

Attachment A

**Board of Consultants, Supplemental Report no. 1 (July 29, 2019)
and Response of Renewal Corporation**

BOARD OF CONSULTANTS

Lower Klamath Project

July 29, 2019

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

**Re: Letter Report; Supplement to Board of Consultants Mtg. No. 1
Lower Klamath Project FERC Nos. P2082, P-14803
Klamath River Renewal Corporation**

Dear Mr. Bransom,

The Independent Board of Consultants (BOC) for the review of the Lower Klamath Project (Project) respectively submits the following Supplement to Board of Consultants Mtg. No. 1 Letter Report.

INTRODUCTION

The Board of Consultants (BOC) submitted a Letter Report, Board of Consultants Meeting No. 1 (Report No. 1) to the Klamath River Renewal Corporation (Renewal Corporation) on December 10, 2018. Report No. 1, provided as Appendix A, presents the BOC's initial assessment of the proposed Project and the Renewal Corporation's financial ability to complete the process, including the additional information required in the Appendix to the Commission's March 15, 2018 order (Federal Energy Regulatory Commission's May 22, 2018 letter to the Renewal Corporation).

This report supplements the findings, conclusions and recommendations presented in Report No. 1.

Since Report No. 1, the following significant changes to the Project development have occurred:

- The Renewal Corporation has entered into a Progressive Design Build (PDB) agreement with Kiewit Infrastructure West Co. (Kiewit) to perform the Preliminary Services phase of the Project; and
- The Renewal Corporation has entered into negotiations with Resource Environmental Solutions (RES) to assume the role as the Liability Transfer Corporation (LTC).

More importantly, the Renewal Corporation continues to dialogue with PacifiCorp and the States of California and Oregon (States) to come to an agreement on what constitutes an acceptable "real" and "feasible" indemnification limit which satisfies the requirements of paragraph 7.1.3 of the Klamath Hydroelectric Settlement Agreement (KHSA) dated February 18, 2010 as amended April 6, 2016 & November 30, 2016.

Subsequent to the submittal of Report No. 1, the BOC obtained additional information from the Renewal Corporation and participated in a number of informal meetings with the Renewal Corporation and their consultants to further clarify our understanding of the Renewal Corporation's financial ability to complete the Project in accordance with the requirements of the Federal Energy Regulatory Commission's (FERC) Federal Power Act (FPA) and the KHSA. The informal meetings focused on reviewing and assessing the ability of the Renewal Corporation to secure adequate funding for the removal of the dams, identify and manage risks, obtain appropriate levels of insurance, and meet the indemnification requirements in the KHSA.

The informal meetings consisted of the following:

- Review of Intermediate Cost Estimate Review – 2nd Readout, March 14, 2019;
- Review of Draft Project Agreement, March 25, 2019;
- AON's Preliminary Risk and Insurance Recommendations, May 2, 2019;
- RES's Liability Transfer Corporation (LTC) Approach, June 6, 2019;
- Review of Liability Transfer Plan, July 9, 2019; and
- Revised Cost Estimate Read-Out, July 9, 2019.

The BOC prepared memoranda summarizing the results of each of the six informal meetings. The informal meeting memoranda are provided as Appendix B.

REVIEW DOCUMENTS

The Renewal Corporation provided the BOC with a number of additional documents in advance of the informal meetings, as well as in response to requests from the BOC. Appendix C presents a list of the review documents provided by the Renewal Corporation.

REFERENCE LIBRARY

During the preparation of this report, a number of additional references were either obtained through the Renewal Corporation, or were provided by the BOC to Renewal Corporation for consideration:

1. Hydrology, Hydraulics, and Sediment Transport Studies for the Secretary's Determination on the Klamath River Dam Removal and Basin Restoration, Klamath River, Oregon and California Mid-Pacific Region, U.S. Department of the Interior, Bureau of Reclamation, April 2011.
2. Flood Insurance Study, Siskiyou County, California and Incorporated Areas, Flood Insurance Study Number 06093CV000a, Federal Emergency Management Agency, Effective January 19, 2011
3. Klamath Dam Removal Drawdown Scenario 8: Potential Impacts of Suspended Sediments on Focal Fish Species with and without Mechanical Sediment Removal Final Technical Memorandum, Stillwater Sciences, April 2011
4. Emergency Action Plan, Klamath Hydroelectric Project (FERC No. P-2018), PacifiCorp Hydro Resources, December 2018

5. J.C. Boyle Development, Klamath River Project, Supporting Technical Information Document, PacifiCorp, April 2015
6. Copco 1 Development, Klamath River Project, Supporting Technical Information Document, PacifiCorp Energy, April 2015
7. Iron Gate Development, Klamath River Project, Supporting Technical Information Document, PacifiCorp Energy, April 2015
8. Dams Sector, Estimating Economic Consequences for Dam Failure Scenarios, Homeland Security, September 2011
9. Various references illustrating the consequences resulting from historic dam failures and removals

UNDERSTANDING OF THE ASSIGNMENT

The FERC requested the BOC's review of the adequacy of cost estimates, insurance, bonding, and the overall financial resources available to implement the Definite Plan. 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 submitted Report No. 1 to Mr. Mark Bransom on December 10, 2018. Report No. 1 presented the BOC's findings, conclusions and recommendations regarding the five specific questions posed in the FERC letter to the Renewal Corporation dated March 15, 2018.

The five specific questions for BOC review were:

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

In the months following the submittal of Report No. 1, the Renewal Corporation has made significant progress in addressing each of these five questions posed by the FERC. It is during the interim the BOC has obtained and evaluated additional information provided by the Renewal Corporation to update the BOC's findings, conclusions and recommendations presented in Report No. 1.

The BOC's update of the Report No. 1 findings, conclusions and recommendations follow.

