam and Condit Dam, where more reservoir sediment flushed downstream through erosion and bank sloughing. (PacifiCorp Energy 2012).

2.3.2 Bedload Effects. The project is expected to initially release high amounts of sand. The proposed mitigation measure is to release flushing flows of 6,000 cubic feet per second (cfs) for days or even weeks. This is not realistic because 6,000 cfs exceeds the peak annual flow for 13 of the past 17 years. Depending on the water year, it may not be feasible to provide the proposed flushing flows. An alternative should be identified to compensate for sand deposition if adequate flows are not available to flush the sand downstream.

2.3.3 Dissolved Oxygen. With the release of reservoir sediments that are rich in organic matter, KRRC recognizes that there will be “depressed” levels of dissolved oxygen due microbial breakdown of the organic material in the sediment (known as biological oxygen demand [BOD] or chemical oxygen demand [COD]). This will make parts of the Klamath River uninhabitable for mobile species, and lethal for aquatic resources that are not mobile such as incubating eggs, freshwater mussels, lamprey ammocoetes, aquatic insects, etc. There should be a thorough analysis performed on the possible extent of BOD/COD and the resulting effects on the aquatic species in the project area.

2.4 Effects Analysis. KRRC should analyze the short- and long-term effects rather than rely on data compiled for the 2012 EIR/EIS. Given the uncertainty expressed over the effects of suspended sediment loads and low dissolved oxygen levels, and other concerns expressed in the comments above, the potentially catastrophic impacts to aquatic species should be analyzed thoroughly.

Chapter 3. Mainstem Spawning:

- KRRC proposes a new measure that is a revision of Aquatic Resources measure 1 from the 2012 EIS/R for mainstem spawning. KRRC has concluded that the updated measure is necessary to offset the short-term effects associated with dam removal on spawning Chinook and coho salmon, and upstream migration of adult steelhead and lamprey. The measure includes the following actions:
 - 1) Evaluate tributary-mainstem confluences in the eight-mile reach from Iron Gate Dam to Cottonwood Creek for two years. If a tributary blockage forms, then efforts will be implemented to remove the passage barrier(s).
 - 2) Evaluate spawning habitat of the hydroelectric reach (Iron Gate Dam to Keno Dam) and newly accessible tributaries. The action identifies a target are of 44,100 square yards of mainstem spawning gravel area and 4,700 square yards of tributary. If this area is not realized following dam removal, then gravel augmentation and retention efforts will be initiated.
- Action 1 is inadequate because there is no provision to extend monitoring efforts beyond two years. KRRC should be willing to include monitoring and corrective actions until the upstream former reservoir areas are deemed stable.

- With respect to Action 2, only measuring spawning area and supplying gravel to match that total area is inadequate because ideal spawning habitat conditions require more than just suitable gravel. The key elements selected for spawning by anadromous fish include depth of gravel, adequate flow over the surface of the redd and a suitable amount of intergravel flow or upwelling to maintain water quality conditions for incubating eggs and fry. It is possible that, despite efforts to supply 44,100 square yards of gravel, some or all adult salmon may completely bypass augmented gravel sites. It is also possible that even if adults use the augmented gravel sites, eggs or fry may not survive in those redds in the absence of other necessary conditions. The action should address all factors affecting spawning in the mainstem and tributaries, not just gravel supply.
- KRRC also acknowledges here that the Project will result in adverse impacts to approximately 179 tributary-spawning steelhead redds. Appendix I at 36.

The proposed augmentation of seven cubic yards per compensatory mainstem redd is identified as 21 square yards at a depth of one-foot. *Id.* at 39. Typical depths for adult spring Chinook range from 0.8 to 3.3 feet (Moyle 2002), so applying gravel at a depth of just one foot may not be adequate.

3.2 Summary of affected species, project benefits and effects, recent fisheries literature, the 2012 EIS/EIR, and the proposed measure.

- Species identified in the proposed measure (as identified in the 2012 EIS/R) include coho salmon, Chinook salmon (spring and fall run), steelhead (summer and winter run), and Pacific lamprey. Table 3.4 is included below and summarizes the effects on each species. KRRC anticipates that most adults and redds will be protected from the impacts of dam removal since coho salmon typically spawn in the tributaries. As some coho salmon spawn in the mainstem of the Klamath River, KRRC estimates a loss of about 13 redds or 0.7–26 percent of the coho salmon population. This constitutes “take” of the threatened population of coho salmon and their associated critical habitat, which would seem to require a jeopardy determination with respect to those fish under the federal and California ESAs.

Table 3-4 2012 EIS/R anticipated effects summary for migratory adult salmonids and Pacific lamprey

Species	Life Stage	Likely Effects	Worst Effects
Coho Salmon	Adult Spawning	Loss of 13 redds (0.7-26%) ¹	Loss of 13 redds (0.7-26%) ¹
Chinook Salmon - Fall	Adult Spawning	Loss of 2,100 redds (8%) ¹	Loss of 2,100 redds (8%) ¹
Steelhead - Summer	Migrating Adults	No anticipated mortality	Loss of 0-130 adults (0-9%) ¹
Steelhead - Winter	Migrating Adults	Loss of up to 1,008 adults (14%) ¹	Loss of up to 1,988 adults (28%) ¹
Pacific Lamprey	Adult Migration and Spawning	High mortality (36%) ²	High mortality (71%) ²

Source: USBR and CDFG 2012

¹ Range of potential year class loss based on the average number of redds associated with the evaluated population(s).

² The 2012 EIS/R predicted Pacific lamprey mortality based on mortality models developed for suspended sediment impacts to salmonids. Model output did not include the number of predicted Pacific lamprey mortalities.

- Suspended sediment is predicted to cause 100 percent mortality of fall Chinook salmon eggs and fry spawned prior to the reservoir drawdown. That amounts to approximately 2,100 redds based on past redd survey data. Female Chinook fecundity ranges from 4,900 to 5,500 eggs per female (Moyle 2000), so the projected loss (using

5,200 eggs as the median) is expected to be 10,920,000 eggs, about 5 million smolts (50 percent egg-to-smolt mortality) and about 50,000 adults (1 percent return) prior to in-river harvest and prespawn mortality. These mortality rates are assumed based on returns to other basins but most basins that have a mix of natural- and hatchery-produced Chinook salmon have survival rates that are similar to these within a very tight range. The physiological effects of high suspended sediment concentrations on salmon, steelhead and lamprey include stress and respiratory impairment, damaged gills, reduced tolerance to disease and toxicants, and direct mortality. The severity of these effects is influenced by the concentration and duration of suspended sediments, water temperature, water flow, and disease. KRRC assumes that the adverse effects of high suspended sediment concentrations following dam removal will be reduced by the species' tendency to avoid poor water quality conditions and adapt to migrate and spawn in areas other than the mainstem, citing an example from the Elwha Dam Removal Project where adult salmon that primarily spawned in a tributary moved into the mainstem to spawn in greater numbers in the years following dam removal. Appendix I at 49. However, this possibility rests on the assumption that enough alternative habitat with higher water quality conditions exists in tributaries downstream. While that may be the case on other rivers undergoing dam removal where the water quality conditions are superior to conditions in the Klamath River, the amount of suitable habitat in this instance is limited to a few tributaries that already have water quality issues related to flow and high temperature. It is likely that, although adults may survive the Klamath River conditions during the drawdown process, overcrowding into the remaining habitats will result in indirect population losses such as increased infection by pathogens, injuries and death related to competition for desirable spawning space, and reduced survival of eggs that are laid in less desirable locations or exposed by superimposition of redds.

