December 12, 2018

DELIVERY VIA ELECTRONIC FILING

David E. Capka, P.E.
Office of Energy Projects
Director, Division of Dam Safety and Inspections (D2SI)
Federal Energy Regulatory Commission
888 First Street, N.E., Routing Code: PJ-13
Washington, D.C. 20426

RE: FERC Nos. P-2082; P-14803, NATDAM-OR00559, CA00323, CA00234, CA00325; Letter Report, Independent Board of Consultants Meeting No. 1

Dear Director Capka:

This letter provides the Klamath River Renewal Corporation's ("KRRC") plan and schedule for responding to the recommendations contained in the November 28, 2018 report issued by the Lower Klamath Project Independent Board of Consultants ("BOC").

Formal Meeting No. 1

On October 24, 2018 a formal meeting of the BOC was convened to review certain aspects of the proposed transfer of the Lower Klamath Project No. 14803 from PacifiCorp to KRRC and the proposed surrender and removal of the Lower Klamath Project that is more particularly described in the Definite Plan filed with FERC on June 29, 2018 (P-2082-062/P-14803-000; FERC Accession No 20180629-5018). This formal meeting ("BOC Meeting No. 1") was convened to review the adequacy of cost estimates, insurance, bonding, and the overall financial resources available to KRRC to implement the Definite Plan, including the following:

- The updated maximum and probable cost estimate, and the probability that each will occur;
- The updated project contingency reserve based on updated project costs;
- The types and amounts of insurance policies and surety arrangements anticipated to be secured by KRRC;
- The risk register and risk management plan; and
- The adequacy of funds and the funding mechanisms described in the data package.

Before BOC Meeting No. 1, the Federal Energy Regulatory Commission ("FERC") advised KRRC that FERC staff would not attend this meeting. Consistent with FERC's May 22, 2018 directive, BOC Meeting No. 1 was not publicly noticed, and participation was limited to invited attendees.

Due to the volume of information the BOC was asked to review, KRRC requested and FERC granted an extension of time for the BOC to complete its report (November 28, 2018). Following BOC Meeting No. 1 and after a full review of the data package, the BOC requested additional information from KRRC. By separate transmittal, KRRC is providing FERC with a copy of these information requests and the data that was provided to the BOC in response to these requests.

Report No. 1

On November 28, 2018, the BOC provided KRRC and PacifiCorp its "Letter Report; Board of Consultants Mtg. No. 1," attached hereto as Exhibit A. Upon review of this report, KRRC submitted written questions to the BOC and requested clarifications of certain items stated in the report. These questions and clarifications are attached hereto as Exhibit B. On December 10, 2018, the BOC provided KRRC with a revised "Letter Report: Board of Consultants Mtg. No. 1" ("Report No. 1"), attached hereto as Exhibit C. KRRC would like to express our appreciation to the BOC for its hard work and thoughtful responses to the questions that FERC asked the BOC to review.

Report No. 1 contains three recommendations (Report No. 1 at page 12). Per FERC's May 22, 2018 directive, "within two weeks from receipt of the BOC meeting report, PacifiCorp and/or the Renewal Corporation should distribute the report and a plan and schedule to comply with the BOC's recommendations or a statement identifying a plan to resolve any issue(s)." In response to these recommendations, KRRC submits the following plan and schedule to FERC for its review and approval.

> ***Recommendation Number 1: The BOC recommends that a "Plan B" be developed with regard to where additional funding would come from should the project costs exceed the state cost cap.***

KRRC accepts this recommendation.

The Definite Plan (June 2018) included a draft Risk Management Plan as its Appendix A. In response to this recommendation, KRRC will submit a revised plan per the steps outlined in our "Response to Information Request," dated June 28, 2018 (Questions 3(b) and 3(c)). This revised plan will be provided to FERC on or before April 29, 2019. The revised Definite Plan, which will function as "Plan A and B," will address the following elements.

1. KRRC will rely on the Agreement for the Operation and Maintenance of the Lower Klamath Project (the "O&M Agreement") to cover "all costs associated with operating and maintaining the facilities between the time of license transfer and Decommissioning, and indemnify, defend and hold KRRC harmless with respect to those operations." The O&M Agreement extends to dates defined therein as the "Facility Termination Date." The O&M Agreement does not set an outside date by which the "Facility Termination Date" must occur.

2. Section 7.l.4 of the Amended Klamath Hydroelectric Settlement Agreement ("KHSA") requires KRRC to confirm our capacity to perform, *before* KRRC accepts the license. The States and PacifiCorp, along with KRRC, must be assured that sufficient funding is available to carry out the Definite Plan. These parties will independently review all available information as the basis for their determination, which will be submitted to FERC for consideration.

3. Under KHSA Appendix L Part II, KRRC must secure a comprehensive insurance package. If an insured event occurs (such as harm or damages to a third party), the insurer must cover the cost of response to the event. Under Part III, KRRC must obtain a surety bond, directly or through its contractor and in an amount equal to the face value of the contract for Facilities Removal, "to assure that Facilities Removal will be performed as required …." If a bonded event occurs (such as cost overrun or delay due to factors within the contractor's responsibility), the contractor or surety must cover the cost of performance. Under Part IV, KRRC must indemnify PacifiCorp and the States against any harm or damages arising from Facilities Removal, regardless of fault of KRRC or the contractor. If an indemnified event occurs (such as a dam collapse, a major lawsuit by project opponents, or contaminated soils affect downstream properties), the indemnifier must cover the cost of response. Using our funds to pay premiums, KRRC will acquire and hold insurance, bond, and indemnification; and those financial instruments will cumulatively provide hundreds of millions of dollars of coverage against risks. In sum, the state cost cap of $450 million will cover the performance of the project <u>and</u> premiums for insurance, bonds, and indemnification, which extend the cost cap by hundreds of millions of dollars.

4. KRRC will prepare a revised Cost Estimate in compliance with BOC Recommendation No. 2 (see below). This will inform the determination of the States and PacifiCorp required by Section 7.l.4 of the KHSA, as well as FERC's review. KRRC expects to provide this revised Cost Estimate by April 29, 2019.

5. KRRC has initiated a competitive process for selecting and contracting with its contractor to perform dam removal as provided by the KHSA ("Project Contractor"). After this Project Agreement is signed, the Project Contractor will proceed to perform approximately six to eight months of preliminary services prior to performing any physical work. These services will include providing increasingly more refined estimates of the project's cost. At the completion of the preliminary services, KRRC and the Project Contractor will negotiate an amendment to the Project Agreement establishing a Guaranteed Maximum Price ("GMP") for all of the project implementation work (including hatchery work, pre-reservoir drawdown work, reservoir drawdown work, dam removal work, and habitat restoration work). The negotiation and establishment of the GMP is expected to confirm that the funds available to KRRC will be sufficient. The only adjustments to the GMP thereafter will be adjustments required to take into account final permit terms and conditions (to the extent different from draft terms and conditions available before the GMP is negotiated) and adjustments for any costs which are contractually defined as outside the contractor's control. These "uncontrollable circumstances" include primarily changes in law and uninsurable force majeure events. If, during the negotiation of guaranteed maximum price it appears that there may be insufficient funds, KRRC has the option to elect to de-scope the project by implementing the partial dam removal alternative.

6. Risks transferred to the Project Contractor under the Project Agreement will include the risk of unexcused delays; unexpected work that the project contractor needs to perform to carry out the basic work scope; unavailability of materials; noncompliance with the removal plan, applicable law and governmental approvals; intellectual property infringement; and the risk of exacerbating any existing hazardous substances or other pollution conditions. KRRC will provide FERC a copy of the draft Project Agreement, in compliance with BOC Recommendation No. 3 (see below), on or before April 29, 2019.

7. A revised Cost Estimate will be available on April 29, 2019, which will take into consideration the risk management measures described in items 3 through 6 above. If, based on that Cost Estimate, KRRC costs exceed available funding (as augmented by these risk management measures), then KRRC would initiate the "Meet and Confer" procedures provided by Sections 7.2.1.A(5) and 8.7 of the KHSA.

> ***Recommendation Number 2: The BOC recommends that AECOM prepare another version of the Project's Cost Estimate.***

KRRC accepts this recommendation.

The BOC gave very clear and detailed guidance with respect to the issues to be addressed in a revised Cost Estimate. The BOC also anticipates "another two or possibly three iterations in the cost estimate compilation process to reach an acceptable finished product of a Class 3 Cost Estimate." In preparing this revised Cost Estimate, KRRC proposes an iterative process with the BOC, and will propose some interim dates to the BOC that would allow the BOC to provide feedback on work in progress, with a final cost estimate to be provided to FERC on or before April 29, 2019.

> ***Recommendation Number 3: The BOC recommends that Renewal Corporation provide a copy of the RFP (including draft contract) being directed to PDB Contractors, for BOC review.***

KRRC accepts this recommendation. KRRC will provide a copy of the RFP to the BOC for review on or before December 17, 2018.

In closing, and per FERC's May 22, 2018 directive, one copy of this letter (with enclosures) is being provided to the D2SI-PRO Regional Engineer, and three copies of this letter (with enclosures) the Director, D2SI, Washington DC. These documents are also being filed as "public" in the record of Project Nos. 2082-062 and 14803-000.

Sincerely,

/ s /

Mark Bransom
Chief Executive Officer
Klamath River Renewal Corporation

Enclosures

cc: Douglas Johnson, (D2SI) Portland Regional Engineer
Dustin Till (PacifiCorp)
Service List (FERC No. 2082-062 and 14803-000)

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EXHIBIT A

November 28, 2018

Mr. Mark Bransom
Klamath River Renewal Corporation
423 Washington St. 3rd Floor
San Francisco, CA 94111

Re: Letter Report; Board of Consultants Mtg. No. 1,
Lower Klamath Project FERC Nos. P-2082, P-14803
Klamath River Renewal Corporation

Dear Mr. Bransom,

The Independent Board of Consultants for the review of the Lower Klamath Project respectfully submits the following Report No. 1.