FINDINGS

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

The BOC has reviewed:

1. The Definite Plan – Appendix P Cost Estimate published by the Renewal Corporation in June 2018. A 1st Readout with the BOC was conducted by the Renewal Corporation (AECOM) in Denver during the month of November 2018,
2. A revised Appendix P Cost Estimate published in February 2019, with a 2nd Readout to the BOC in March 2019, and
3. The most recent Cost Estimate published in July 2019 with a 3rd Readout to the BOC performed in July 2019.

The July 2019 Cost Estimate presents the Total Project Cost for Full Removal, at the P80 confidence level at \$433,648,000, including contingency. Current available funding for the Project stands at \$450 million.

During the 1st and 2nd Readouts of the Cost Estimate, the BOC together with Renewal Corporation (AECOM) thoroughly vetted the Cost Estimates means, methods, sequencing, work breakdown structure and cost development strategies. From each of the 1st and 2nd Readout sessions, the BOC provided the Renewal Corporation (AECOM) with written comments regarding opportunities for improvement (OFIs) in the Cost Estimate that would heighten the BOC's confidence in the quality of the estimated cost outcomes. With no remarkable exceptions, the Renewal Corporation (AECOM) addressed, to the satisfaction of the BOC, each of the BOC's identified OFIs for the Cost Estimate.

Subsequent to the 3rd Readout (that associated with the July 2019 Cost Estimate publication), the BOC has produced an Informal Meeting Report Memorandum that summarizes the findings of its involvement in the Cost Estimate – 3rd Readout. This memorandum is included in Appendix B-6 of this Supplement to Board of Consultants Mtg. No. 1.

Renewal Corporation and their team have worked diligently to understand probable costs and risks to the Project, and to further the project risk management strategy. While numerous changes have been made to the various cost categories within the Cost Estimate since first published in June 2018, the overall estimated cost of the project has remained within the \$450 million "state cost cap." It is the BOC's opinion that the Renewal Corporation has made significant progress since June 2018 in developing a realistic, rational and sound maximum and probable Cost Estimate for the Work.

The BOC, under FERC Letter of May 22, 2018 has been assigned, in part, to undertake the following inquiry:

Review of adequacy of available funding and reasonableness of updated cost estimates for the most probable cost and maximum cost for the Full Removal alternative, and the assumptions made to calculate those estimates;

The BOC's position is that the July 2019 Cost Estimate has been assembled, compiled and independently vetted (quality assurance processes) consistent with industry standards. Costs and contingencies appear to be reasonable and have a high likelihood of being adequate given the PDB contracting model, the choice of a proven, competent contractor and proposed Risk Management Plan. Ultimately, the Contractor's assessment of cost and resultant Guaranteed Maximum Price (GMP) along with the confirmation of other cost elements will determine the adequacy of the current level of Project funding.

It is the BOC's understanding that the GMP, LTC Agreement, other stakeholder agreements, total cost, contingency and risk evaluation will likely come together at a common point in time, targeted currently to be during the first quarter of 2020.

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

An updated Monte Carlo analysis was completed based on current risk understandings, and a P80 level of certainty has been included in the 3rd Readout of the Cost Estimate. The Project Contingency identified in the July 2019 Cost Estimate stands at \$62 million.

The Renewal Corporation has further developed the Draft Amended Risk Management Plan (July 2, 2019; Risk Management Plan) for the Project. The BOC's review of the Risk Management Plan shows that certain specifics of the plan remain a work in progress, as some uncertainty still needs to be addressed. When taken in the context of the development of the Risk Management Plan and Kiewit's GMP, the level of contingency carried in the July 2019 Cost Estimate is within industry standards for such a project.

On a related note, the BOC notes that the Renewal Corporation (AECOM) has divided the Project contingency into three (3) major categories:

1. Estimate Uncertainty
2. Pre-GMP Contingency
3. Post GMP Contingency

While this categorical approach to developing assessments may be useful in defining and establishing the various contingent funds given the Project's timelines and under a Monte Carlo methodology, it is the BOC's understanding that the Project will maintain the full level of contingency money (no partial retirement of funding) past the Estimate Uncertainty and Pre-GMP milestones. It is the BOC's further understanding that the contingency is intended to fund the cost of residual lawsuits and claims that are not addressed by insurance, contractual indemnification or the LTC. As such, some portion of the contingency should remain intact for some time after Project completion.

The BOC recommends the contingency be re-assessed once the final GMP is identified, LTC terms, conditions and costs are established, and assignment/mitigation strategies for the remaining risks are addressed.

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 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 KHSa, 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. For the reasons cited in the BOC's letter report (December 10, 2018) and AON's Risk and Insurance Draft Due Diligence Report (July 2, 2019), transition from an Owner Controlled Insurance Program (OCIP) to a Contractor Controlled Insurance Program (CCIP) for Commercial General Liability, Excess Liability and Workers Compensation/Employers Liability (as recommended in the Risk Management Plan) is viewed positively by the BOC.

One change in the Renewal Corporation recommended insurance program is to allow Kiewit to use its corporate Professional Liability insurance policy to satisfy insurance requirements in this area, in lieu of a project-specific policy. This results in an estimated savings of approximately \$2 million in costs. It is the BOC's understanding that Kiewit's corporate insurance policy limits of liability apply to all Kiewit projects collectively and not just for the Project. The BOC suggests that one area that should be explored, prior to the time a guaranteed maximum price is negotiated, is for Renewal Corporation to obtain and evaluate the merits of an insurance proposal for an Owners Protective Professional Indemnity (OPPI) insurance policy. An OPPI is intended to provide coverage to Renewal Corporation for damages that exceed the professional liability insurance maintained by the Kiewit and its design team. An OPPI does not insure Kiewit or its subcontractors or sub-consultants.