- Juvenile salmon egg incubation for coho salmon is 8-12 weeks (Moyle 2002). If drawdown occurs between January and mid-March, increased turbidity will negatively affect redds in the mainstem. The most recent redd survey data for coho salmon was reported by Magnuson and Gough (2006), who found only 38 coho salmon redds in the mainstem Klamath River downstream of Iron Gate Dam between 2001 and 2005 in the reach from Hornbrook to Happy Camp. Coho redd distribution should be updated and referenced in the Definite Plan.
- Chinook redds seem to be at greater risk. Appendix I at 38. If high sedimentation and discharge is expected from drawdown, this could scour redds and/or fill in redds, effectively wiping out a substantial portion of Chinook redds in the mainstem. Lamprey ammocoetes can move downstream during high discharge if necessary (Grabowski 2010; USFWS 2010).
- When drawdown water is released, flows should be ramped down in a manner to prevent and reduce stranding of ammocoetes and fishes residing in the sediment downstream.

Chapter 4. Juvenile Outmigration. This chapter discusses planned trapping and hauling efforts for approximately 500 coho salmon juveniles before reservoir drawdown between Iron Gate Dam and the Trinity River, which is approximately 150 river miles. It proposes actions to relocate rescued fish to “constructed off-channel ponds,” monitor tributary-mainstem connectivity for two years, and monitor water quality in 13 tributaries (e.g., water temperature and mainstem suspended sediments). Appendix I at 53.

4.1.1 Action 1: Mainstem Salvage of Overwintering Juvenile Salmonids.

KRRC states that they will sample up to 15 sites in the approximately 150 river mile stretch between Iron Gate Dam and the Trinity River one year prior to reservoir drawdown. KRRC will then undertake an overwintering yearling coho salmon relocation effort in December prior to drawdown. KRRC expects to encounter less than 500 overwintering coho salmon juveniles, citing Hillemeier et al. 2009. Appendix I at 54. The 500 coho salmon estimate is not reasonable because Klamath River coho salmon fecundity is 1,400-3,000 eggs. The Hillemeier et al 2009 study only accounted for two years of information, with results differing between years (i.e., capture frequency increased in year 2). It is unclear how KRRC got this number from the study. Moreover, the study area was downstream of Iron Gate Dam. Thus, it is not reasonable to assume that the results accurately predict the

number of coho salmon that will actually be encountered. Therefore, the measure should explain the actions that will be taken if more than 500 coho salmon juveniles are encountered.

- Further, the coho salmon juveniles in December will be getting ready to smolt, and therefore will be larger fish and good swimmers. Juvenile salmon are adapted to find refugia from unfavorable conditions in the mainstem (e.g., increased flows and turbidity) and can seek out velocity refuges (Weber et al 2013), and it may not be advisable to trap and haul these fish.
- The Definite Plan should state how homing, imprinting, and straying will be affected by trap and haul efforts. Relocating fish to different streams and letting them volitionally complete smoltification potentially jeopardizes runs that returned to these different natal streams. If there are only 500 coho salmon juveniles expected to be rescued in the approximately 150-river mile reach between Iron Gate Dam and the Trinity River, this possibility is of serious concern.

4.2.2 Anticipated Project Effects on Measure Species.¹

- Table 4-2 sets forth substantial percentages of juvenile fish that will be harmed by the Project. These would seem to require a jeopardy determination with respect to those fish under the federal and California ESAs.
- The Definite Plan should include monitoring measures for sites upstream of Iron Gate Dam where volitional passage is supposed to create habitat and introduce salmon back into the reaches that have not had access for the past 100 years.

Chapter 5. Fall Pulse Flows. This chapter indicates that KRRC intends to abandon the 2012 EIS/R measure relating to fall pulse flows intended to benefit Chinook and Coho salmon. Appendix I at 93. Therefore, KRRC cannot rely on the 2012 EIS/R to establish compliance with NEPA and CEQA.

Chapter 6. Iron Gate Hatchery Management. The objective of the Iron Gate Hatchery Management measure is to address Project drawdown and the effects on hatchery Chinook and coho smolts that will be released from the hatchery during the spring of the reservoir drawdown when periods of high suspended sediment concentrations are expected. The 2012 EIS/R included two potential actions to reduce impacts to hatchery fish: delay the release of smolts until the sediment loads diminish, or transport the smolts downstream to reaches of the Klamath River less affected by the sediment loads. Appendix I at 105. KRRC selected the first option, to delay smolt releases, and to rely on water quality monitoring stations downstream of the hatchery to inform the California Department of Fish and Wildlife when it is safe to release the smolts.

- The Iron Gate Hatchery release numbers consist of 75,000 yearling coho salmon, 900,000 yearling fall Chinook salmon, and 5.1 million fall Chinook salmon smolts. Since the Detailed Plan recognizes that releasing these fish during the drawdown would be lethal due to the high suspended sediment concentrations and low dissolved oxygen, the Definite Plan proposal is to delay smolt and yearling releases to a “limited extent.” Appendix I at 107. This plan fails to consider that the water supply, which currently comes from Iron Gate Reservoir, will not be suitable during the smolt and yearling releases. Alternative water may or may not be available from Bogus Creek, but that seems to be the only reasonable source identified. The Definite Plan should consider Bogus Creek, or other available sources, as a potential replacement of the Iron Gate Reservoir water supply to the hatchery, rather than just note the uncertainty of the future source. The future source of the water supply is critical to the operation of the hatchery.

¹ The phrase “Measure Species” is unclear. See also Section 8.2.2. We suggest revising this to clarify intent (e.g., protected species).

- The proposal to delay hatchery fish releases also assumes that water quality will be sufficient for fish releases in time for the smolts to be released before they reverse smolting and switch to residential mode, which is a very stressful process that often results in coho salmon mortality.
- In light of these concerns, KRRC should thoroughly analyze and/or model the full range of potential water quality conditions to determine this strategy's chance of success.

Chapter 7: Pacific Lamprey Ammocoetes.