INTRODUCTION

A Board of Consultants (BOC) was convened to review and assess the aspects related to the proposed Lower Klamath Project (Project) and the financial ability of the Klamath River Renewal Corporation (Renewal Corporation) to complete the process, including the additional information required in the Appendix to the Commission's March 15, 2018 order (per FERC's May 22, 2018 letter to the Renewal Corporation).

This letter report presents our Findings, Conclusions and Recommendations following our first BOC meeting of October 24, 2018, as well as our informal meeting and site visit of October 23, 2018. This includes our review of the materials and correspondence provided by the project team and by Renewal Corporation regarding the ongoing studies for the proposed removal and restoration associated with the Lower Klamath Project comprised of J.C. Boyle, Copco 1, Copco 2, and Iron Gate Hydroelectric Projects (FERC No. P-14803).

BOC Meeting No. 1 primarily addressed the anticipated transfer of these dam and hydropower facilities from current owner PacifiCorp to Renewal Corporation. Matters addressed included the Definite Plan, the feasibility and cost associated with the Definite Plan, as well as the capacity of Renewal Corporation to accept transfer of license from PacifiCorp.

Subsequent to the meetings of October 23 and October 24, AECOM representatives met with BOC members Ted Chant and Dan Hertel in Denver, CO. Additionally, separate conference calls were held between BOC member Steve Coombs and (1) Seth Gentzler (AECOM); (2) representatives from Renewal Corporation, Hawkins, Delafield & Wood LLC, and Willis Towers Watson (Willis) and (3) Charlie Cantwell (Willis).

REVIEW DOCUMENTS

In advance of the informal meeting, site visits and initial BOC meeting, the Renewal Corporation provided the BOC with a number of documents for review, including the following:

1. Definite Plan with Appendices A through Q (with specific attention to Appendix A "Risk Management Plan" and Appendix P "Estimate of Project Cost Report");

2. Klamath River Renewal Corporation Informational Filing in Support of Joint Application for License Transfer and License Amendment, dated March 1, 2017 (with specific attention to pp. 5-8 "Technical Capacity," pp 8-14 "Financial Capacity," and the attachments referenced therein)

3. Response to April 24, 2017 Additional Information Request, dated June 23, 2017 (with specific attention to Renewal Corporation Response Nos. 1, 2.B., 3, 6.B. and 10, and the exhibits referenced therein)

4. Response to October 5, 2017 Additional Information Request, dated December 4, 2017 (with specific attention to Renewal Corporation Response Nos. 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, and 13, and the exhibits referenced therein)

5. Appendix L to Amended Klamath Hydroelectric Settlement Agreement

Additional information pertinent to the assignment was subsequently provided by Renewal Corporation through BOC requests.

REFERENCE LIBRARY

During the BOC review, a number of additional references were provided by Renewal Corporation:

1. FERC Additional Information Requests and Renewal Corporation Responses
2. Final Oregon Clean Water Act Section 401 Certification
3. Draft California Clean Water Act Section 401 Certification
4. State Water Resources Control Board California Environmental Quality Act Scoping Report
5. PacifiCorp Design or As-built Drawings (CEII)
6. Available Dam Inspection Reports (CEII)
7. Available Support Technical Information Documents (STID, CEII)
8. Dam Construction Photos
9. Amended Klamath Hydroelectric Settlement Agreement
10. Renewal Corporation Funding Agreements
11. U.S. Department of Interior, 2012 Environmental Impact Statement
12. U.S. Department of Interior, Klamath Dam Removal Overview Report for the Secretary of the Interior

UNDERSTANDING OF THE ASSIGNMENT

This letter report presents the BOC's findings, conclusions and recommendations regarding the five specific questions posed in the FERC letter dated March 15, 2018.

The five specific questions for BOC review were:

1. The updated maximum and probable cost estimate, and the probability that each will occur;
2. The updated project contingency reserve based on updated project costs;
3. The types and amounts of insurance policies and surety arrangements anticipated to be secured by Renewal Corporation;
4. The risk register and risk management plan; and
5. The adequacy of funds and the funding mechanisms described in the data package.

Renewal Corporation requested the BOC's review of the adequacy of cost estimates, insurance, bonding, and the overall financial resources available to implement the Definite Plan. The BOC review findings and conclusions follow.

Additionally, in the Appendix to the Commission's March 15, 2018 order (per FERC's May 22, 2018 letter to the Renewal Corporation), information is specifically required regarding the following: a) A detailed explanation of how the Renewal Corporation would provide or obtain the necessary funds to operate the Lower Klamath Project if the surrender is not approved before the expiration of the California and Oregon Funding Agreements and the California Bond Measure, b) A detailed explanation of how the Renewal Corporation would provide or obtain the necessary funds to decommission and remove the Lower Klamath Project facilities in the event that funds equal to or greater than the maximum cost estimate for the full removal alternative are required, and c) A detailed explanation of how operation and maintenance of the Lower Klamath Project will continue in the event the surrender is denied. The BOC does not have in its possession the materials described above and therefore is unable to address those details.

FINDINGS

Question 1 - The updated maximum and probable cost estimate, and the probability that each will occur

The BOC's review of the Definite Plan and AECOM Cost Estimate (Appendix P to the Definite Plan) is not intended to represent a quality control/quality assurance or independent technical review. The review is intended to provide a broad overview of AECOM's approach to planning the Project, a mid-level assessment of the appropriateness of the means, methods and sequencing of the detailed delivery plan (Cost Estimate), and an appraisal of the thoroughness of the Cost Estimate.

a. The BOC finds that the approach to meeting Project Objectives as presented in the Definite Plan, including conceptual designs and the selected means, and methods and sequencing of the work appropriately recognize project requirements and vulnerabilities.

b. The Association for the Advancement of Cost Engineering (AACE) Cost Estimate Classification System maps the phases and stages of project cost estimating together with a generic project scope definition maturity and quality of inputs. AECOM had not categorized their Cost Estimate and advancing an understanding the nature of the Cost Estimate will benefit from them doing so. The BOC is most familiar with AACE recommendations for the hydropower industry (AACE Recommended Practice Manual 69R-1.) with respect to classifying cost estimates.

In accordance with AACE, a Class 3 Cost Estimate (hydropower industry) has the following characteristics:

- Maturity Level of Project Definition Deliverables (expressed as a % of complete definition) between 10% and 40%.
- End Usage (typical purpose of cost estimate) is for budget authorization or control
- Methodology (typical estimating method) includes semi-detailed unit costs with assembly level line items
- Expected Accuracy Range (typical variation in low and high ranges including P50 contingency) ranging from a Low of -10% to -20% to a High of +5% to +20%.

The BOC opines that the Maturity Level of Project Definition Deliverables meets or exceeds the Class 3 guideline. Given the nature of the work the typical estimating method expectation for Class 3 can be more than satisfied.

c. The BOC finds that the Cost Estimate as presented lacked a thorough internal quality control review on the part of AECOM. There are inconsistencies, coding errors and some omissions in the current product. We would anticipate another two or possibly three iterations in the cost estimate compilation process to reach an acceptable finished product of a Class 3 Cost Estimate

d. The BOC finds that the context under which the Cost Estimate has been assembled is predicated on a *commercially viable* contract between Renewal Corporation and the Progressive Design-Build (PDB) Contractor that contemplates excusable delays and assignment of project risks to those parties best suited to manage them. The details of the ultimate PDB Contract are not currently known however. The BOC finds that the current Cost Estimate does not contemplate additional costs a PDB Contractor may charge related to a greater scope and level of assumed risks, beyond those typical to a PDB Contract.

e. The BOC finds that major shortcomings in the current cost estimate include the allowance provided for Contractor Overhead and Profit (which the BOC considers inadequate in the context of the Project), and the absence of cost premiums commensurate with the contemplated Klamath Corporation insurance program including, but not limited to the anticipated costs of the liability transfer entity. Additional comments with respect to the AECOM Cost Estimate can be found later in this Report under the heading Other Cost Considerations.

Question 2 - The updated project contingency reserve based on updated project costs

The BOC has reviewed Renewal Corporation's overall approach to project contingency reserve. However, this review is not intended to represent a quality control independent technical review, nor re-assess probabilities of various cost and schedule risks. The BOC is intended to render its opinion if the overall approach taken by Renewal Corporation and AECOM is within industry guidelines, contemplates known risks with active response strategies, and if it is adequate.

a. The BOC finds that the general approach to contingency is within industry guidelines. However, any unforeseen significant cost would not be covered by the proposed funding. It is realistic to anticipate that a major change could occur on this project, as has happened on significant civil work in recent history (Calaveras Dam, Oakland Bay Bridge, Devil's Slide, the Boston Big Dig.) Our concern would be for unforeseen cost overruns beyond the allowed contingency and project cost cap.

b. The BOC finds that the proposed level of contingency is unclear. Appendix P indicates that contingency was arrived at in two different ways; a) by using an allowance of 30% of direct construction costs and b) by using a Monte Carlo simulation to arrive at a total probable project cost. Under the first method, a contingency of about $65 million (Nov 2018) was stated, and under the second method, a contingency of $130 million was stated at the MP90 level of certainty. Appendix P seems to be conflicted regarding this contingency. Under Section 2.7 –Monte Carlo Analysis, it is stated that the P80 cost would be an industry standard. We agree with that. The P80 Cost is stated as approximately $465 million and includes $113 million in contingency (Nov 2018.) Section 2.7 then goes on to state: "*Due to the unique nature of this Project and the KRRC, KRRC selected a conservative P90 to represent the MPH for the Project. The P90 estimate covers the most likely final project cost in 90% of all scenarios.*" This is restated in Section 4.1 in a similar manner.