- b. The Renewal Corporation recommended a Project Insurance Program and the construction insurance requirements under the PDB contract are a work in progress. The BOC recommends it review future iterations of these items, and in particular: (1) the program structure, (2) the scope and level of protection afforded to the Renewal Corporation, PacifiCorp and the States, and (3) the responsibility for deductibles and other forms of retention.
- c. The previous Cost Estimate did not include line items for project-specific insurance policies or the estimated cost for an LTC. The estimated cost for these two items were included within the "Design & Construction Contingency" line item (set forth in Table 1 on page 64, Appendix P of the Definite Plan dated June 2018). The estimated costs of these items have been removed from this line item and are segregated in the updated July 2019 estimate (Appendix

P). The current cost estimate for the combined LTC and Local Impact Mitigation Fund is \$35,730,000, and Project insurance is estimated at \$6,989,000.

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 and is subject to frequent revisions throughout the life of the project. The latest iteration of the Risk Register appears as Attachment A to the Risk Management Plan. The BOC notes that the Risk Register was updated in general and reformatted to include keys at the top of the columns which identify and describe the inputs. In addition, "Risk Costs Coverage" columns were added to identify primary and secondary contingency carriers. These are all positive developments. However, the BOC suggests that the Risk Register be updated monthly.

The updated Risk Management Plan incorporates new components. The Renewal Corporation has received a proposal from RES to address specified risks not covered by insurance or contractual indemnification. These include (1) certain natural resources risks, (2) cultural resources risks, and (3) specific property damage related risks arising without fault of Kiewit (e.g., flooding of downstream properties, sediment impacts on downstream infrastructure and impacts to groundwater wells). For the first two categories, RES would indemnify the Renewal Corporation, PacifiCorp and the States against damage claims through an indemnity agreement. The latter category of risks would be addressed through implementation of a "Local Impact Mitigation Fund" (Fund). This Fund, the cost of which is included in the LTC estimate, would be administered by an independent third party following an agreed upon methodology for compensating impacted parties. The Renewal Corporation has acknowledged that participation in the Fund will be voluntary and that there is potential for litigation outside the Fund.

The RES proposal/LTC structure is in the early stages. The scope, terms and cost will be refined during negotiations as more information becomes known. The BOC understands that the contract between RES and the Renewal Corporation will be developed by the time the GMP is determined in the first quarter of 2020.

The Renewal Corporation acknowledges that not every identified risk will be addressed by insurance, contractual indemnification or the LTC. For instance, there may be legal claims such as those which allege lost profits or other economic losses suffered by persons or businesses, loss of property taxes, impacts on energy prices or complaints involving water quality. In addition the Renewal Corporation will retain the risk of delays caused by (1) "Uncontrollable Circumstances" (as defined in the PDB contract), (2) work scope changes directed by the Renewal Corporation, and (3) the inaccuracy of any reliance document provided by Renewal Corporation to Kiewit that formed the basis of the decommissioning plan and that could not be reasonably verified by Kiewit. Many of these risks are or will be incorporated in the Risk Register and risk management mitigation tools will be identified. The BOC recommends that the Renewal Corporation continue to work with PacifiCorp and the States to define the scope, level and term of indemnification that is currently set forth in the KHSa Appendix L.

Question 5 – The adequacy of funds and the funding mechanism described in the data package

The BOC understands that Renewal Corporation will have three sources of funding for decommissioning, removal, and habitat restoration of the Lower Klamath Project, totaling \$450 million:

- \$184 million from the Oregon Customer Surcharge;
- \$16 million from the California Customer Surcharge; and
- \$250 million 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.

As detailed in questions 1 through 4, the Renewal Corporation has worked diligently to refine cost estimates and identify tools that will help assure that the Project can be completed within the state cost cap. As stated by the Renewal Corporation, “The financial capacity of the Renewal Corporation is an integrated package consisting of: (1) \$450 million in committed funding; (2) use of PDB contract to assure a single point of accountability; (3) engagement of best-in-industry project team; (3) requirement of a GMP before the Renewal Corporation’s acceptance of license transfer; (4) insurance, bond, and indemnity program that provides many hundreds of millions of dollars of risk protection; and (5) a project cost estimate at the industry standard P(80) level that includes a contingency reserve currently estimated at \$62 million.”

The draft Plan B text provided by Renewal Corporation on July 7, 2019 asserts that the *“States and PacifiCorp must agree to the sufficiency of the financial capacity before construction begins, but after all permits are obtained, all conditions are known, and uncertainties around pricing and design are resolved.”* The BOC concurs that this integrated package appears to reduce the Project risk of exceeding the state cost cap. However, the BOC still awaits Kiewit’s GMP and the RES agreement, which will have great bearing on this question. Both milestones are anticipated in the first quarter of 2020. The BOC encourages the Renewal Corporation to continue refining the Definite Plan, including Plan B.

The draft “Plan B” language provided by the Renewal Corporation provides a list of options that could be undertaken if the financial capacity of Renewal Corporation is not sufficient to complete the Project. These are:

- a. Contract stripping and value engineering;
- b. Seek and obtain additional funds from third parties per the KHSA;
- c. Seek philanthropic contributions; and/or
- d. Accruing interest on the customer funds in excess of the \$28 million assumed in the cost cap.

These items are certainly possible options provided by the draft of Plan B.

Renewal Corporation's "Plan B" will also rely, if necessary, on the use of Section 7.3.8 B. (see below) of the KHSA to work with PacifiCorp, the States, and other signatories to identify and seek additional funding should the project costs exceed the state cost cap.