- KRRC has abandoned the measure in the 2012 EIS/R designed to reduce impacts to Pacific lamprey. There is no management plan to salvage lamprey ammocoetes because KRRC determined that impacts would be minimal. Appendix I at 112. The Definite Plan states that there is low abundance in the downstream reach from Iron Gate Dam to the Scott River. *Id.* at 114. This decision was also influenced by low site fidelity and lack of genetic diversity. *Id.* at 115.
- Given that the Project is expected to result in high mortality for Pacific lamprey ammocoetes and that the lamprey is an important cultural resource for tribes, a more extensive analysis is warranted. In particular, the plan should consider flow management to reduce the potential for stranding lamprey ammocoetes and other fishes nearing the completion of drawdown.
- It should be acknowledged that lamprey ammocoetes are not sessile and are capable of relocating. (USFWS 2010).

Chapter 8. Suckers. KRRC completed studies to determine the abundance and genetics of Lost River and shortnose suckers in the Klamath Basin. Reservoirs and stream sections will be sampled. PIT tagging will be implemented during the studies prior to dam removal. River sampling will be conducted in 2019 and 2020, and reservoir sampling will be conducted in 2018 and 2019. KRRC proposes to rescue and relocate 100 adult Lost River suckers and 100 shortnose suckers from each reservoir for a total of 600 fishes. Appendix I at 119. SWCA's concerns are set forth below.

- The measure indicates that no more than 3,000 fish will be relocated. *Id.* at 120. Therefore, any remaining sucker populations within the reservoirs will be entirely lost due to dam removal. Given the imperiled status of these species, this proposal is inadequate.

8.1.2 Action 2: Sucker Salvage and Relocation. Rescued suckers will be relocated to isolated waterbodies to "ensure hybridized suckers do not mix with sucker populations designated as recovery populations in Upper Klamath Lake." However, hybridization of suckers was common from captured juvenile suckers in Upper Klamath Lake. (Burdick et al 2015). Hybridization is thought to occur between the different Klamath River suckers. Results from genetic analysis should be used to determine if fish should be relocated to Tule Lake as proposed.

- Additionally, in 2010, suckers were removed from Tule Lake and relocated to Upper Klamath Lake due to concerns over Tule Lake water levels. (Courtner, Vaughan, and Duery 2010). Tule Lake is the target receiving water for these relocated fish from the Klamath River reservoirs. If dry conditions exist during the rescue, this would pose the same risk of relocated fish dying due to water conditions in Tule Lake. This measure would also indicate that in the future, suckers should not be salvaged in Tule Lake and relocated to Upper Klamath Lake, even though this action was already taken in 2010. There is no evidence that Klamath small-scale suckers are present in Tule Lake. If this is the case, then the introduction of "hybrids" rescued from the Project reservoirs potentially jeopardizes the population of suckers in Tule Lake.
- Endangered Species Act regulations for protection of hybrids is somewhat unclear. The Intercross Policy, while not formally adopted or redacted, provides the U.S. Fish and Wildlife Service and National Marine Fishery Service flexibility in dealing with hybridized animals (Frey 2015). The Definite Plan states that "the proposed relocation of rescued suckers to isolated waterbodies is to ensure hybridized suckers do not mix with sucker populations designated as recovery populations in Upper Klamath Lake." In other words, the

introduction of “hybridized” suckers that are said to be partly Klamath small-scale suckers into Tule Lake would preserve the recovery population of the Lost River sucker and shortnose suckers in Upper Klamath Lake. However, this contradicts actions taken in 2010 by the Bureau of Reclamation when “hybridized” suckers from Tule Lake were introduced into Upper Klamath Lake. Appendix I at 119.

8.2.2. Anticipated Project Effects on Measure Species. This section claims that the lower Klamath sucker populations are not viable or self-supporting. *Id.* at 122. This does not seem consistent with the apparent potential that there are in excess of 3,000 suckers in the lower Klamath reservoirs. *See id.* at 120. There is a paucity of empirical research to confirm (or falsify) the claim that the lower Klamath populations are not viable.

- Further, the anticipated loss of Lost River and shortnose suckers reservoir populations disclosed in Table 8-1 should be considered “take” under the Endangered Species Act. The State of California has chosen to view the fish located in the Project reservoirs as a different population that is not covered by Endangered Species Act. The lower reservoir fish are a segment of the whole population that left the upper watershed to colonize downstream. There is no provision in the Endangered Species Act to make a separation.

8.2.4 KRRC’s and the ATWG’s Review of AR-6 for Feasibility and Appropriateness. The 2012 EIS/R included a telemetry study, sucker salvage, and release into Upper Klamath Lake to benefit the Lost River and shortnose suckers. Appendix I at 122. But KRRC does not intend to implement these measures. *Id.* at 123-125. Therefore, KRRC cannot rely on the 2012 EIS/R to establish compliance with CEQA and NEPA.

Chapter 9. Freshwater Mussels. The Definite Plan will address salvage and relocation of freshwater mussels. As stated in the Definite Plan, mortality of translocated mussels is fairly high (Cope and Waller 1995). Appendix I at 133. There is insufficient data addressing how mussels will respond to drawdown. The Definite Plan states that “more consideration must be given to habitat characterization at both the source and translocation sites.” *Id.* Data is not yet available from the pilot project to investigate key factors important for survival. Therefore, the consideration of impacts to freshwater mussels and potential mitigation measures is inadequate, and more information on impacts to freshwater mussels is needed before proceeding with the Project.

APPENDIX J: TERRESTRIAL RESOURCES MEASURES

Appendix J only considers a few threatened and endangered species that may be impacted by the Project. Since the findings in the 2012 EIR/EIS, other species that may be impacted by the Project have been listed under the federal and California ESAs.

- KRRC should reevaluate the list of threatened, endangered, and special status species on the federal, state, and local level, and perform the baseline studies/habitat surveys for the species in order to adequately evaluate the impacts of the Project.
- For example, the Humboldt Marten (*Martes caurina humboldtensis*) was listed as endangered under the California Endangered Species Act by the California Department of Fish and Wildlife (CDFW) in August 2018. Based on a desktop literature search, we have found that since the biological surveys were completed in 2002–2004, additional studies on habitat, range and population have occurred for the Humboldt Marten. *See* the Arcata Fish and Wildlife Office Report, *Species Assessment for the Humboldt Marten (Martes Americana humboldtensis)* (Hamlin et al 2010). (<https://www.fws.gov/arcata/es/mammals/HumboldtMarten/documents/Humboldt%20Marten%20Species%20Assessment%20Sep2010.pdf>). To adequately evaluate the impacts to this species, the KRRC should conduct an approved protocol level survey within and surrounding (within the recommended buffer) prior to the release of the CEQA/NEPA documents.