Appendix P also states an "Estimated Project Cost" as about $400 million (Nov 2018), including a contingency of $65 million, or 30% of Direct Construction Cost. The actual project contingency appears to be driven by the available funds, minus the expected cost.

c. It is the BOC's understanding that some movement toward the partial removal option could expand the contingency accordingly on an as-needed basis as the design proceeds and construction begins.

Question 3 - The types and amounts of insurance policies and surety arrangements anticipated to be secured by the Renewal Corporation

The BOC review of the Risk Management Plan (Appendix A to Definite Plan) is not intended to represent a risk assessment of the Project. Instead, it is intended to assess the overall approach taken so far to identify and manage risks associated with the project. It is recognized that the Risk Management Plan must address the requirements of the Amended Settlement Agreement, specifically Appendix L- DRE and Contractor Qualifications, Insurance, Bonding, and Risk Mitigation Requirements.

a. The BOC finds that the types of insurance policies and bonds identified in the Risk Management Plan and the anticipated insured limits of liability are appropriate for a project of this type, size and duration. The BOC opines that one area that should be explored, prior to the time a guaranteed maximum price is negotiated, is to obtain an alternative from the selected PDB Contractor to supply a Contractor Controlled Insurance Program (CCIP) for Commercial General Liability, Excess Liability and Workers Compensation. Generally, large sophisticated contractors are able to secure CCIP's with better terms. Also, the labor-intensive administration of the CCIP would become the responsibility of the PDB Contractor.

The BOC opines that it is not reasonably feasible for Renewal Corporation to include Workers Compensation insurance under an Owner Controlled Insurance Program or OCIP structure because (a) the statutory requirements in Oregon make it difficult to do so (or may preclude it altogether), and (b) there would be insurer mandated requirements to escrow monies to fund the payment of claims falling within applicable deductibles, and to secure and maintain an ongoing letter of credit to collateralize the program. In addition, Workers Compensation claims may not settle for many years following completion of the project. The BOC opines that it may be acceptable for the PDB Contractor and its subcontractors to provide traditional Workers compensation insurance not under a CIP approach. However, the Commercial General Liability and Excess Liability should be addressed by a CIP, whether sponsored by the selected PDB Contractor or Renewal Corporation.

b. The Cost Estimate does not include line items for project-specific insurance policies or estimated cost for a specialty corporate indemnitor (a Liability Transfer Corporation or LTC). Renewal Corporation indicated that the estimated cost for these two items is included within the "Design & Construction Contingency" line item (set forth in Table 1 on page 64, Appendix P of the Definite Plan). The estimated cost for these two items, which is substantial, should be removed from the Design & Construction Contingency (thereby potentially reducing this line item) and separately identified and added to the Cost Estimate (similar to how corporate insurance costs of Renewal Corporation are identified).

Question 4 - The risk register and risk management plan

A risk register is a tool that project teams use to identify, assess, address and document risks throughout the project. It is a living document. The first iteration of the Risk Register appears as Attachment A to the Risk Management Plan and is an excellent start. The BOC suggests the following improvements to the Risk Register.

a. For projects over $100 million, it the BOC's opinion that it is an industry best practice that the risk register design be modified to incorporate quantitative risk analysis [for each identified risk, there are a low/high/ probable percentage; cost impact in dollars (low/high/probable) and time impact in days (low/most high/probable). This helps to staff and stakeholders prioritize the treatment of risks.

b. A "key" should be inserted at the top of each column which defines/describes the inputs (similar to the "New Tunnel" risk register supplied by AECOM). This will help readers and users of the risk register to better understand the information; and

c. The register should be expanded further to include additional risks and be updated monthly after the PDB Contractor is under contract.

The Risk Management Plan (Appendix A to the Definite Plan) is an excellent road map to overall structure. However, a project specific- written Risk Management Plan should be drafted that addresses how risk management will actually be performed. This typically includes methodology, roles and responsibilities, timing, development of strategies to address the risks inventoried in the risk register, reports/deliverables, follow up procedures and the like. The Plan does not need to be complicated or lengthy to be effective. But staff and stakeholders should be able to readily understand who is doing what, when, how and why.

A significant part of the project risk management strategy involves the scope and level of the insurance and indemnification provisions that will be contained in the PDB Contract (being directed to selected PDB bidders) and ultimately negotiated and agreed to by the design-builder. The PDB Contract was not available for BOC review during the assignment.

At this point there is nothing available for BOC review regarding the potential use of an LTC. An LTC may be used to satisfy the requirements of Appendix L. However, potential residual liabilities associated with the project will not be fully known until the PDB Contract is fully negotiated and the project specific insurance policies are finalized and become effective. As such, this will be available for further BOC review at a later time.

Question 5 - The adequacy of funds and the funding mechanisms described in the data package

As articulated in their "Order Amending License and Deferring Consideration of Transfer Application" (Order), dated March 15, 2018, the Federal Energy Regulatory Commission (FERC) has limited its Order to the "Application to Amend" the license for the existing Klamath Project to create the new Lower Klamath Project, licensed to PacifiCorp Energy. This Order separated the "Application to Transfer" the new project to the Renewal Corporation due to concern, in part, with regard to whether the transferee will have the financial capacity to safely remove project facilities and adequately restore project lands.

From reviewing the Order, the BOC understands that the FERC policy in past decisions held that a transfer may be approved on a showing that the transferee is qualified to hold the license and operate the project, and that a transfer is in the public interest. The Order indicates that the FERC has not previously considered an application to transfer a license to a new entity whose sole purpose is to surrender the license and decommission the project, as is the case with the Lower Klamath River Project. To exemplify their concern, the FERC Order references two previous projects that involved surrender and decommissioning. In light of administrative inefficiencies and liability concerns that arose, the transfer of both projects took several years to resolve. In one case, the FERC denied the applications as initially proposed and advised that the original Licensee and the Transferee to become co-licensees. This change ameliorated concerns with the adequacy of funding, so the FERC approved the license transfer, and subsequently the surrender. As a result of concerns with the adequacy of funding for the Lower Klamath Project removal, the FERC has asked that the BOC opine on the adequacy of funds and funding described in the Definite Plan.

The BOC understands from the FERC Order that Renewal Corporation will have three sources of funding for decommissioning, removal, and restoration of the Lower Klamath Project, totaling $450,000,000:

- $184,000,000 from the Oregon Customer Surcharge;
- $16,000,000 from the California Customer Surcharge; and
- $250,000,000 from the California Bond Measure.

These funds, known collectively as the “state cost cap”, are stated to be the maximum monetary contributions available from the states of Oregon and California. The applicants have not identified any additional sources of funding if the cost of the measures required exceeds the state cost cap.

The BOC understands that trust accounts have or are to be established, two in each state, to hold and administer charges collected from PacifiCorp’s retail customers in California and Oregon. The collection of the customer surcharges began in May 2011 pursuant to orders issued by the Oregon and California Public Utility Commissions (PUCs.) The Renewal Corporation is the beneficiary of the trust accounts.

On January 24, 2017, the Oregon PUC approved the Oregon Funding Agreement for the disbursement of funds from the two Oregon trust accounts over three phases: startup activities, planning, and regulatory work (Phase 1); development of the Definite Plan and procurement of contractors (Phase 2); and implementation of the Definite Plan (Phase 3). In its March 1, 2017 filing, the Renewal Corporation provided that it had entered into an agreement with the Oregon Department of Fish and Wildlife for the disbursement of $308,369 in initial startup costs as part of Phase 1. The Oregon Funding Agreement provides that, before disbursements may be made for Phase 2 or 3 activities, the Renewal Corporation must submit project descriptions and budgets for those activities. Renewal Corporation filed a proposed California Funding Agreement that provided for disbursement of funds over three phases, similar to the Oregon Funding Agreement, and was authorized by the CPUC in December 2017. The FERC has indicated concern that these state funding mechanisms are not subject to the FERC’s direction, but rather are subject to the terms of the Amended Settlement Agreement, to which the Commission is not a signatory.

The California bond measure is part of a water bond enacted by the California legislature in November 2009 and approved by voters in 2014 to fund the difference between the customer surcharges administered by the California and Oregon PUCs and the actual cost of dam removal, up to $250,000,000. In 2016, the state legislature appropriated the bond funds to the California Natural Resources Agency (CNRA) for disbursement to the Renewal Corporation.

The FERC Order indicated that Renewal Corporation has stated that both the Oregon and California Funding Agreements have expiration dates of January 31, 2022, and that the California Bond Measure has an expiration date of June 30, 2021, with exceptions for funds devoted to ongoing mitigation or monitoring activities. In response to FERC's question about whether the funding sources would still be available if facilities removal extends beyond these dates, Renewal Corporation only stated that it would seek extensions from the states, but provided no assurances that the states would be amendable to those extensions.

During AECOM's presentation to the BOC at the October 23, 2018 introductory meeting, it was indicated that the project had been costed for "Full Removal" and "Partial Removal" Schemes. Full removal includes removal of the dams, conveyances and powerhouses to near-pre-project conditions, while partial removal would leave some of the project components, primarily non-water retaining facilities, partially or fully in place. However, in either of the full or partial removals, the dams would be completely removed to the point of allowing free flow conditions for volitional salmonid migration to occur.

It is noted that the FERC Order references the December 4, 2017 Renewal Corporation filing that, "[c]omitted and available funds to implement the [Amended Settlement Agreement] exceed AECOM's verified budget by well over $100,000,000", but acknowledged that "it is theoretically possible that the full amount of the $450 million would not be sufficient" to fully remove the project facilities and restore the area. In addition, the FERC Order notes that PacifiCorp and Renewal Corporation have entered into an operations and maintenance agreement that provides for PacifiCorp to continue to operate and maintain the project until the removal of the facilities is imminent. However, the agreement is not effective until Renewal Corporation accepts (and the FERC approves) the transfer of license for the Lower Klamath Project. In addition, the FERC has required that "a detailed explanation as to how Renewal Corporation would provide or obtain the funds necessary to operate and maintain the Lower Klamath in the event that the Commission does not approve the surrender application. It is noted that the BOC has not seen that explanation. The FERC also required "a detailed explanation of how the Renewal Corporation 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." The BOC has not seen that explanation either. The BOC's conclusions regarding the project cost versus available funds is provided below.