7.3.8 B. Third Party Funding

The Parties agree to work jointly to identify potential partnerships to supplement funds generated pursuant to this Settlement. Such third-party funds may be employed to acquire generation facilities that can be used to replace the output of the Facilities, to fund aspects of Facilities removal, or for other purposes to achieve the benefits of this Settlement.

The BOC understands that, while the Renewal Corporation has initiated conversations with potential additional funding sources, it has not entered into any formal agreements with such third-party funding entities.

During an informal meeting call on July 22, 2019, Renewal Corporation arranged for representatives from the States of California Department of Natural Resources and Oregon Department of Environmental Quality to offer input on Plan B. While the States could not guarantee additional funding, they did indicate broad support in the state governments for the completion of the project.

The BOC also notes that Renewal Corporation shared a copy of a letter from Kiewit dated July 19, 2019, stating that Kiewit believes the design and construction can be completed within Renewal Corporation's overall proposed budget.

CONCLUSIONS

In summary, it is the BOC's opinion that Renewal Corporation has made good progress, is using reasonable approaches, and is using a qualified team to estimate Project costs, including those for potential risks. While not likely based on updated analyses, the BOC at this time cannot rule out the possibility of the Project exceeding the state cost cap. There is still the GMP to be factored in, and like all large projects, there are natural and man-caused circumstances that cannot be foreseen which would also increase the final Project cost.

The BOC opines that the Renewal Corporation has made real progress toward demonstrating, with a high degree of confidence, that the Project can be completed within the state cost cap. This high degree of confidence is contingent on successfully accomplishing the GMP, RES contract and Plan B milestones.

RECOMMENDATIONS

The BOC presents the following recommendations:

1. The BOC recommends that the contingency be re-assessed once the final GMP is identified, LTC terms, conditions and costs are established, and assignment/mitigation strategies for the remaining risks are addressed.
2. The BOC recommends that the BOC reviews future iterations of the Project Insurance Program and PDB contract insurance requirements.

3. The BOC recommends that the Risk Register be updated monthly.
4. The BOC recommends Renewal Corporation continue to work with PacifiCorp and the States to define the scope, level and term of indemnification that is currently set forth in the KHSA Appendix L.
5. The BOC recommends that further refining of "Plan B" continue.

NEXT MEETING

To be determined.

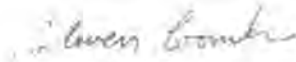
CLOSURE

The BOC respectfully submits the Supplement to Meeting No. 1 Letter Report 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 Borg



Craig Findlay



Dan Hertel



Ted Chant

APPENDIX A
Meeting #1 Report

BOARD OF CONSULTANTS

Lower Klamath Project

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 is 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]ommitted 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." KRRRC 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 7.2.1(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. The 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.

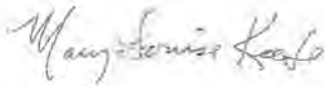
NEXT MEETING

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.

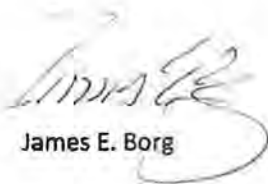
Yours sincerely,



MaryLouise Keefe



Steve Coombs



James E. Borg



Craig Findlay



Dan Hertel



Ted Chant

APPENDIX B
Meeting Memoranda

APPENDIX B-1

Review of Intermediate Cost Read-Out

BOARD OF CONSULTANTS

Lower Klamath Project

Date: July 1, 2019

Informal Meeting Report Memorandum
Review of Intermediate Cost Estimate Review – 2nd Readout
Klamath River Renewal Corporation

The informal telephonic meeting was held on March 14, 2019. The workshop began at 9:00 Pacific Time and ended at about 3:30 PM Pacific. The call was attended by AECOM representatives Seth Gentzler, John Roadifer, Eric Jones, Stuart Green; and Board of Consultants (BOC) representatives Ted Chant, Dan Hertel, and selectively by Jim Borg, MaryLouise Keefe, Steve Coombs, and Craig Findlay.

An agenda and handouts were prepared by AECOM and KRRC, and included topics such as approach to markups, indirect costs, labor and equipment costs, construction schedule, and select work items. KRRC's internal costs, Liability Transfer Corporation (LTC) costs, as well as design and permitting costs were not addressed.

Overall, the Read-Out went well. The AECOM team has been responsive to the BOC concerns of thoroughness, *completeness and reasonableness* discussed in the 1st Read-Out held in November 2018. The AECOM team continues to display an open-mindedness and willingness to accept BOC comments, and have responded to BOC input proactively. Generally speaking, the BOC is more comfortable with the cost adjustments and approach associated with the 2nd Read Out of the cost estimate.

Overall, the total project funding remains at \$450 million. The February Estimated Cost as presented is stated as approximately \$451 million, including Direct Cost, Progressive Design Build (PDB) Field Overhead, PDB HO Overhead, Profit, Insurance, Bonds, Escalation, and Contingency. Overall, it appears that the sum of Direct Costs, Indirect Costs, and Markups have increased approximately \$31 million, which would indicate that the available contingency has decreased. Depending on the revised Definite Plan, selected PDB Contractor, Contract, LTC, and Risk Mitigation Measures, the overall question of potential project cost overruns remains. This has been of vital concern to the BOC. The BOC looks forward to seeing the Revised Definite Plan and Cost Estimate in April and better understanding this.

Major areas of cost reduction included concrete demolition and some earthworks, while cost increases were mostly associated with diversion works and site indirect costs.

A number of action items for KRRC/AECOM remain, based on BOC requests, including the following:

1. Provide Supervisor/Craft Ratios for the Iron Gate Site Indirect Work Breakdown Structure (WBS) items. This will give the BOC an indication of the expected level of supervision to compare to industry standards.
2. Provide change in total haul unit hours from Definite Plan presented in November 2018 to February 2019 versions of the Cost Estimate.