- Much of the evaluation on terrestrial species in the Definite Plan is based on information from the 2012 EIR/EIS. Much of that data was obtained prior to 2012 and is therefore outdated by scientific standards. The analysis should be based on updated studies, surveys, and literature.
- KRRC should undertake pre-construction surveys within the project area for all threatened, endangered, or special status federal, state, and local species. Due to the time lag between surveys and field studies occurring at this time (for the Definite Plan), and future construction, species may move into previously unoccupied areas. Therefore, pre-construction surveys should be added to the avoidance and minimization measures for all species mentioned in Appendix J.

Chapter 1. Northern Spotted Owl (“NSO”) Measures. The Definite Plan states that a “desktop evaluation” was used to determine whether NSO activity centers exist within the Project area. Appendix J at 11. This is not a reliable method to make such a determination. It is also premature for KRRC to conclude that “the Project will not result in NSO habitat modification” until sufficient field studies have been conducted within and surrounding the disturbance areas. *Id.* at 14. Field surveys should also be conducted during breeding seasons to identify breeding and nesting sites.

Chapter 2. Bald Eagle and Golden Eagle Measures. The surveys that the Definite Plan proposes are too narrow in scope. Specifically, KRRC proposes limiting surveys to viewshed areas within 0.5 mile of the limits of work. *Id.* at 23. Surveys should be conducted beyond the 0.5-mile radius, including up to two miles, to identify eagle activity centers in those areas so as to enable KRRC to develop avoidance or mitigation measures to protect the species. In addition, KRRC notes that, “as there is high potential that bald eagles had already fledged prior to the survey date, some active nests may have been missed, especially if eagles used alternate or unknown nests.” *Id.* at 25. Therefore, additional field surveys should be conducted to determine whether additional active nests exist within the disturbance and potential disturbance areas. Lastly, the area within two miles of the J.C. Boyle, Iron Gate and Copco Reservoirs were not surveyed. No scientific explanation is provided for why these areas were not surveyed. *Id.* at 28.

Chapter 3. Special Status Wildlife Species Measures. The data relied upon to develop special status wildlife species measures are from 2001-2003 and highly outdated. *Id.* at 31. Additional surveys should be conducted to determine if other special species occurrences exist within the relevant areas.

- Further, KRRC’s 2018 general wildlife survey area, which is limited to within 0.25 miles of the dams and structures to be removed, should be expanded. *Id.* at 32. This survey area does not include downstream impacts, which will be significant, especially for species that utilize emergent wetlands and riparian areas. There are wetland and riparian areas that will be altered by changing water flows and sedimentation. These areas are currently not evaluated in the survey area, and therefore cannot be adequately evaluated for impacts.
- Amphibians and reptile surveys should be conducted not only within the current survey area, but also downstream. The downstream survey area should include all areas of the river that will be impacted by changes in water flow and sedimentation depositions. Sediment load and changes in the hydrology will change the streambank and emergent wetland areas. These areas need baseline data on the species that currently occupy, or could occupy this habitat, in order to adequately evaluate impacts of the Project.
- Some of the proposed avoidance and minimization measures do not appear consistent with best species management practices. For example, KRRC proposes placing traffic cones or other exclusionary devices in nests or on net platforms to prevent nesting in the year of construction. *Id.* at 37. Such deterrence activities may also deter the birds from returning in future years, which would therefore disrupt the birds’ nesting habits long-term. In addition, the Definite Plan does not include adequate protections for four wildlife species that are protected by the California ESA (“CESA”). The tricolored blackbird and willow flycatcher are both listed under CESA. *Id.* at 36. And the Cascades frog and foothill yellow-legged frog are both candidates for listing under CESA. *Id.* at 35. As described above, KRRC does not intend to comply with the provisions of CESA on the grounds that it is preempted and, therefore, is intending to harm these species without undertaking a jeopardy determination and fully mitigating the harm as state law requires.

Chapter 4. Bats Measures. KRRC's surveying efforts appear inadequate. Surveys have been canceled, and others are uncertain. *Id.* at 64. KRRC should commit to performing adequate surveys to determine the impact of the Project on the relevant bat species. KRRC's obligations with respect to implementation of the bat measures are also subject to a determination of "feasibility." Appendix J at 66. Few details are provided with respect to how KRRC will make such a determination.

Chapter 5. Special Status Plants Measures. KRRC's proposed remedial measures appear inadequate. Specifically, if special status plants cannot be avoided during construction, KRRC intends to evaluate the potential for seed collection and propagation at local nurseries for replanting and/or as part of a seed mix to be used during restoration activities. Appendix J at 76. It is unclear whether these are viable options, or whether the harm to the special status species will be significant.

Chapter 6. Vegetation Communities and Wetlands Measures. The Definite Plan does not appear to set forth avoidance, mitigation, and offset measures to mitigate the potential effects of the Project on, among other things, wetland habitat used by migratory birds.

APPENDIX K: ROAD AND BRIDGE STRUCTURE DATA AND LONG-TERM IMPROVEMENTS

Page 1: Copco Road from Ager Road to Daggett Road is noted to be in poor condition; however, no upgrades to the roadway are proposed. Copco Road in this location has no shoulder, is poorly striped, and has deteriorating pavement. KRRC should clearly identify the need for repaving to avoid any potential issues to haul routes and residents. Repaving the roadway will also alleviate potential safety concerns.

Page 1: Copco Road from Daggett Road to Copco Access Road is noted to be in poor condition; however, no upgrades to the roadway are proposed. Copco Road from Daggett Road to Copco Access Road is an unimproved, very narrow roadway that has many low and overhanging trees that could obstruct trucks. Copco Road will need upgrades, widening, and tree trimming to accommodate haul trucks. KRRC should clearly identify improvements to be made prior to construction.

Page 2: Copco Road between Copco 1 Access Road to Copco Bridge will not be used for dam or powerhouse removal. KRRC should place signs to indicate that no haul trucks shall proceed past Copco Access Road, or make improvements to the roadway to allow for construction traffic and ingress/egress of residents.

Page 4: Drawdown and post-project flows have the potential to cause erosion at the abutments or central pier of Copco Road Bridge. KRRC should further evaluate the need to reconstruct the Copco Road Bridge prior to Project implementation. If the Copco Road Bridge fails, residents on the north side of Copco Reservoir will only have one ingress and egress route (Copco Road, which is poorly maintained).

APPENDIX L: CULTURAL RESOURCES PLAN

Chapter 2. Plan Overview. The Area of Potential Effects (APE), for the purposes of compliance with the National Historic Preservation Act, has yet to be defined. Appendix L at 15, 29. The plan states that the APE will be identified based on the historic built environment evaluation report to be prepared by KRRC, but does not provide any information regarding the timeline. *Id.* at 55-56.