Other Cost Estimate Considerations

a. *__Overall Cost Estimate.__* BOC members met with AECOM in Denver on November 13th and 14th, 2018. The meeting was productive and the BOC appreciated the opportunity to better understand of the cost estimate. The BOC recognizes that the cost estimate is a live document and is subject to ongoing design changes and improvements, as well as peer review and overall quality control. During the meeting, a number of inconsistencies for potential improvements to the cost estimate were discussed. Some of these would potentially increase the cost estimate, while others would potentially decrease the cost estimate. The BOC did not attempt to recap those areas of discussion in this document, but will rely on AECOM to make adjustments as they deem appropriate.

b. *Site Overhead or General Conditions Cost.* The current cost estimate attempts to capture the contractor's general conditions or site overhead by adding 15% of direct costs. This does not seem to be uniformly applied to all direct costs. Exceptions include Restoration, Transportation, Recreation, Mitigation, and Monitoring. The BOC would encourage the estimators to detail this cost, due to the nature of the work. There are really three primary work sites (Boyle, Copco 1&2, and Iron Gate), each requiring contractor site personnel such as managers, engineers, safety supervisors, QC personnel, etc., as well as second shift supervision as necessary. Additionally, each site will require offices, support equipment, vehicles, etc. Only by detailing these costs through the duration of the project, will the expected cost be ascertained.

Chant's standard 28 Item Indirect Cost accounts were reviewed with AECOM as an example of a contractor style WBS for Construction Indirect Costs. The BOC recommends that the next iteration of the Cost Estimate use such a template to detail Indirect Costs.

c. *Contractor Corporate Overheads and Profit.* The Cost Estimate includes an allowance for Contractor Overheads and Profit of 8% applied to Construction Direct and Indirect Costs. The USACE Profited Weight Guidelines were used to arrive at this rate. This does not account for the Contractors General Overhead, sometimes referred to as G&A, Corporate Overhead, or Home Office Overhead.

For the type of PDB Contractors that this Project will attract (large, civil self-performers) this appears to be very low. The BOC would expect a contractor to have between 6% and 8% Corporate Overheads (this can be ultimately supported by audit if necessary). This percentage is typically derived from Sales and not Cost of Sales. The BOC would suggest using 8% of Sales for Corporate Overheads.

A profit expectation in the order of 12% (or higher) would be more appropriate than the 8% listed. Current market conditions are such that contractor and subcontractor margin expectations are at the high end of the spectrum. This profit expectation will be directly related to contract language, risks borne by the Contractor, the definition of direct costs, and potential opportunities.

The Contractor's Corporate Overhead and Profit assignment would normally not include a risk component. Individual project related risks would be assessed and included in the Construction Indirect Cost (or elsewhere) as a separate line item and may be weighed against potential opportunities. Minimum margin guidelines may be related to certain productivity standard risks (minimum guideline not less than 60% of Labor Costs for example) but typically would again, not include any project specific known, known-unknown and unknown-unknown risks.

Margin (Corporate Overhead and Profit) under this perspective would total 20% compared to the 8% currently in the Cost Estimate.

The BOC's experience is that civil contractor's mark-up subcontractor's work at the same rate (more or less) as their self-performed work and much more than an ICI (building) contractor would. In any event, it is the BOC's opinion that the amount of subcontracted work identified in the Cost Estimate is very small, and this application would have minimal effect under the current cost estimate assumptions regarding subcontracting.

d. *Insurance Cost.* The PDB Contractor's insurance multiplier is stated at 1% of Construction Direct and Indirect Costs. The BOC believes that actual costs for the PDB Contractor will be lower if Renewal Corporation secures the project specific insurance policies contemplated by the Risk Management Plan (Appendix A to the Definite Plan). However, this percentage will increase if the PDB Contractor ultimately provides a CCIP. Such additional costs would largely be offset by reduced insurance costs incurred by Renewal Corporation, due to the shifting of insurance responsibilities.

As stated earlier, The BOC does not see a line item in the Cost Estimate for the LTC – which we anticipate being substantial in magnitude and needs to be identified and included in the overall Project Cost. It seems that the cost associated with an LTC is an expected cost and should be addressed as a cost line item, and not something absorbed in the contingency.

e. *Bond Cost.* The PDB Contractor's bond rate at 1% is considered adequate to provide 100% Performance and Labor and Material Payment surety instruments.

f. *Labor and Equipment Rates.* The labor rates included in the Cost Estimate were taken from a known and current fair wage analysis and include payroll burdens, add-ons and fringes. Labor related costs such as travel, living out per diem rates, small tool allowances, safety supplies and items of like import are assumed in the Cost Estimate to be included in the Construction Indirect Costs, although this is not clear. The BOC has requested a breakdown of labor rates used in the cost estimate.

Equipment rates were obtained from Equipment Watch Blue Book, which are assumed to include equipment ownership, indirect, insurance, interest expense, operation and maintenance costs, without the operator. In equipment intensive undertakings such as the Project, equipment mobilization is an item that should be assessed in detail. Other components of equipment rates, most importantly ownership and ownership related costs, should also be assessed based on the actual envisioned make-up of the contemplated fleet. Estimators should evaluate "dead rent" or underutilized equipment that will be required at the project and capture these costs in the estimate. The remote nature of the project will dictate that certain support equipment will need to be present on the project but will lack full utility. Examples of this may be cranes, forklifts, water trucks, blades, as well as light equipment such as pumps and generators.

g. *Productivity Index Setting.* Correlation of Cost Estimates with past cost experience is an important component of an effective high confidence cost estimating processes. An important aspect of this is correlation is relating past productivities to the context of the Project. We did not see tangible evidence of validation having taken place for most of the outputs from the Cost Estimate. AECOM seems to have assumed a progressive labor environment in compiling the Cost Estimate, meaning a unionized setting with non-restrictive manning stipulations and workable jurisdictional conditions.

h. *Schedule.* The construction schedule supporting the Cost Estimate reflects the schedule presented in the Definite Plan. AECOM informed us that a more detailed P6 (Critical Path or CPM) supported execution schedule is well advanced in development and will be made available to the BOC - but likely not by the due date for the November 28 BOC report.

One issue that was identified during discussions was the definition of "in-channel work" and identifying which work would be considered not permissible outside of the in-water work windows. The constraints presented by the "likely" permit restrictions and their possible effect on the Project Schedule need to be better understood.

While the costs and responsibility for Iron Gate and Fall Creek hatchery renovations and improvements are outside Lower Klamath Project decommissioning and removal costs these actions are linked to dam removal by a clause in the Amended Settlement Agreement (SA). The SA indicates that for both hatcheries there appears to be a contingency established by the SA that production facilities capable of meeting mitigation requirements must be operational by the time of removal of Iron Gate Dam. The implications of delay are not expounded upon. Given the federal ESA status and associated mitigation obligations under the existing Biological Opinion, additional explanation of this contingency and consequences of delay on vulnerabilities under ESA are warranted.

i. *Non Dam-Related Construction Costs.* Restoration of Vegetation was not considered as a being delivered directly by the PDB Contractor. This grouping of costs was assembled using a Plant Item based on the experience of AECOM (and others), then the total was distributed (allocated) to the various line items within the grouping. Th BOC considers that to be a prudent approach as it avoids double accounting of costs when each individual line item is addressed separately. We did not review the details of the Plant Item cost compilation for this work. It would be good practice to provide reference project costs, with appropriate adjustments for escalation, location, etc.

The estimated costs for the Transportation (Bridges, Culverts and Roads) Grouping is based on a comprehensive plan that may vary from what is ultimately executed BUT the plan as described represents a valid concept solution in our opinion. Analysis of the costs for the bridge components of this grouping (using parametric costs from our past experience) found the estimated costs to be within the range of expectations for like work. Some costs here were referenced to CalTrans cost indexes.

Mitigation Measures and Monitoring and Other Costs, like Permitting, Environmental Compliance Support, Design Data, Engineering – AECOM, Procurement and Construction Management are substantial but not warranted by AECOM. They are all reported to have been established from AECOM's past experience on similar work, confirmed with a detailed FTE analysis (only that for Construction Management was presented in the Cost Estimate information) and compared to typical industry standards as percentage of construction costs.

CONCLUSIONS

The BOC has been asked to assess the adequacy of funds and the funding mechanisms described in the information that has been provided by the Renewal Corporation. The findings resulting from the review of the documents provided by the Renewable Corporation indicates that it is the BOC's opinion that it is likely that there will be sufficient funding within the state cost cap. However, the information reviewed also indicates that there is a possibility of exceeding the state cost cap for both full removal and partial removal schemes, although the high end cost for the partial removal appears to get the project costs to be within about $16,000,000 above the cap. (P80 Cost November 2018)

It is not clear to the BOC what will happen if the state cost cap of $450,000,000 is exceeded by even one dollar. It is the BOC's opinion that while not likely based on AECOM's analysis, the possibility of the project exceeding the state cost cap cannot be ruled out. Therefore, it is the BOC's opinion that some planning and/or restructuring with regard to what happens if the project overruns state cost cap is imperative. This could be agreements with the states to obtain further contributions from rate payers or possibly co-licensing between the current Licensee and the Transferee. There may well be other alternatives; however, leaving this aspect of the project undefined carries the risk of incomplete dam removal and incomplete restorative efforts which could result in public safety issues and adversely affect the future of other similar river restoration schemes.