3. Rework the assessment for "Dead Rent". During the 2nd Read-Out, it became apparent that the BOC observation regarding dead rent had been misinterpreted and AECOM will revise their assessment accordingly.
4. Make minor adjustments to OH-3 (Temporary Buildings) in the J.C. Boyle Site Indirect (and we assume the Iron Gate Site Indirect cluster as well).
5. Re-evaluate the rate of Small Tools (\$/labor hour) to ensure it is adequate.
6. Correct a relatively few minor busts (matters that were intended to be made by the estimator but did not make it into the cost estimate).
7. Revisit of major earthwork items (most importantly 4.023.1) with respect to truck loading times, haul cycle balance, and the truck load factor (y3/trip) employed.
8. Production of a Mass Haul Diagram.
9. AECOM mentioned that they "potentially" may separate the LTC cost from the project contingency. The BOC continues to recommend this be done. The LTC cost will eventually be known/finalized. Even if a final cost is not determined by the end of April, AECOM/KRRC should include their best estimate as a placeholder and acknowledgment of cost.
10. The Definite Plan Comments relating to PDB Insurance are incorrect. The Definite Plan assumes an Owner Controlled Insurance Program (OCIP), not a Contractor Controlled Insurance Program (CCIP). In the February 2019 column, the \$1,814K amount must be light if the PDB will provide a CIP. AECOM will check on this with KRRC. Also, AECOM will check with KRRC on the accuracy of \$100K for Owner's insurance costs. (Note: the \$100K does not contemplate any of the project insurance that KRRC plans to secure.)
11. In the Itemized Field Overhead numbers, insurance costs are shown as 2% of the subtotal on page 3 of each document. AECOM confirmed this is a mistake and should be corrected to 1% (which will also change the \$\$ amounts). AECOM will make the changes.
12. The original goal of transferring all risks to the PDB via a special indemnity agreement was not realized.
 - a. KRRC replaced their insurance broker (Willis) with AON to do a project risk assessment. The AON deliverable is a matrix identifying each risk and how the risk is being addressed and estimated costs (e.g., via PDB contract, OCIP or CCIP, other Project insurance, other PDB insurance, LTC, etc. The AON matrix should be ready at the end of March).
 - b. KRRC/AECOM interviewed LTC providers. They are finding out that all residual risks cannot be transferred to the LTC. ("The LTC market has changed- no one will cover all risks.") They are obtaining more information and pricing indications. Timing was not discussed. AECOM mentioned that the project contingency could address risks that aren't addressed by any of the foregoing techniques. (Comment: This does not appear to be in keeping with Appendix L to the Settlement Agreement.)
 - c. As respects a Risk Register, AECOM mentioned that they were striking any items that are the responsibility of the PDB. It was recommended that they not do that, but rather in the comments section, indicate that a specific risk is a PDB responsibility. AECOM understood the expressed concern.

Additional Comments:

1. Some additional assessment should be made regarding sub-contracted and self-performed work. The Cost Estimate as currently assembled as 99% self-performed. The execution plan will require that 60% of the Work be subcontracted. Under normal conditions (no mandated percentage to be performed by third parties), work is subcontracted when a third party offers improved cost performance, risk mitigation, or schedule certainty – meaning self-performed as a

basis of a Cost Estimate is a conservative approach (from an overall cost perspective) in that making the decision to subcontract should reflect an improvement on the base case (the self-perform approach) OR a contractor would simply self-perform that component of the work.

2. In addition, normally, self-performing contractors would not subcontract out work that is on the critical path (some exceptions of course, but as a general rule of thumb). If one does subcontract critical path work for whatever reason, this approach might attract a contingency on the subcontractor's price for contractor directed overtime costs, required changes the subcontractors means, methods and sequencing or the risks of having to provide additional contractor support to move things along consistent with the contractor's needs.
3. At Klamath, with a 60% floor on subcontracted work, other parameters will enter into the subcontracting decision-making process (making the 60% target). The means and methods of translating the current 99% self-performed premise of the cost estimate to a 60% minimum subcontracted value require some additional thought. How do we reasonably undertake this translation (anticipate the additional cost involved)? We asked AECOM to think about this, as it may alter the risk approach and contract markup.
4. It is the BOC's understanding that the costs of Iron Gate and Fall Creek hatchery renovations and improvements are outside Lower Klamath Project decommissioning and removal costs. It was stated that these costs are covered under separate agreement with PacifiCorp. However, the linkage between performance of hatchery renovations and the overall restoration project (per KHSA) may result in unknown cost consequences to the overall project.
5. In the Definite Plan, Appendix P – Estimate of Project Cost, Table 1-2 provided a summary of expected project costs. At the point of the 2nd Reading of the Cost Estimate, it was unclear to the BOC what the revised costs are at this point. Please provide total estimated expected project costs in the table below.

Cost Description	Total Cost First Readout Definite Plan	Total Cost 2 nd Readout February Amended Plan
KRRC Internal Cost		
LTC Premium		
Project Oversight		
Environmental Compliance and Permitting		
Engineering and Procurement – AECOM		
Construction Management		
PDB Design Costs		
Construction – Including Contractor's Indirects, Markup and Insurance		

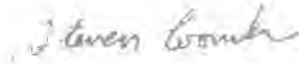
Closure

KRRC and AECOM discussed the next steps listed in the agenda. The BOC expressed thanks to KRRC and AECOM and the other meeting attendees.