6.2.4 General Inventory and Resource Recordation Methods. Archaeological survey methods used by KRRC include pedestrian survey transects spaced 15 meters apart however, they should also include subsurface testing in areas considered high probability for the presence of cultural resources. *Id.* at 50.

KRRC's archaeological inventory methodology does not include subsurface testing in high probability areas for the presence of cultural resources within the APE. Pedestrian surveys in areas with low mineral soil visibility or buried archaeological resources are not effective without systematically sampling for buried, near-surface deposits. Accordingly, inventory methodology should include subsurface testing.

Chapter 7. Resource Evaluation. Previously identified cultural resources within the Area of Direct Impact (ADI) that are unevaluated or "potentially eligible" for the National Register of Historic Places will require testing and evaluation fieldwork. Site-specific methods should be developed. *Id.* at 55.

KRRC will conduct an evaluation of historic built environment resources and prepare two reports (one for each state) that will identify the APE, evaluate the resources, assess project effects, and make recommendations to avoid and minimize effects and mitigate adverse effects. These recommendations for mitigation should be included in the Cultural Resources Plan.

Chapter 8. Management Plans and Agreement Documents. Many of the items within the Cultural Resources Plan are still being developed by the KRRC and lack sufficient detail. The Plan states that the Historic Properties Management Plan (HPMP) will include protocols for cultural resource identification and evaluation during dewatering activities and effect avoidance, minimization, and mitigation for historic properties; however, these protocols are still unknown and lack detail. *Id.* at 61. The Inadvertent Discovery Program, the Cultural Resources Monitoring Plan, and the Looting and Vandalism Prevention Plan also lack sufficient detail. *Id.* at 62-65. The Cultural Resources Plan should be updated upon completion of all analyses and include all minimization and mitigation measures.

APPENDIX M: WATER QUALITY MONITORING PLAN

2.1.2 Contaminants in Sediment. The Water Quality Monitoring Plan states that the sediments in each reservoir are suitable for unconfined, aquatic disposal and that the contamination risk is unlikely. Appendix M at 16. This statement is contrary to information provided in the 2012 EIR/EIS, which states:

Results indicate that sediment in all three reservoirs exceeded freshwater ecological SLs for nickel, iron, and 2,3,4,7,8-PECDF (Table C-5). Sediment in J.C. Boyle Reservoir also exceeded freshwater ecological SLs for 4,4'-DDT, 4,4'-DDD, 4,4'-DDE, dieldrin, and 2,3,7,8-TCDD (Table C-5). Several pesticides and semi-volatile organic compounds (SVOCs) were not detected in the reservoir sediments; yet, the reporting limits were above the freshwater SLs, so other lines of evidence were used to assess these compounds. Similarly, human health SLs were only exceeded for arsenic and nickel, pentachlorophenol (in the case of J.C. Boyle Reservoir), and some legacy pesticides (e.g., 4,4'-DDT, 4,4'-DDD, 4,4'-DDE, dieldrin, see Table C-6). Several dioxin-like compounds were detected and exceeded the ODEQ Bioaccumulation SLVs (Table C-6).

The 2012 EIR/EIS also states the following regarding fish tissues, which has significant impacts for human fish consumption:

In a screening-level study of potential chemical contaminants in fish tissue in Keno, J.C. Boyle, Copco, and Iron Gate Reservoirs, and in Upper Klamath Lake, PacifiCorp analyzed metals (i.e., arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, and zinc), organochlorine (pesticide) compounds, and PCBs in largemouth bass (*Micropterus salmoides*) and black bullhead catfish (*Ameiurus melas*) (PacifiCorp 2004c). PacifiCorp reported that, in general, contaminant levels in fish tissue are below both screening level values for protection of human health (USEPA 2000) and recommended guidance values for the protection of wildlife (MacDonald 1994). Exceptions to this include measured fish tissue levels of total mercury in samples from

Copco 1 and Iron Gate Reservoirs as compared to the wildlife screening level of 0.00227 µg/g and measured fish tissue levels of arsenic (<0.3 µg/g) that PacifiCorp indicated may equal or exceed the toxicity screening level for subsistence fishers (0.147 µg/g) in samples of largemouth bass from J.C. Boyle, Copco 1, and Iron Gate Reservoirs. Subsequent reanalysis of the PacifiCorp mercury tissue data indicates that all tissue samples exceed the most protective wildlife screening level of 0.00227 µg/g, samples from Keno, J.C. Boyle, Copco 1, and Iron Gate Reservoirs exceed the screening level for subsistence fishers (0.049 µg/g), and samples from Copco 1 and Iron Gate Reservoirs exceed the screening level for recreational fishers (0.4 µg/g) (Table C-9).

Because fish tissues analyzed in the Klamath basin show bioaccumulation at levels that cause concern, this indicates that toxins are present in either the sediments or the water column, and that these toxins are present in consumable fish tissue. It is possible that the lab analyses did not use detection limits that were low enough to thoroughly characterize suspected toxins, or that the sediment grab samples were not sufficiently random to represent the actual conditions in the reservoir sediments that have resulted in fish tissue bioaccumulation.

2.1.3 Algae in the Klamath Hydroelectric Reach. Regarding algae contamination in the reservoirs and downstream of Iron Gate Dam, the plan states that

[t]he relative significance of contributions of the reservoirs and upstream sources [of algae toxins] is complex and disputed. The KRRC does not state a position on the relationship or relative significance of such sources. To the extent that these reservoirs are a source, the Project will remove the source.

Appendix M at 16. Upper Klamath Lake and Lake Euwana are major sources of algae and the toxins that they produce. These sources should be included in the analysis of the effects of dam removal on algae contamination.

KRRC will develop a sediment characterization plan in consultation with the regulatory agencies for the states of Oregon and California. *Id.* at 25. The details of the sediment characterization plan need to be developed and published with sufficient time for public review and comment.

APPENDIX N: GROUNDWATER WELL MANAGEMENT PLAN

- The technical rationale for limiting the Groundwater Well Management Plan (GWMP) target area (i.e., the database search area) to a 2.5 mile radius from the project reservoirs should be explained. Appendix N at 15.
- The location of the shared spring water supply near Copco Lake is missing from Figure 2 in Appendix N.
- A conceptual hydrogeologic model should be developed for the target area with regard to the anticipated aquifer characteristics within the target area, and the source zones for the current 124 wells, e.g., overburden versus fractured rock. After this has been accomplished, the GWMP should be revised with the sentinel well design, taking into account the potential impact of the reservoir drawdown on the current well water supply sources. Multi-level sentinel wells will likely be required, which have not been accounted for in the GWMP. SIR 2007-5050 and SIR 2012-5062 are publications prepared by the U.S. Geological Survey, and are references that should be cited within the GWMP.
- The field study results associated with outreach to landowners and residents should be augmented with groundwater modeling to predict the reservoir drawdown effects on the aquifers within the target area. Appendix N at 16.