RECOMMENDATIONS

1. The BOC recommends that a "Plan B" be developed with regard to where additional funding would come from should the project costs exceed the state cost cap.
2. The BOC recommends that AECOM prepare another version of the Project's Cost Estimate having reflected on the questions, observations and comments of the BOC and that the BOC be afforded the opportunity to again meet with AECOM to review the *revised* Cost Estimate in detail. It would be beneficial to this review if AECOM prepared a summary of the nature of the changes (by D – Grouping) made to the original version of Appendix P including a quantitative comparison (again by D-Grouping) of the net impact of the adopted changes on the Cost Estimate.
3. The BOC recommends that Renewal Corporation provide a copy of the RFP (including draft contract) being directed to PDB Contractors, for BOC review.

NEXT MEETING

The BOC understands that the next meeting is likely to occur in early 2019 for the purpose of conducting a Potential Failure Modes Analysis to identify and classify construction related Potential Failure Modes.

CLOSURE

The BOC respectfully submits letter report No. 1 providing our findings, conclusions and recommendations addressing the questions raised regarding Renewal Corporation's capacity to realize the Klamath River Renewable Project.

Yours sincerely,

MaryLouise Keefe

Steve Coombs

James E. Borg

Craig Findlay

Dan Hertel

Ted Chant

EXHIBIT B

KLAMATH RIVER RENEWAL CORPORATION

December 4, 2018

TO: Lower Klamath Board of Consultants
Attn: James E Borg

FROM: Klamath River Renewal Corporation

RE: **Letter Report; Board of Consultants Mtg. No. 1, Lower Klamath Project FERC Nos. P-2082, P-14803**

The Klamath River Renewal Corporation ("KRRC") extends its thanks and appreciation to all members of the Board for their hard work and thoughtful responses to the questions that the Federal Energy Regulatory Commission ("FERC") asked the Board to address in this Report. In the November 28, 2018 call with PacifiCorp and KRRC, the Board did a walk-through of the report and asked us to provide any questions or clarifications on the report. KRRC offered to provide such questions for clarification by December 4, in preparation for the KRRC's filing of the Report and our responses with FERC on December 12, 2018.

As we prepare our response to FERC, there are a few items that we would like to ask the Board to clarify or confirm. KRRC defers to the Board and its judgment as to each of the items listed below. However, if the Board feels that any of these items warrant further discussion, please suggest a time, and we will follow up to schedule a call. Thank you.

We request substantive clarifications with respect to several statements under Question 5 and Conclusions. This memorandum otherwise proposes non-substantive clarifications as indicated. We have organized this memorandum to track the sections of your Report.

UNDERSTANDING OF THE ASSIGNMENT

Page 2 (third paragraph, first sentence): the Report states that the "Renewal Corporation" requested the Board's review. KRRC believes that it would be more accurate to say that FERC (not the Renewal Corporation) "requested the BOC's review of the adequacy of cost estimates, insurance, bonding, and the overall financial resources available to implement the Definite Plan."

FINDINGS

Question 1

Page 3, Question 1(a): please add the word "of" to the last sentence on page 3, so that the sentence would read as follows: "AECOM had not categorized their Cost Estimate and advancing an understanding of the nature of the Cost Estimate will benefit from them doing so."

Page 4, Question 1c: please add a period at the end of the third sentence in this paragraph, so that the sentence would read as follows: "We would anticipate another two or possibly three iterations in the cost estimate compilation process to reach an acceptable finished product of a Class 3 Cost Estimate."

Question 2

Page 4, Question 2a: please move the period at the end of the third sentence this paragraph outside of the parenthetical, so that the sentence would read as follows: "It is realistic to anticipate that a major change could occur on this project, as has happened on significant civil work in recent history (Calaveras Dam, Oakland Bay Bridge, Devil's Slide, the Boston Big Dig)."

Question 4

Page 6, Question 4a: the last sentence of the paragraph says that "[t]his helps to staff and stakeholders prioritize the treatment of risks." Please delete the word "to," so the sentence would read as follows: "This helps staff and stakeholders prioritize the treatment of risks."

Question 5

We have a substantive question about the following highlighted statements on page 8:

> [T]he FERC has required that "a detailed explanation as to how Renewal Corporation would provide or obtain the funds necessary to operate and maintain the Lower Klamath in the event that the Commission does not approve the surrender application. It is noted that the BOC has not seen that explanation. The FERC also required "a detailed explanation of how the Renewal Corporation 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." The BOC has not seen that explanation either.

KRRC did respond to both of these additional information requests. KRRC's response was filed with FERC on June 28, 2018. These responses are highlighted and attached to this memorandum for the Board's reference. We respectfully ask:

- Did the Board consider the attached June 28, 2018 responses 3(b) and 3(c) when it noted that it had not seen KRRC's response to FERC's additional information requests?
- To the extent these responses were not considered by the Board, and to the extent that these responses have any bearing on Recommendation No.1 (i.e., KRRC to develop a "Plan B" with regard to where additional funding would come from should the project costs exceed the state cost cap), does the Board have any further comments or direction

that it can provide as to steps that KRRC has advised FERC that it will follow in the event that funds equal to or greater than the maximum cost estimate are needed to implement the Definite Plan?

Other Cost Estimate Considerations

Page 9, item a (Site Overhead or General Conditions Cost): for clarity, please add the words "work breakdown structure" to the first sentence of the second paragraph, so that the sentence would read as follows: "Chant's standard 28 Item Indirect Cost accounts were reviewed with AECOM as an example of a contractor style work breakdown structure (WBS) for Construction Indirect Costs.

Page 11, item I (Non Dam-Related Construction Costs): for clarity, please delete the word "a" in the first sentence of this paragraph, so that the sentence would read as follows: "Restoration of Vegetation was not considered as being delivered directly by the PDB Contractor."

CONCLUSIONS

Page 11 (first paragraph in this section): the Report refers to the "Renewable Corporation." Please change to "Renewal Corporation."

We also have a substantive question about the highlighted statement on page 11:

> There may well be other alternatives; however, leaving this aspect of the project undefined carries the risk of incomplete dam removal and incomplete restorative efforts which could result in public safety issues and adversely affect the future of other similar river restoration schemes.

KRRC understands the Board's concern with risks associated with incomplete dam removal and incomplete restorative efforts. KRRC does not understand, however, the stated concern with risks to "the future of other similar river restoration schemes." KRRC is not aware of any "similar river restoration schemes." This risk seems to be both speculative and beyond the scope of Board's current inquiry. We respectfully ask:

- Is there another "river restoration scheme" that the Board was referring to, and believes could be adversely impacted by KRRC's project?
- If there is not another "river restoration scheme" of particular interest or concern to the Board, or relevant to the scope of this Report, would the Board consider deleting this statement from its conclusions?

CLOSURE

Page 12: the Report refers to the "Klamath River Renewable Project." Please change to "Klamath River Renewal Project."

EXHIBIT C

December 10, 2018

Mr. Mark Bransom
Klamath River Renewal Corporation
423 Washington St. 3rd Floor
San Francisco, CA 94111

Re: Letter Report; Board of Consultants Mtg. No. 1,
Lower Klamath Project FERC Nos. P-2082, P-14803
Klamath River Renewal Corporation

Dear Mr. Bransom,

The Independent Board of Consultants for the review of the Lower Klamath Project respectfully submits the following Report No. 1.

INTRODUCTION

A Board of Consultants (BOC) was convened to review and assess the aspects related to the proposed Lower Klamath Project (Project) and the financial ability of the Klamath River Renewal Corporation (Renewal Corporation) to complete the process, including the additional information required in the Appendix to the Commission's March 15, 2018 order (per FERC's May 22, 2018 letter to the Renewal Corporation).

This letter report presents our Findings, Conclusions and Recommendations following our first BOC meeting of October 24, 2018, as well as our informal meeting and site visit of October 23, 2018. This includes our review of the materials and correspondence provided by the project team and by Renewal Corporation regarding the ongoing studies for the proposed removal and restoration associated with the Lower Klamath Project comprised of J.C. Boyle, Copco 1, Copco 2, and Iron Gate Hydroelectric Projects (FERC No. P-14803).

BOC Meeting No. 1 primarily addressed the anticipated transfer of these dam and hydropower facilities from current owner PacifiCorp to Renewal Corporation. Matters addressed included the Definite Plan, the feasibility and cost associated with the Definite Plan, as well as the capacity of Renewal Corporation to accept transfer of license from PacifiCorp.

Subsequent to the meetings of October 23 and October 24, AECOM representatives met with BOC members Ted Chant and Dan Hertel in Denver, CO. Additionally, separate conference calls were held between BOC member Steve Coombs and (1) Seth Gentzler (AECOM); (2) representatives from Renewal Corporation, Hawkins, Delafield & Wood LLC, and Willis Towers Watson (Willis) and (3) Charlie Cantwell (Willis).

REVIEW DOCUMENTS

In advance of the informal meeting, site visits and initial BOC meeting, the Renewal Corporation provided the BOC with a number of documents for review, including the following:

1. Definite Plan with Appendices A through Q (with specific attention to Appendix A "Risk Management Plan" and Appendix P "Estimate of Project Cost Report");

2. Klamath River Renewal Corporation Informational Filing in Support of Joint Application for License Transfer and License Amendment, dated March 1, 2017 (with specific attention to pp. 5-8 "Technical Capacity," pp 8-14 "Financial Capacity," and the attachments referenced therein);

3. Response to April 24, 2017 Additional Information Request, dated June 23, 2017 (with specific attention to Renewal Corporation Response Nos. 1, 2.B., 3, 6.B. and 10, and the exhibits referenced therein);

4. Response to October 5, 2017 Additional Information Request, dated December 4, 2017 (with specific attention to Renewal Corporation Response Nos. 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, and 13, and the exhibits referenced therein);

5. Appendix L to Amended Klamath Hydroelectric Settlement Agreement (KHSA);

6. KRRC "Reference Library" of associated documents, including FERC Additional Information Requests (AIRs) and Responses, Construction Photographs, KHSA, and various agreements.

Additional information pertinent to the assignment was subsequently provided by Renewal Corporation through BOC requests.