Yours sincerely,



MaryLouise Keefe



Steve Coombs



James Borg



Craig Findlay



Dan Hertel



Ted Chant

APPENDIX B-2

Review of Draft Project Agreement

July 1, 2019

**Informal Meeting Report Memorandum
Review of Draft Project Agreement
Klamath River Renewal Corporation**

An informal telephonic meeting was held on Monday March 25th to obtain an overview of the draft Progressive Design Build (PDB) contract focusing on risk, insurance, indemnification and pricing sections. The conference call began at 8:00AM Pacific Time and ended at about 9:30AM. The call was attended by Eric Petersen (Hawkins Delafield and Wood), Olivia Mahony, and Board of Consultants (BOC) representatives Ted Chant, Dan Hertel, Jim Borg and Steve Coombs. Olivia Mahony provided a brief agenda in advance of the call.

General Comments

1. The call was led by Eric Petersen.
2. The initial Progressive Design Build (PDB) contract is currently being negotiated and will be executed in about 30 days.
3. There will eventually be a Guaranteed Maximum Price (GMP) amendment for the construction, subject to adjustment based on FERC approvals (estimated December 2019).
4. Then another amendment will be signed with a hard GMP (estimated mid-2020).
5. PacifiCorp believes the current schedule is too aggressive. The schedule will be amended.

Risk

1. AON was hired (replacing Willis) to perform a risk assessment of the project. This will include an identification of each risk, how each risk is addressed (e.g., insurance, indemnification, Liability Transfer Corporation (LTC)) and the associated estimated incremental costs. The report should be done by the end of March. The BOC verbally requested a copy of this report.
2. The bulk of the permitting responsibility is retained by KRRC (a list of needed permits is in the PDB contract). KRRC expects to have all permits in hand prior to construction.
3. FERC License transfer would not happen until after the GMP is established.

Insurance

1. As respects the LTC:
 - a. There was extensive outreach to nine firms. Seven were eliminated either due to cost or the proposed project is outside their general scope of what they are willing to do.
 - b. Two LTCs were interviewed by KRRC, with PacifiCorp in attendance.
 - c. KRRC is working closely with PacifiCorp and the respective states as a "team."
 - d. Currently working towards a Memorandum of Understanding with one LTC (a restoration services company). This will culminate in a non-binding "term sheet" in the next two months.

- e. It appears likely that a LTC will not be able to provide complete protection against all risks contemplated by Appendix L.
- f. When questioned what will happen if Appendix L is not completely addressed, Eric Petersen said that KRRC and PacifiCorp will “have to take stock” of alternatives. Eric mentioned that KRRC is essentially providing the indemnification already. However, the BOC notes that KRRC’s indemnification is limited by its assets and planned corporate lifespan.
- g. The timing of the LTC is such that it must take effect before construction commences. (Note: PacifiCorp indicated to KRRC that it does not want the PDB construction amendment to be signed until the LTC is in place.)

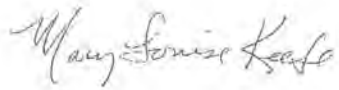
Indemnification

- 1. The PDB bidders will not agree to provide the specialty indemnity requested (in order to comply with Appendix L). (Comment: This will place greater reliance on the LTC to satisfy Appendix L.)
- 2. The indemnification clauses currently incorporated in the PDB contract are traditional, as compared to other similarly sized projects.

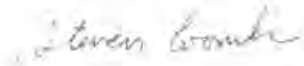
Cost

- 1. The only fixed pricing currently being negotiated with the PDB contractor is the fee.
- 2. The proposed fee ranges for the two leading PDB finalists are 10% and 12% respectively.
- 3. Time was spent (very worthwhile) reviewing the project’s original and revised time lines/milestones and process off-ramps.
- 4. Section 8.1.B (Replacement of Project Manager) – the BOC suggested that KRRC develop further requirements to ensure stronger continuity commitments from the Project Company for not only the Project Manager but many (as many as 8-10 is my thought) other key members of the Contractor’s Management Team. Our thinking here is that if the Project Manager is replaced (with or without a *fine*), takes ill or leaves the employment of the Contractor we want to ensure that there is a substantial contingent of the Contractor’s project delivery team that participated in the entire Preliminary Services effort that are available to the construction phase of the Work.
- 5. Section 8.3.C (Performance Failure) and Appendix 8.4.2.E (Unallowable Costs Defined) – there is an apparent conflict between these two sections regarding the PDB Contractor’s opportunity for recoverable costs for litigation (enforcing contractual rights and remedies for the benefit of the Project) with subcontractors.
- 6. Appendix 2 (Preliminary Services) – the revised schedule dramatically extends the period for the Preliminary Services – important to reflect this extended period (doubled) in the resource planning for the negotiated not-to-exceed cost – providing twice the time will not result in twice the value with respect to planning outputs.

Yours sincerely,



MaryLouise Keefe



Steve Coombs



James Borg



Craig Findlay



Dan Hertel



Ted Chant

APPENDIX B-3
AON's Preliminary Risk and Insurance
Recommendations

BOARD OF CONSULTANTS

Lower Klamath Project

June 29, 2019

**Informal Meeting Report Memorandum
AON's Preliminary Risk and Insurance Recommendations
Klamath River Renewal Corporation**

The informal telephone meeting was held on May 2, 2019 and was attended by the BOC members and representatives from KRRC, AON and PacifiCorp. The meeting topics were listed in an agenda prepared and submitted prior to the meeting by KRRC. The order of comments in this memorandum largely follows the order of the agenda.

AON Preliminary Risk and Insurance Recommendations

Following introductions, the BOC noted that AON serves as an insurance advisor and broker to both KRRC and Kiewit (the successful PDB Contractor). The Board expressed a concern that this could potentially compromise AON's objectivity in providing advice to KRRC for the Project. AON representatives stated that there are internal walls of separation that eliminate the possibility of any real conflicts in this regard, although they understood the perception of possible conflict.