2.6 Proposed Actions.

- Without any evidence of excessive pumping by a well owner, there should be no question that a well with diminished water supply in the target area following dam decommissioning is a direct result of the reservoir drawdown. Therefore, the phrase “and that these circumstances are attributable to reservoir removal” should be struck.
- The analysis should address the impact of a future drought on the current water supplies. SIR 2007-5050 has identified a 10-foot decline in groundwater levels in portions upper Klamath River basin.
- In addition to the water supply wells and springs, the analysis should address the impact of the reservoir drawdown on groundwater-fed streams within the target, as these streams support irrigation and presumably an aquatic ecosystem. The US Fish and Wildlife and National Marine Fisheries Service issued biological opinions in 2001 that anticipate a reduction in surface water withdrawals in the upper Klamath River basin.
- Besides the one spring mentioned near Copco Lake, there are numerous other springs that need to be catalogued and monitored within the GWMP. Appendix N at 15.
- The nature of the Sky Lakes Fault Zone as a hydrogeologic barrier of flow was mentioned within the 2012 EIS/EIR, but is not addressed by the GWMP.
- The GWMP should also address the following nearby community water supplies:
 - The City of Yreka currently receives its municipal water supply from Fall Creek.
 - Water supply in Hornbrook, Copco Village, and Beswick comes from private groundwater wells.
 - Water supplies in unincorporated Klamath County come from private groundwater wells and public water companies, and some water is supplied by Klamath Falls.
 - Water supplies come from Merrill City groundwater wells on Front Street. Klamath Falls Water Division is responsible for providing water to more than 40,000 residents in the urban area (total storage capacity of 16 million gallons) from groundwater wells.

- The City of Chiloquin supplies water to all city residents as well as some residents that are outside of the city but within the urban service area from a single groundwater well.

APPENDIX O1: FIRE MANAGEMENT PLAN

- The Fire Management Plan (FMP) notes that helicopter water tanks will be filled along portions of the Klamath River deeper than three feet after the drawdown of the reservoirs. Appendix O1 at 41. The FMP states that aerial analysis shows deep pools with suitable conditions for helicopter filling exist near the three reservoirs. *Id.* It should be noted that helicopters may not be able to fill their water tanks in the vicinity of the post-drawdown-reservoirs due to the canyons that will develop around the rim of the existing reservoirs and downstream. Helicopters require a relatively wide, flat topography in order to draft water safely. Alternatively, it is possible that many of the existing pools will fill with silt and sediment released during dam removal. Under either alternative, helicopter round-trip travel time may be higher than the 15 minutes estimated due to the helicopters having to fly far upstream or downstream of the existing dam facilities to find suitable filling conditions.
- The FMP proposes dry hydrants as water supply infrastructure for post-removal firefighting. *Id.* In addition to dry hydrants, the FMP should also include other permanent sources of water that can be used for aircraft firefighting activities. This is especially critical due to the possibility that river conditions will be inadequate for water tank filling post-drawdown, as noted above. The FMP should identify permanent water sources (such as dip tanks) that will be strategically placed along the Klamath River corridor to support aircraft firefighting activities. The permanent water sources could be filled with Klamath River water extracted via the proposed dry hydrants. Given the devastating wildfires that have occurred, and will likely continue to occur, throughout the Project area, every precaution should be taken to mitigate fire risk.

APPENDIX O2: TRAFFIC MANAGEMENT PLAN

Chapter 1. Need for Traffic Management Plan. Table 1.1-1 (Primary Access Route Summary) identifies Patricia Avenue as a local access road; however, Patricia Avenue is not mentioned as an access road or haul route of significance in Appendix K, Road and Bridge Structure Data and Long-term Improvements. Appendix O2 at 10. KRRC should indicate the condition of the road and any proposed improvements during or after construction in Appendix K.

1.2 Management Strategies.

- “Traffic Safety Effects” is proposed as a management strategy. *Id.* at 11. However, there are no specific examples of where traffic safety effects would be implemented. Please identify traffic safety hazards in Appendix O2 and/or Appendix K, and identify the best practice signage, traffic management systems, and dust control practices to be implemented at each location.
- Siskiyou County Sheriff’s Department has expressed concern over access for law enforcement and emergency services during times of heavy traffic during construction, as well as concerns about access during flooding events during and after removal. The Traffic Management Plan should address these issues.

APPENDIX O3: HAZARDOUS MATERIALS MANAGEMENT PLAN

- The list of structures identified at each of the dam locations appears to be thorough. Appendix O3 at 9. Table 1 lists the anticipated types of hazardous wastes that may be present at each of the dams and includes several

unknowns regarding contaminated soils (from exterior painting with lead-based paint [LBP]), polychlorinated biphenyl (PCBs) (even though equipment tested negative, there may still be residual concentrations present), and mercury containing equipment/fixtures (e.g., switches). *Id.* at 10.

- KRRC will update the Hazardous Materials Management Plan (HMMP), as appropriate, following the planned Phase I ESA visits and interviews and the Phase II Site Investigation, if needed after the Phase I ESA. *Id.* at 9. As indicated in the SWCA Technical Memorandum dated April 19, 2018, review of the data from the previous sediment characterization effort suggested that additional assessment may be warranted to include: additional deep-sediment samples; additional Total PCB analyses, especially from the deeper sediments; and additional polycyclic aromatic hydrocarbon (PAH) analyses so that the detection level, at a minimum, falls between the threshold effect concentration (TEC) and predicted environmental concern (PEC) values, instead of greater than the PEC levels. This additional assessment presumably would be part of the Phase II ESA effort that would be needed to further characterize the potential waste materials and associated hazardous or toxic constituents.
- The sections of Chapter 1 describe for each dam the types of waste materials expected to be generated during dam decommissioning, and include inventories of hazardous materials provided by PacifiCorp. Hazardous and toxic constituents are listed for several of the waste materials that will be generated. However, some waste materials are omitted. The following hazardous and toxic constituents may be associated with these potential waste materials:
 - **Asbestos** – Asbestos-reinforced cement was developed in the early 1900s and was used extensively throughout the United States from the early- to late-1900s. About 24 manufacturers offered asbestos-containing cement products, with an asbestos content of 2–10% by weight. Asbestos improved the cement's performance, helped reduce cracking, and was added to the mixture of cement that was used in a variety of industrial, commercial, and residential construction products. Asbestos is an incredibly strong substance. When added to building materials and other heavy-duty items, it helps to create goods that are very tough and durable, holds up well under most any type of weather conditions (cold or heat), and withstands water and fire. These properties made asbestos-reinforced cement/concrete ideal for water conveyance pipes, dams, or other concrete structures. In addition to ceiling and floor tiles, roofing and siding materials, and electrical wire insulation, asbestos may be present in concrete pipes (water conveyance structures at the dams and/or smaller diameter pipe used with septic tank/drainfield systems), other concrete structures, electrical and thermal insulation panels, gaskets, and packings. Demolition and removal of these structures/materials could generate dust and airborne asbestos fibers, and should be tested for asbestos as part of the Phase II Environmental Site Assessment (ESA) sampling activity and managed accordingly.
 - **Heavy metals** – Heavy metal-containing paints or lead-based paints (LBP) on exterior surfaces and equipment may have contaminated adjacent soils during painting and maintenance activities. LBP was routinely used for interior and exterior surfaces during the earlier operational periods of the dams. Soils near painting and maintenance operations should be tested as part of the Phase II ESA sampling activity to assess their hazardous or toxic characteristics.
 - **Insulators** – Where high mechanical strength is required, a porcelain rich in alumina is used to manufacture the insulator. During demolition, the insulators may be broken, releasing high-alumina content dust. The types and quantities of power line insulators should be assessed for alumina content and potentially hazardous or toxic alumina concentrations in the dust that may be generated during demolition activities.