REFERENCE LIBRARY

During the BOC review, a number of additional references were provided by Renewal Corporation:

1. FERC Additional Information Requests and Renewal Corporation Responses
2. Final Oregon Clean Water Act Section 401 Certification
3. Draft California Clean Water Act Section 401 Certification
4. State Water Resources Control Board California Environmental Quality Act Scoping Report
5. PacifiCorp Design or As-built Drawings (CEII)
6. Available Dam Inspection Reports (CEII)
7. Available Support Technical Information Documents (STID, CEII)
8. Dam Construction Photos
9. Amended Klamath Hydroelectric Settlement Agreement
10. Renewal Corporation Funding Agreements
11. U.S. Department of Interior, 2012 Environmental Impact Statement
12. U.S. Department of Interior, Klamath Dam Removal Overview Report for the Secretary of the Interior

UNDERSTANDING OF THE ASSIGNMENT

This letter report presents the BOC's findings, conclusions and recommendations regarding the five specific questions posed in the FERC letter dated March 15, 2018.

The five specific questions for BOC review were:

1. The updated maximum and probable cost estimate, and the probability that each will occur;
2. The updated project contingency reserve based on updated project costs;
3. The types and amounts of insurance policies and surety arrangements anticipated to be secured by Renewal Corporation;
4. The risk register and risk management plan;
5. The adequacy of funds and the funding mechanisms described in the data package.

The Federal Energy Regulatory Commission requested the BOC's review of the adequacy of cost estimates, insurance, bonding, and the overall financial resources available to implement the Definite Plan. The BOC review findings and conclusions follow.

Additionally, in the Appendix to the Commission's March 15, 2018 order (per FERC's May 22, 2018 letter to the Renewal Corporation), information is specifically required regarding the following: a) A detailed explanation of how the Renewal Corporation would provide or obtain the necessary funds to operate the Lower Klamath Project if the surrender is not approved before the expiration of the California and Oregon Funding Agreements and the California Bond Measure, b) A detailed explanation of how the Renewal Corporation would provide or obtain the necessary funds to decommission and remove the Lower Klamath Project facilities in the event that funds equal to or greater than the maximum cost estimate for the full removal alternative are required, and c) A detailed explanation of how operation and maintenance of the Lower Klamath Project will continue in the event the surrender is denied. The BOC does not have in its possession the materials described above and therefore is unable to address those details.

FINDINGS

Question 1 - The updated maximum and probable cost estimate, and the probability that each will occur

The BOC's review of the Definite Plan and AECOM Cost Estimate (Appendix P to the Definite Plan) is not intended to represent a quality control/quality assurance or independent technical review. The review is intended to provide a broad overview of AECOM's approach to planning the Project, a mid-level assessment of the appropriateness of the means, methods and sequencing of the detailed delivery plan (Cost Estimate), and an appraisal of the thoroughness of the Cost Estimate.

a. The BOC finds that the approach to meeting Project Objectives as presented in the Definite Plan, including conceptual designs and the selected means, and methods and sequencing of the work appropriately recognize project requirements and vulnerabilities.

b. The Association for the Advancement of Cost Engineering (AACE) Cost Estimate Classification System maps the phases and stages of project cost estimating together with a generic project scope definition maturity and quality of inputs. AECOM had not categorized their Cost Estimate and advancing an understanding of the nature of the Cost Estimate will benefit from them doing so. The BOC is most familiar with AACE recommendations for the hydropower industry (AACE Recommended Practice Manual 69R-1.) with respect to classifying cost estimates.

In accordance with AACE, a Class 3 Cost Estimate (hydropower industry) has the following characteristics:

- Maturity Level of Project Definition Deliverables (expressed as a % of complete definition) between 10% and 40%;
- End Usage (typical purpose of cost estimate) is for budget authorization or control;
- Methodology (typical estimating method) includes semi-detailed unit costs with assembly level line items;
- Expected Accuracy Range (typical variation in low and high ranges including P50 contingency) ranging from a Low of -10% to -20% to a High of +5% to +20%.

The BOC opines that the Maturity Level of Project Definition Deliverables meets or exceeds the Class 3 guideline. Given the nature of the work the typical estimating method expectation for Class 3 can be more than satisfied.

c. The BOC finds that the Cost Estimate as presented lacked a thorough internal quality control review on the part of AECOM. There are inconsistencies, coding errors and some omissions in the current product. We would anticipate another two or possibly three iterations in the cost estimate compilation process to reach an acceptable finished product of a Class 3 Cost Estimate.

d. The BOC finds that the context under which the Cost Estimate has been assembled is predicated on a *commercially viable* contract between Renewal Corporation and the Progressive Design-Build (PDB) Contractor that contemplates excusable delays and assignment of project risks to those parties best suited to manage them. The details of the ultimate PDB Contract are not currently known however. The BOC finds that the current Cost Estimate does not contemplate additional costs a PDB Contractor may charge related to a greater scope and level of assumed risks, beyond those typical to a PDB Contract.

e. The BOC finds that major shortcomings in the current cost estimate include the allowance provided for Contractor Overhead and Profit (which the BOC considers inadequate in the context of the Project), and the absence of cost premiums commensurate with the contemplated Klamath Corporation insurance program including, but not limited to the anticipated costs of the liability transfer entity. Additional comments with respect to the AECOM Cost Estimate can be found later in this Report under the heading Other Cost Considerations.

Question 2 - The updated project contingency reserve based on updated project costs

The BOC has reviewed Renewal Corporation's overall approach to project contingency reserve. However, this review is not intended to represent a quality control independent technical review, nor re-assess probabilities of various cost and schedule risks. The BOC is intended to render its opinion if the overall approach taken by Renewal Corporation and AECOM is within industry guidelines, contemplates known risks with active response strategies, and if it is adequate.

a. The BOC finds that the general approach to contingency is within industry guidelines. However, any unforeseen significant cost would not be covered by the proposed funding. It is realistic to anticipate that a major change could occur on this project, as has happened on significant civil work in recent history (Calaveras Dam, Oakland Bay Bridge, Devil's Slide, the Boston Big Dig). Our concern would be for unforeseen cost overruns beyond the allowed contingency and project cost cap.

b. The BOC finds that the proposed level of contingency is unclear. Appendix P indicates that contingency was arrived at in two different ways; a) by using an allowance of 30% of direct construction costs and b) by using a Monte Carlo simulation to arrive at a total probable project cost. Under the first method, a contingency of about $65 million (Nov 2018) was stated, and under the second method, a contingency of $130 million was stated at the MP90 level of certainty. Appendix P seems to be conflicted regarding this contingency. Under Section 2.7 –Monte Carlo Analysis, it is stated that the P80 cost would be an industry standard. We agree with that. The P80 Cost is stated as approximately $465 million and includes $113 million in contingency (Nov 2018.) Section 2.7 then goes on to state: "*Due to the unique nature of this Project and the KRRC, KRRC selected a conservative P90 to represent the MPH for the Project. The P90 estimate covers the most likely final project cost in 90% of all scenarios.*" This is restated in Section 4.1 in a similar manner.

Appendix P also states an "Estimated Project Cost" as about $400 million (Nov 2018), including a contingency of $65 million, or 30% of Direct Construction Cost. The actual project contingency appears to be driven by the available funds, minus the expected cost.

c. It is the BOC's understanding that some movement toward the partial removal option could expand the contingency accordingly on an as-needed basis as the design proceeds and construction begins.

Question 3 - The types and amounts of insurance policies and surety arrangements anticipated to be secured by the Renewal Corporation

The BOC review of the Risk Management Plan (Appendix A to Definite Plan) is not intended to represent a risk assessment of the Project. Instead, it is intended to assess the overall approach taken so far to identify and manage risks associated with the project. It is recognized that the Risk Management Plan must address the requirements of the Amended Settlement Agreement, specifically Appendix L- DRE and Contractor Qualifications, Insurance, Bonding, and Risk Mitigation Requirements.

a. The BOC finds that the types of insurance policies and bonds identified in the Risk Management Plan and the anticipated insured limits of liability are appropriate for a project of this type, size and duration. The BOC opines that one area that should be explored, prior to the time a guaranteed maximum price is negotiated, is to obtain an alternative from the selected PDB Contractor to supply a Contractor Controlled Insurance Program (CCIP) for Commercial General Liability, Excess Liability and Workers Compensation. Generally, large sophisticated contractors are able to secure CCIP's with better terms. Also, the labor-intensive administration of the CCIP would become the responsibility of the PDB Contractor.

The BOC opines that it is not reasonably feasible for Renewal Corporation to include Workers Compensation insurance under an Owner Controlled Insurance Program or OCIP structure because (a) the statutory requirements in Oregon make it difficult to do so (or may preclude it altogether), and (b) there would be insurer mandated requirements to escrow monies to fund the payment of claims falling within applicable deductibles, and to secure and maintain an ongoing letter of credit to collateralize the program. In addition, Workers Compensation claims may not settle for many years following completion of the project. The BOC opines that it may be acceptable for the PDB Contractor and its subcontractors to provide traditional Workers compensation insurance not under a CIP approach. However, the Commercial General Liability and Excess Liability should be addressed by a CIP, whether sponsored by the selected PDB Contractor or Renewal Corporation.

b. The Cost Estimate does not include line items for project-specific insurance policies or estimated cost for a specialty corporate indemnitor (a Liability Transfer Corporation or LTC). Renewal Corporation indicated that the estimated cost for these two items is included within the "Design & Construction Contingency" line item (set forth in Table 1 on page 64, Appendix P of the Definite Plan). The estimated cost for these two items, which is substantial, should be removed from the Design & Construction Contingency (thereby potentially reducing this line item) and separately identified and added to the Cost Estimate (similar to how corporate insurance costs of Renewal Corporation are identified).