A. Information Relied Upon for Preliminary Recommendations

As part of its analysis AON reviewed a wide variety of documents and attended various meetings and calls with KRRC and its advisors. This was all done in preparation to its analysis of risks associated with the dam removal and ancillary projects. AON fully understands its goal is to assist with the design and implementation of programs leading to compliance with Part 7.1.3 of the Klamath Hydroelectric Settlement Agreement Settlement Agreement.

B. AON Recommended Insurance and Bond Plan

KRRC asserted that the planned loss protection programs consist of three primary components: (a) proposed Kiewit CCIP/Bonds, (b) corporate insurance programs secured by Kiewit and KRRC, including various project specific insurance policies, and (c) the risk allocation provisions contained in the PDB Agreement, which ultimately are backstopped by Kiewit's balance sheet. The LTC option was not discussed, but will be addressed at a future meeting.

1. Insurance Policies and Limits

The recommended types of insurance policies, insured limits and projected costs were reviewed and discussed. AON confirmed that all CCIP costs and deductibles were the responsibility of Kiewit.

BOC Recommendation:

The Contractor Controlled Insurance Program (CCIP) Excess Liability limit recommended by AON is \$100 million. The BOC expressed its concerns that this limit significantly underestimates true risk potential of the Project. The BOC recommends this limit be increased to \$200 million. The BOC concluded that the benchmarking information that AON used to arrive at some of its conclusions did not utilize similar projects (all projects utilized in the benchmarking were new construction only, and largely consisted of highways, bridges, tunnels and rail). Likewise, the benchmarking of the proposed insurance limits to PacifiCorp's insurance program did not seem helpful because the former is for a dam demolition project while the latter is for the operation of a utility. To assist AON with its analysis, the BOC agreed to provide resource materials on the documented financial losses of historical dam failures. AON was encouraged to rework their benchmarking exercise around dam projects and actual loss experience. In the interim, AON agreed to reprice the Excess Liability insurance cost accordingly.

2. AON Supporting Information

The AON Supporting Information-Model Flows document was reviewed and discussed. This is an actuarial study of specific scenarios identified in the AECOM risk registers. The scenarios analyzed were dam failure, substation failure, wildfire, water main relocation, damage to houses, debris removal, and hatchery fish kill. The AON project assumptions, process, and analysis were all reviewed. The probabilities of risk occurrence and estimate of costs will be further refined during preliminary services technical studies and analyses.

Through its analysis, AON concluded the three largest risks based on estimated costs (excluding Project operations costs) KRRRC faces are from hatchery failure and its impact on the salmon population, pipeline relocation due to sediment movement and deposition or scour, and downstream fatalities and property damage resulting from dam failure during the removal efforts.

BOC Recommendation:

The AON Analysis is based on AON's internal methodology and not regulatory methodology for conducting risk assessments or estimating economic consequences. Various governmental agencies produce risk assessment/consequences related materials, including FERC, FEMA, Department of Interior and Homeland Security. The BOC agreed to send several documents to AON for their consideration. The BOC also agreed to send materials regarding the economic costs of historical wildfire losses.

Closure

KRRRC and AON discussed the next steps listed in the AON report. The BOC expressed thanks to AON and KRRRC. The discussions were very helpful in better understanding the planned treatment of risks associated with the Project.

Yours sincerely,



MaryLouise Keefe



Steve Coombs



James Borg



Craig Findlay



Dan Hertel



Ted Chant

APPENDIX B-4

RES's Liability Transfer Corporation (LTC) Approach

July 1, 2019

**Informal Meeting Report Memorandum
RES's Liability Transfer Corporation (LTC) Approach
Klamath River Renewal Corporation**

The informal telephonic meeting was held on June 6, 2019 and was attended by the BOC members and representatives from KRRC, RES, AON, Feinberg Law Firm and PacifiCorp. The meeting topics were listed in an agenda prepared and submitted prior to the meeting by KRRC. The comments in this Memorandum largely follow the order of the agenda.

RES's LTC Approach

In advance of the meeting, KRRC distributed an Executive Summary of the RES LTC Draft Proposal and KRRC Liability Protection Program Overview.

A. Executive Summary of the RES LTC Draft Proposal

This document is composed of five parts: Introduction, Price and Performance Risks, Residual Risks, LTC Costs, and Recommended Alternative.

1. Introduction

RES's focus is on potential liabilities which are not subject to price and performance risks, including related insurance and bonds, for which it can assume. These are considered as designated "mitigatable risks." The Executive Summary is a preliminary working document. PacifiCorp is currently reviewing this approach and has not finalized its position. RES also identified and discussed past and current projects and a history of its organization.

2. Price and Performance Risks

These risks relate to the removal of the dams and the restoration required by permits. These risks are addressed per the PDB Agreement, Kiewit parental guarantee, bonds, and Kiewit and KRRC insurance programs/policies.

3. Residual Risks

Residual risks are risks other than price/performance risks that RES can mitigate (mitigatable risks) and other potential legal claims (for which KRRC assumes). The RES mitigatable risks are (a) flooding impacts on property; (b) impacts of sediment release (including contamination), (c) rim instability issues, (d) wildfires; (f) impacts on water rights (e.g., groundwater wells); (g) risks associated with project permits (including impacts to natural resources); and (h) impacts to water rights. Based on a review of the AECOM Risk Register RES believes these risks account for the majority of impacts that are expected to occur.

When questioned where the risks associated with the impact on salmon populations are allocated, RES confirmed this would be fall into category (g) permits.

The second category, other potential legal claims, includes all potential legal actions that are not price/performance risks or mitigatable risks. These would include, for example, actions alleging economic losses suffered by third parties, loss of property taxes and energy price changes. Based on the advice of outside counsel, RES believe such risks are speculative in nature.