- The Hazardous Materials Management Plan describes what kinds of waste will be removed at each dam location, but lacks protocol for evaluating the characteristics of the waste. The plan should include the hazardous materials testing procedures to be implemented at each dam removal location.

APPENDIX O4: EMERGENCY RESPONSE PLAN

1.5 Hazardous Material Spill Management. The Spill Prevention and Response Plan fails to address the following issues:

- Spill supplies and equipment used to clean and contain spills;
- Storage location of spill supplies and equipment;
- Secondary containment requirements for construction equipment and materials; and,
- Waste storage and disposal procedures.

These issues should be addressed in the Spill Prevention and Response Plan.

APPENDIX O5: NOISE AND VIBRATION CONTROL PLAN

The Noise and Vibration Control Plan describes the measures to be implemented to minimize the effect of noise and vibration on sensitive receptors. Appendix O5 at 9. However, the plan does not include any noise or vibration monitoring procedures to confirm compliance with established thresholds. KRRC should indicate whether such monitoring procedures will be included in the final Noise and Vibration Control Plan.

APPENDIX Q: DRAFT RECREATION PLAN

2.3.2. New Facilities and Plans. The Draft Recreation Plan includes the additional recreational mitigation measures proposed by Siskiyou County and SWCA during the April 5, 2018 meeting with KRRC and AECOM. However, the plan does not identify organizations or agencies that will be responsible for the operation and maintenance of the existing and new proposed facilities (with the exception of BLM-managed facilities).

Chapter 3. Recreation Opportunity Evaluation and Screening. This chapter outlines criteria that will be used to evaluate consistency of each recreation project with the Recreation Objectives (section 1.3). To satisfy Criteria C and D, there must be an entity or entities responsible for operation and maintenance of the recreational facilities after KRRC surrenders its license, and the project must not generate increased demand that would make it difficult to manage. Appendix Q at 41. Therefore, the plan should provide that entities that will assume responsibility for the recreation projects should be determined prior to the evaluation process.

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COUNTY OF SISKIYOU

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June 06, 2018

Assemblyman Jim Wood, District 2
State Capitol
P.O. Box 942849
Sacramento, CA 94249-0002

Subject: Opposition – AB 2640 Protected species: Lost River sucker and shortnose sucker limited take authorization

Dear Assemblyman Wood:

The Siskiyou County Board of Supervisors is writing this letter to express our opposition of *AB 2640 Protected species: Lost River sucker and shortnose sucker limited take authorization*; which would permit the California Department of Fish and Wildlife to authorize the take or possession of suckers resulting from impacts associated with the removal of the four Lower Klamath River dams.

In late May 2018, the Klamath Tribes filed a lawsuit in the United States District Court for the Northern District of California seeking to shut down the Bureau of Reclamation's Klamath Project, which supplies water to over 200,000 agriculture acres and hundreds of family farms in northern California and southern Oregon. The substance of the Tribes' complaint is that the Lost River and short nose suckers are in great peril and at extreme threat of extinction by diversion of water from Upper Klamath Lake to support farming. As part of this lawsuit, the Tribe is requesting the assigned Judge to order an injunction on lake elevation levels, above Biological Opinion thresholds which are currently being met while irrigation is occurring; which would completely shut down Klamath Project irrigation if ordered.

The Lost River sucker and shortnose sucker are listed as endangered species under the federal and California Endangered Species Act. They are also a fully protected species under California law, which means that their take is prohibited by law with narrow exceptions for scientific research, efforts to recover the species, and where conservation and management of the species is provided for in a natural community conservation plan, approved by the Department of Fish and Wildlife.

At the same time that the Tribe is seeking an injunction which would shut down farming and ranching in the Klamath Project to purportedly save fully protected suckers, AB 2640 is positioned to grant a legislative waiver of these protections, for a project that would permanently eliminate

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reservoir habitat above the dams currently occupied by both sucker species, and would result in the extirpation of the species in that portion of their range. In light of the precarious status of the species and a dearth of information regarding its contemporary distribution and abundance, as well as the prominent role of the State of California as an advocate for dam removal, those concerned about the fate of the suckers should question if the State has a greater interest in dam removal than the survival of the endangered suckers; by attempting to side-step law rather than abiding by it, as every other entity, landowner, or project proponent is required to do.

Due to the issues outlined above, we urge you to reconsider AB 2640 by not allowing its passage, and rather require that State law is met and abided by. Please feel free to contact, Elizabeth Nielsen, Siskiyou County Project Coordinator, at any time at enielsen@co.siskiyou.ca.us or (530) 842-8012.

Sincerely,



Ray A. Haupt, Chair
Board of Supervisors



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July 17, 2018

Ms. Michelle Siebel
State Water Resources Control Board
Division of Water Rights- Water Quality Certification Program
PO Box 2000
Sacramento, CA 95812-2000

Subject: Comments re Draft California State Water Resources Control Board Water Quality Certification for Klamath River Renewal Corporation Lower Klamath Project

Dear Ms. Siebel:

The Siskiyou County Board of Supervisors, through coordination with its consultant, SWCA Environmental Consultants, writes this letter to provide comments on the California State Water Resources Control Board's (California Water Board) *Draft California State Water Resources Control Board Water Quality Certification for Klamath River Renewal Corporation Lower Klamath Project*.

It is the County's understanding that the draft Water Quality Certification has been published for comments prior to the release of the draft Environmental Impact Report that the California Water Board is drafting related to the Klamath River Renewal Corporation's application to the Federal Energy Regulatory Commission to remove the four Lower Klamath River Dams. The County anticipates the release of the draft EIR later this year, which should include a much more robust and detailed analysis of all impacts as a result of potential dam removal, many of which will significantly impact Siskiyou County. This letter is not meant to serve as the County's final comments related to the Water Quality Certification, and additional comments will be provided when the California Water Board makes the draft EIR available for public comment.