Question 4 - The risk register and risk management plan

A risk register is a tool that project teams use to identify, assess, address and document risks throughout the project. It is a living document. The first iteration of the Risk Register appears as Attachment A to the Risk Management Plan and is an excellent start. The BOC suggests the following improvements to the Risk Register.

a. For projects over $100 million, it the BOC's opinion that it is an industry best practice that the risk register design be modified to incorporate quantitative risk analysis [for each identified risk, there are a low/high/ probable percentage; cost impact in dollars (low/high/probable) and time impact in days (low/most high/probable). This helps staff and stakeholders prioritize the treatment of risks.

b. A "key" should be inserted at the top of each column which defines/describes the inputs (similar to the "New Tunnel" risk register supplied by AECOM). This will help readers and users of the risk register to better understand the information.

c. The register should be expanded further to include additional risks and be updated monthly after the PDB Contractor is under contract.

The Risk Management Plan (Appendix A to the Definite Plan) is an excellent road map to overall structure. However, a project specific- written Risk Management Plan should be drafted that addresses how risk management will actually be performed. This typically includes methodology, roles and responsibilities, timing, development of strategies to address the risks inventoried in the risk register, reports/deliverables, follow up procedures and the like. The Plan does not need to be complicated or lengthy to be effective. But staff and stakeholders should be able to readily understand who is doing what, when, how and why.

A significant part of the project risk management strategy involves the scope and level of the insurance and indemnification provisions that will be contained in the PDB Contract (being directed to selected PDB bidders) and ultimately negotiated and agreed to by the design-builder. The PDB Contract was not available for BOC review during the assignment.

At this point there is nothing available for BOC review regarding the potential use of an LTC. An LTC may be used to satisfy the requirements of Appendix L. However, potential residual liabilities associated with the project will not be fully known until the PDB Contract is fully negotiated and the project specific insurance policies are finalized and become effective. As such, this will be available for further BOC review at a later time.

Question 5 - The adequacy of funds and the funding mechanisms described in the data package

As articulated in their "Order Amending License and Deferring Consideration of Transfer Application" (Order), dated March 15, 2018, the Federal Energy Regulatory Commission (FERC) has limited its Order to the "Application to Amend" the license for the existing Klamath Project to create the new Lower Klamath Project, licensed to PacifiCorp Energy. This Order separated the "Application to Transfer" the new Project to the Renewal Corporation due to concern, in part, with regard to whether the transferee will have the financial capacity to safely remove project facilities and adequately restore project lands.

From reviewing the Order, the BOC understands that the FERC policy in past decisions held that a transfer may be approved on a showing that the transferee is qualified to hold the license and operate the project, and that a transfer is in the public interest. The Order indicates that the FERC has not previously considered an application to transfer a license to a new entity whose sole purpose is to surrender the license and decommission the project, as is the case with the Lower Klamath River Project. To exemplify their concern, the FERC Order references two previous projects that involved surrender and decommissioning. In light of administrative inefficiencies and liability concerns that arose, the transfer of both projects took several years to resolve. In one case, the FERC denied the applications as initially proposed and advised that the original Licensee and the Transferee to become co-licensees. This change ameliorated concerns with the adequacy of funding, so the FERC approved the license transfer, and subsequently the surrender. As a result of concerns with the adequacy of funding for the Lower Klamath Project removal, the FERC has asked that the BOC opine on the adequacy of funds and funding described in the Definite Plan.

The BOC understands from the FERC Order that Renewal Corporation will have three sources of funding for decommissioning, removal, and restoration of the Lower Klamath Project, totaling $450,000,000:

- $184,000,000 from the Oregon Customer Surcharge;
- $16,000,000 from the California Customer Surcharge;
- $250,000,000 from the California Bond Measure.

These funds, known collectively as the "state cost cap", are stated to be the maximum monetary contributions available from the states of Oregon and California. The applicants have not identified any additional sources of funding if the cost of the measures required exceeds the state cost cap.

The BOC understands that trust accounts have or are to be established, two in each state, to hold and administer charges collected from PacifiCorp's retail customers in California and Oregon. The collection of the customer surcharges began in May 2011 pursuant to orders issued by the Oregon and California Public Utility Commissions (PUCs.) The Renewal Corporation is the beneficiary of the trust accounts.

On January 24, 2017, the Oregon PUC approved the Oregon Funding Agreement for the disbursement of funds from the two Oregon trust accounts over three phases: startup activities, planning, and regulatory work (Phase 1); development of the Definite Plan and procurement of contractors (Phase 2); and implementation of the Definite Plan (Phase 3). In its March 1, 2017 filing, the Renewal Corporation provided that it had entered into an agreement with the Oregon Department of Fish and Wildlife for the disbursement of $308,369 in initial startup costs as part of Phase 1. The Oregon Funding Agreement provides that, before disbursements may be made for Phase 2 or 3 activities, the Renewal Corporation must submit project descriptions and budgets for those activities. Renewal Corporation filed a proposed California Funding Agreement that provided for disbursement of funds over three phases, similar to the Oregon Funding Agreement, and was authorized by the CPUC in December 2017. The FERC has indicated concern that these state funding mechanisms are not subject to the FERC's direction, but rather are subject to the terms of the Amended Settlement Agreement, to which the Commission is not a signatory.

The California bond measure is part of a water bond enacted by the California legislature in November 2009 and approved by voters in 2014 to fund the difference between the customer surcharges administered by the California and Oregon PUCs and the actual cost of dam removal, up to $250,000,000. In 2016, the state legislature appropriated the bond funds to the California Natural Resources Agency (CNRA) for disbursement to the Renewal Corporation.

The FERC Order indicated that Renewal Corporation has stated that both the Oregon and California Funding Agreements have expiration dates of January 31, 2022, and that the California Bond Measure has an expiration date of June 30, 2021, with exceptions for funds devoted to ongoing mitigation or monitoring activities. In response to FERC's question about whether the funding sources would still be available if facilities removal extends beyond these dates, Renewal Corporation only stated that it would seek extensions from the states, but provided no assurances that the states would be amendable to those extensions.

During AECOM's presentation to the BOC at the October 23, 2018 introductory meeting, it was indicated that the Project had been costed for "Full Removal" and "Partial Removal" Schemes. Full removal includes removal of the dams, conveyances and powerhouses to near-pre-project conditions, while partial removal would leave some of the project components, primarily non-water retaining facilities, partially or fully in place. However, in either of the full or partial removals, the dams would be completely removed to the point of allowing free flow conditions for volitional salmonid migration to occur.

It is noted that the FERC Order references the December 4, 2017 Renewal Corporation filing that, "[c]omitted and available funds to implement the [Amended Settlement Agreement] exceed AECOM's verified budget by well over $100,000,000", but acknowledged that "it is theoretically possible that the full amount of the $450 million would not be sufficient" to fully remove the project facilities and restore the area. In addition, the FERC Order notes that PacifiCorp and Renewal Corporation have entered into an operations and maintenance agreement that provides for PacifiCorp to continue to operate and maintain the Project until the removal of the facilities is imminent. However, the agreement is not effective until Renewal Corporation accepts (and the FERC approves) the transfer of license for the Lower Klamath Project. As stated in the FERC March 15, 2018 Order, the FERC has required that "a detailed explanation as to how Renewal Corporation would provide or obtain the funds necessary to operate and maintain the Lower Klamath in the event that the Commission does not approve the surrender application." The FERC also required "a detailed explanation of how the Renewal Corporation 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." KRRC responded to these questions in their June 28, 2018 letter. However, the responses to the FERC March 15, 2018 Order do not provide any specific mechanism or "Plan B" to address any potential project overruns beyond the current $450 Million cost cap.

The following examples from the June 28th response help to demonstrate our concern:

> "If overall project cost is anticipated to exceed $450 million, and if the risk and probability of such exceedance is not sufficiently covered by insurance, performance bond or other indemnification or security instruments, ***then KRRC, in consultation with the parties, would decide if the project can be modified to make it more financially viable"***.

> "If the foregoing measures are not sufficient, consistent with Section 7.2.l(A)(S) of the KHSA, KRRC could also pursue additional funds to address such a cost overrun. ***KRRC has not sought and does not have any legally enforceable commitments for additional funds*** to address this contingency at this time. KRRC believes that, if necessary, additional funding in material amounts would be available if necessary, to complete the project.,."

> "KRRC is confident that it is adequately funded to complete the project. ***In the unlikely event, however, that its current funding commitments are inadequate, KRRC will still have viable paths forward to complete the dam· removal project."***

The response discusses vague future measures, which the BOC has not seen and therefore cannot evaluate. It is further worth noting that any significant unforeseen cost that would cause the Project to exceed the current $450 Million cost cap would not likely be identified until after the Surrender or when the Project is well underway.

Other Cost Estimate Considerations

a. *Overall Cost Estimate.* BOC members met with AECOM in Denver on November 13th and 14th, 2018. The meeting was productive and the BOC appreciated the opportunity to better understand of the cost estimate. The BOC recognizes that the cost estimate is a live document and is subject to ongoing design changes and improvements, as well as peer review and overall quality control. During the meeting, a number of inconsistencies for potential improvements to the cost estimate were discussed. Some of these would potentially increase the cost estimate, while others would potentially decrease the cost estimate. The BOC did not attempt to recap those areas of discussion in this document, but will rely on AECOM to make adjustments as they deem appropriate.

b. *Site Overhead or General Conditions Cost.* The current cost estimate attempts to capture the contractor's general conditions or site overhead by adding 15% of direct costs. This does not seem to be uniformly applied to all direct costs. Exceptions include Restoration, Transportation, Recreation, Mitigation, and Monitoring. The BOC would encourage the estimators to detail this cost, due to the nature of the work. There are really three primary work sites (Boyle, Copco 1&2, and Iron Gate), each requiring contractor site personnel such as managers, engineers, safety supervisors, QC personnel, etc., as well as second shift supervision as necessary. Additionally, each site will require offices, support equipment, vehicles, etc. Only by detailing these costs through the duration of the project, will the expected cost be ascertained.