Coordination with Oregon Department of Environmental Quality

U.S.C. §1341 (a)(2) stipulates that when a discharge may affect the quality of the water of a downstream state, the upstream state must notify the downstream state. As the Oregon Department of Environmental Quality has issued a draft Water Quality Certification in parallel with the California Water Board's draft certification, additional information must be provided in Section 1, Background, to provide the public with any coordination and notification processes that have transpired between the two agencies. The California Water Board must ensure that Oregon's draft Water Quality Certification meets all water quality standards and adopted criteria. There is nothing in the California Water Board's draft Water Quality Certification that describes that this cumulative

analysis has taken place; and as such Siskiyou County requests that they be provided with this information.

Condition 1. Water Quality Monitoring and Adaptive Management

Under the "Reporting and Adaptive Management" subsection on pages 17 and 18 of the draft California Water Quality Certification, the condition states that "Monitoring and monthly reporting shall continue until otherwise approved by the Deputy Director." This condition should include the parameter(s) by which the Deputy Director would conclude that monitoring and monthly reporting is no longer required; and again we request that this information be provided to Siskiyou County.

Condition 4. Anadromous Fish Presence

Under the Frequency and Duration subsection on page 24, the condition states that "Fish presence surveys shall be conducted for at least four consecutive years and until otherwise approved or modified by the Deputy Director." This condition should include the parameter(s) by which the Deputy Director would conclude that fish presence surveys are no longer required; and we request that this information be provided to Siskiyou County.

We look forward to the California Water Board's responses to our comments and inquiries; please feel free to contact Elizabeth Nielsen, Project Coordinator, at (530) 842-8012 or enielsen@co.siskiyou.ca.us. This letter was approved by the Siskiyou County Board of Supervisors on July 17, 2018, by the following vote:

AYES: Supervisors Haupt, Kobseff & Criss
NOES: None
ABSENT: Supervisors Nixon & Valenzuela
ABSTAIN: None

Sincerely,



Ray A. Haupt, Chair
Board of Supervisors

cc: ODEQ



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July 17, 2018

Chris Stine, Hydroelectric Specialist
State of Oregon Department of Environmental Quality
165 E 7th Ave, Suite 100
Eugene, OR 97401

Subject: Comments re Draft Oregon Department of Environmental Quality Water Quality Certification for Klamath River Renewal Corporation Lower Klamath Project

Dear Mr. Stine:

The Siskiyou County Board of Supervisors, through coordination with its consultant, SWCA Environmental Consultants, writes this letter to provide comments on the Oregon Department of Environmental Quality's (ODEQ) draft *Water Quality Certification for Klamath River Renewal Corporation Lower Klamath Project (Water Quality Certification)*.

Coordination with California State Water Resources Control Board

1. U.S.C. §1341 (a)(2) stipulates that when a discharge may affect the quality of the water of a downstream state, the upstream state must notify the downstream state. It is not apparent in reading the *Water Quality Certification*, that this procedure has taken place. Please provide some context for any coordination and notification that has occurred between Oregon and California with respect to the issuance of a Water Quality Certification that would affect California water quality.

Condition 2. Water Quality Management Plan

1. Under the list of parameters listed on page 2 of the *Water Quality Certification* - are total suspended sediments (TSS) and total dissolved solids (TDS) both included in suspended sediment concentration requirement? If not, then why aren't TSS and TDS part of the monitoring protocol?
2. Why is ODEQ not requiring monitoring of sediment contaminants such as DDT, DDD and DDE, TCDD along with semi-volatile organic compounds and dioxin-like compounds? These contaminants were shown in the December 2012 Water Quality Support Technical Information to exceed screening limits and ODEQ's Bioaccumulation screening level values (SLVs). This seems especially important since J.C. Boyle sediments have higher chemical concentrations and more chemicals of potential concerns (COPCs) than the other reservoirs. The lists of chemicals in sediment samples from J.C. Boyle that exceed one or more sediment screening levels (Table C-5) and those that

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exceed one or more human health sediment screening levels (Table C-6) of the December 2012 Water Quality Support Technical Information are extensive and should not be ignored.

Condition 4. Miscellaneous Measures Protective of Beneficial Uses

1. Under the "Frequency and Duration" subsection on page 24, the condition states that "Fish presence surveys shall be conducted for at least four consecutive years and until otherwise approved or modified by the Deputy Director." This condition should include the parameter(s) by which the Deputy Director would conclude that fish presence surveys are no longer required.
2. J.C. Boyle was originally constructed at the site which was historically known as "Moonshine Falls". This potential natural fish passage barrier should be included in the list on page 4 under 4(a)(iii).

Condition 5. Reservoir Drawdown and Diversion Plan

1. On page 5 under 5(c)(iii), Cultural Resource Discovery should include a site security and protection plan for each discovered site.
2. On page 5 under 6(a), the licensee should be required to develop and implement an Aquatic Invasive Species (AIS) Monitoring and Protection Plan to prevent introduction of any AIS by heavy equipment involved in the removal process both on land and in water.

Condition 6. Reservoir Area Management Plan

1. On page 6 under 6(b)(iii), the Licensee should be required to inspect and remedy physical barriers to fish passage more frequently than once per year since the migratory fish species have different upstream passage windows. At the very least there should be a spring and fall inspection period that occurs well in advance of the known upstream passage windows so that remedies can be implemented prior to the onset of fish migration.

Condition 8. Site Restoration, Erosion and Sediment Control

1. Page 8 under 8(d)(i), it is assumed that there has been some coordination between the Licensee and the U.S. Bureau of Land Management (BLM) regarding the Topsy Campground removal since that facility is owned by the BLM. Please provide some context for coordination between ODEQ and BLM.
2. Page 8 under 8(e), much of the terrain on the downslope side of the J.C. Boyle canal is very steep. It seems negligent to side-cast canal earthen material since much of it will eventually end up in the river reach causing turbidity.

Condition 10. Spill Response

1. Page 10 under 10(a)(vi), equipment operated in state waters should have a manifest showing previous work locations and also be fully inspected for AIS presence prior to use on this project to prevent contamination in the Klamath River.

We look forward to the ODEQ's responses to our comments and inquiries; please feel free to contact Elizabeth Nielsen, Project Coordinator, at (530) 842-8012 or enielsen@co.siskiyou.ca.us. This letter was approved by the Siskiyou County Board of Supervisors on July 17, 2018, by the following vote:

AYES: Supervisors Haupt, Kobseff & Criss

NOES: None

ABSENT: Supervisors Nixon & Valenzuela

ABSTAIN: None.

Sincerely,



Ray A. Haupt, Chair
Board of Supervisors

cc: California Water Resources Control Board