Chant's standard 28 Item Indirect Cost accounts were reviewed with AECOM as an example of a contractor style work breakdown structure (WBS) for Construction Indirect Costs. The BOC recommends that the next iteration of the Cost Estimate use such a template to detail Indirect Costs.

c. *Contractor Corporate Overheads and Profit.* The Cost Estimate includes an allowance for Contractor Overheads and Profit of 8% applied to Construction Direct and Indirect Costs. The USACE Profited Weight Guidelines were used to arrive at this rate. This does not account for the Contractors General Overhead, sometimes referred to as G&A, Corporate Overhead, or Home Office Overhead.

For the type of PDB Contractors that this Project will attract (large, civil self-performers) this appears to be very low. The BOC would expect a contractor to have between 6% and 8% Corporate Overheads (this can be ultimately supported by audit if necessary). This percentage is typically derived from Sales and not Cost of Sales. The BOC would suggest using 8% of Sales for Corporate Overheads.

A profit expectation in the order of 12% (or higher) would be more appropriate than the 8% listed. Current market conditions are such that contractor and subcontractor margin expectations are at the high end of the spectrum. This profit expectation will be directly related to contract language, risks borne by the Contractor, the definition of direct costs, and potential opportunities.

The Contractor's Corporate Overhead and Profit assignment would normally not include a risk component. Individual project related risks would be assessed and included in the Construction Indirect Cost (or elsewhere) as a separate line item and may be weighed against potential opportunities. Minimum margin guidelines may be related to certain productivity standard risks (minimum guideline not less than 60% of Labor Costs for example) but typically would again, not include any project specific known, known-unknown and unknown-unknown risks.

Margin (Corporate Overhead and Profit) under this perspective would total 20% compared to the 8% currently in the Cost Estimate.

The BOC's experience is that civil contractor's mark-up subcontractor's work at the same rate (more or less) as their self-performed work and much more than an ICI (building) contractor would. In any event, it is the BOC's opinion that the amount of subcontracted work identified in the Cost Estimate is very small, and this application would have minimal effect under the current cost estimate assumptions regarding subcontracting.

d. *Insurance Cost.* The PDB Contractor's insurance multiplier is stated at 1% of Construction Direct and Indirect Costs. The BOC believes that actual costs for the PDB Contractor will be lower if Renewal Corporation secures the project specific insurance policies contemplated by the Risk Management Plan (Appendix A to the Definite Plan). However, this percentage will increase if the PDB Contractor ultimately provides a CCIP. Such additional costs would largely be offset by reduced insurance costs incurred by Renewal Corporation, due to the shifting of insurance responsibilities.

As stated earlier, The BOC does not see a line item in the Cost Estimate for the LTC – which we anticipate being substantial in magnitude and needs to be identified and included in the overall Project Cost. It seems that the cost associated with an LTC is an expected cost and should be addressed as a cost line item, and not something absorbed in the contingency.

e. *Bond Cost.* The PDB Contractor's bond rate at 1% is considered adequate to provide 100% Performance and Labor and Material Payment surety instruments.

f. *Labor and Equipment Rates.* The labor rates included in the Cost Estimate were taken from a known and current fair wage analysis and include payroll burdens, add-ons and fringes. Labor related costs such as travel, living out per diem rates, small tool allowances, safety supplies and items of like import are assumed in the Cost Estimate to be included in the Construction Indirect Costs, although this is not clear. The BOC has requested a breakdown of labor rates used in the cost estimate.

Equipment rates were obtained from Equipment Watch Blue Book, which are assumed to include equipment ownership, indirect, insurance, interest expense, operation and maintenance costs, without the operator. In equipment intensive undertakings such as the Project, equipment mobilization is an item that should be assessed in detail. Other components of equipment rates, most importantly ownership and ownership related costs, should also be assessed based on the actual envisioned make-up of the contemplated fleet. Estimators should evaluate "dead rent" or underutilized equipment that will be required at the project and capture these costs in the estimate. The remote nature of the project will dictate that certain support equipment will need to be present on the project but will lack full utility. Examples of this may be cranes, forklifts, water trucks, blades, as well as light equipment such as pumps and generators.

g. *Productivity Index Setting.* Correlation of Cost Estimates with past cost experience is an important component of an effective high confidence cost estimating processes. An important aspect of this is correlation is relating past productivities to the context of the Project. We did not see tangible evidence of validation having taken place for most of the outputs from the Cost Estimate. AECOM seems to have assumed a progressive labor environment in compiling the Cost Estimate, meaning a unionized setting with non-restrictive manning stipulations and workable jurisdictional conditions.

h. *Schedule.* The construction schedule supporting the Cost Estimate reflects the schedule presented in the Definite Plan. AECOM informed us that a more detailed P6 (Critical Path or CPM) supported execution schedule is well advanced in development and will be made available to the BOC - but likely not by the due date for the November 28 BOC report.

One issue that was identified during discussions was the definition of "in-channel work" and identifying which work would be considered not permissible outside of the in-water work windows. The constraints presented by the "likely" permit restrictions and their possible effect on the Project Schedule need to be better understood.

While the costs and responsibility for Iron Gate and Fall Creek hatchery renovations and improvements are outside Lower Klamath Project decommissioning and removal costs these actions are linked to dam removal by a clause in the Amended Settlement Agreement (SA). The SA indicates that for both hatcheries there appears to be a contingency established by the SA that production facilities capable of meeting mitigation requirements must be operational by the time of removal of Iron Gate Dam. The implications of delay are not expounded upon. Given the federal ESA status and associated mitigation obligations under the existing Biological Opinion, additional explanation of this contingency and consequences of delay on vulnerabilities under ESA are warranted.

i. *Non Dam-Related Construction Costs.* Restoration of Vegetation was not considered as being delivered directly by the PDB Contractor. This grouping of costs was assembled using a Plant Item based on the experience of AECOM (and others), then the total was distributed (allocated) to the various line items within the grouping. Th BOC considers that to be a prudent approach as it avoids double accounting of costs when each individual line item is addressed separately. We did not review the details of the Plant Item cost compilation for this work. It would be good practice to provide reference project costs, with appropriate adjustments for escalation, location, etc.

The estimated costs for the Transportation (Bridges, Culverts and Roads) Grouping is based on a comprehensive plan that may vary from what is ultimately executed BUT the plan as described represents a valid concept solution in our opinion. Analysis of the costs for the bridge components of this grouping (using parametric costs from our past experience) found the estimated costs to be within the range of expectations for like work. Some costs here were referenced to CalTrans cost indexes.

Mitigation Measures and Monitoring and Other Costs, like Permitting, Environmental Compliance Support, Design Data, Engineering – AECOM, Procurement and Construction Management are substantial but not warranted by AECOM. They are all reported to have been established from AECOM's past experience on similar work, confirmed with a detailed FTE analysis (only that for Construction Management was presented in the Cost Estimate information) and compared to typical industry standards as percentage of construction costs.

CONCLUSIONS

The BOC has been asked to assess the adequacy of funds and the funding mechanisms described in the information that has been provided by the Renewal Corporation. Based on our review of the documents provided by the Renewal Corporation, it is the BOC's opinion that it is likely that there will be sufficient funding within the state cost cap. However, the information reviewed also indicates that there is a possibility of exceeding the state cost cap for both full removal and partial removal schemes, although the high end cost for the partial removal appears to get the project costs to be within about $16,000,000 above the cap. (P80 Cost November 2018)

It is not clear to the BOC what will happen if the state cost cap of $450,000,000 is exceeded by even one dollar. It is the BOC's opinion that while not likely based on AECOM's analysis, the possibility of the project exceeding the state cost cap cannot be ruled out. Therefore, it is the BOC's opinion that some planning and/or restructuring with regard to what happens if the project overruns state cost cap is imperative. This could be agreements with the states to obtain further contributions from rate payers or possibly co-licensing between the current Licensee and the Transferee. There may well be other alternatives; however, leaving this aspect of the project undefined carries the risk of incomplete dam removal and incomplete restorative efforts which could result in public safety issues.

RECOMMENDATIONS

1. The BOC recommends that a "Plan B" be developed with regard to where additional funding would come from should the project costs exceed the state cost cap.
2. The BOC recommends that AECOM prepare another version of the Project's Cost Estimate having reflected on the questions, observations and comments of the BOC and that the BOC be afforded the opportunity to again meet with AECOM to review the *revised* Cost Estimate in detail. It would be beneficial to this review if AECOM prepared a summary of the nature of the changes (by D – Grouping) made to the original version of Appendix P including a quantitative comparison (again by D-Grouping) of the net impact of the adopted changes on the Cost Estimate.
3. The BOC recommends that Renewal Corporation provide a copy of the RFP (including draft contract) being directed to PDB Contractors, for BOC review.

NEXT MEETING

To be determined.

CLOSURE

The BOC respectfully submits letter report No. 1 providing our findings, conclusions and recommendations addressing the questions raised regarding Renewal Corporation's capacity to realize the Lower Klamath Project.

Yours sincerely,

MaryLouise Keefe

Steve Coombs

James E. Borg

Craig Findlay

Dan Hertel

Ted Chant

CERTIFICATE OF SERVICE

I hereby certify that, on this 12th day of December 2018, I have served the public filing of Klamath River Renewal Corporation's Letter dated December 12, 2018 to FERC regarding Letter Report, Independent Board of Consultants Meeting No. 1 under Project Nos. P-14803-000 and P-2082-062 via email containing a link thereto, or via U.S.P.S. if no email address was available, upon each person designated on the official service list compiled by the Secretary in this proceeding.

/s/ Ivy Carr
Ivy Carr
Legal Practice Assistant
Perkins Coie LLP
10885 NE 4th Street, Suite 700
Bellevue, WA 98004-5579
(425) 635-1400
ICarr@perkinscoie.com

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