4. LTC Costs

A table outlining mitigatable risks, estimated cost to mitigate, contingency and LTC fees were reviewed and discussed. RES explained that these amounts were calculated based on its experience with other projects, Monte Carlo Analysis and estimates by Stantec (as sub-consultant to RES).

5. Recommended Alternative

RES recommended that KRRC establish a defense fund to cover legal risks and mitigatable costs (other than permitting risks which would remain with RES). This fund has a cap and be voluntary (those that bring claims could be subject to the settlement fund procedures or could use the court systems). RES and representatives from The Law Offices of Kenneth R. Feinberg described fund administration characteristics. The funding amount and procedures were discussed but were very preliminary in nature.

BOC Recommendations/Requests:

The BOC questioned how the financial implications "Uncontrollable Circumstances" (as defined by the PDB Agreement) are going to be addressed. KRRC agreed to provide additional information.

The BOC questioned what criteria were used by RES to select the specifically identified "mitigatable risks." KRRC agreed to provide a response.

The BOC requested (a) a copy of the RES PowerPoint, (b) the most recent AECOM Risk Register and (c) a copy of the full RES proposal when it becomes available. KRRC will provide copies.

B. KRRC Liability Protection Program

KRRC reviewed various risks, including permits, price/performance, insurable and residual. Most of the comments in this document had been discussed previously as part of the RES LTC Draft Proposal. KRRC did confirm that (a) Kiewit will be responsible for correcting any non-compliance issues with regulatory permits for Facilities Removal; (b) PacifiCorp will be solely responsible for power generation, transmission and decommissioning of the facilities, and (c) the California Department of Fish and Wildlife will be responsible for the operation of the Iron Gate and Fall Creek Hatcheries.

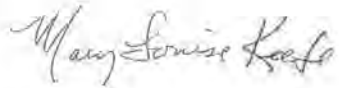
BOC Recommendations/Requests:

The BOC was unclear regarding the KRRC comment that RES will "hold the CIP." KRRC agreed to address further after RES prepares their proposal. The bonding issues will also be reviewed further

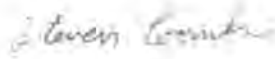
Closure

KRRC and RES discussed the next steps listed in agenda. The BOC expressed thanks to KRRC, RES and other meeting attendees.

Yours sincerely,



MaryLouise Keefe



Steve Coombs



James Borg



Craig Findlay



Dan Hertel



Ted Chant

APPENDIX B-5

Review of Liability Transfer Plan

BOARD OF CONSULTANTS

Lower Klamath Project

July 12, 2019

**Informal Meeting Report Memorandum
Review of Liability Transfer Plan
Klamath River Renewal Corporation**

An informal telephonic meeting was held on July 9, 2019 and was attended by the BOC members and representatives from KRRC, AECOM, RES, AON, and PacifiCorp. The meeting topics were listed in an agenda prepared and submitted prior to the meeting by KRRC. The comments in this Memorandum largely follow the order of the agenda.

RES's LTC Approach

In advance of the meeting, KRRC distributed the following documents for BOC review: (a) a June 21, 2019 Draft Risk and Liability Transfer Plan (LTC plan) and associated appendices, (b) a June 21, 2019 draft of the Overview of Risk Register and Risk Allocation Matrix, and (c) a July 2, 2019 draft of an appendix to the Definite Plan, Appendix A - Draft Amended Risk Management Plan. The BOC reviewed these documents, prepared and delivered written questions to KRRC. Thus, the meeting goal was to address the BOC questions on these recently drafted risk and liability plans.

The approach presented in the RES Draft LTC plan is focused on identifying, managing and mitigating (a) all natural resources risks associated with the regulatory process during the Post-Construction phase of the project and (b) specified property risks and related impacts (e.g., flooding impacts on homes and bridges; sediment impacts; rim stability; groundwater wells and diminution in land values). As a sub-consultant to Kiewit, RES will also be actively engaged in regulatory consultation and negotiation of natural resource related permits and will be responsible for habitat restoration construction, monitoring, and compliance. It is the BOC's understanding that RES, as the LTC, will be responsible for long-term stewardship of the restoration within the criteria and timeframe established by regulatory permits.

Discussion Summary

The following summarizes the major areas covered during the call.

1. KRRC believes that RES meets the minimum criteria set forth in Appendix L of the Klamath Hydroelectric Settlement Agreement (KHSA).
2. The RES Risk and Liability Transfer Plan is in draft stage and is subject to change. RES will continue to refine the plan as new information becomes available, including research on historical litigation associated with dam removals. Eventually a term sheet will be developed leading ultimately to a formal contract. The formal contract will outline roles, responsibilities, costs, the specific risks that RES will be responsible for and other contract terms. It is anticipated that the cost will be a set dollar amount.
3. RES's performance as a subcontractor to Kiewit will fall under Kiewit's required bonds. RES will also provide a performance bond for its activities within its LTC role. It is assumed the bond amount will be the same as the contract amount.

4. KRRC believes that the requirements of KHSa Part 7.1.3 Liability Protection and Appendix L will be satisfied by the combination of the Risk Management Plan- Appendix A and the RES Plan. KRRC indicated that feedback from the States of California and Oregon has been positive.
5. It is anticipated that RES will ultimately provide indemnification protection to the States of California and Oregon and PacifiCorp. The exact scope and level of the indemnification protection must ultimately be reviewed and agreed to.
6. RES will assume KRRC's obligation for retentions/deductibles under the project specific insurance secured by KRRC.
7. KRRC will work with consultants to determine if new studies are needed to establish a base case for comparison of pre-removal conditions with those experienced during and after removal of the dams.
8. The anticipated protection to be afforded by RES does not replace insurance. If a claim involves overlapping insurance, indemnification, and the LTC, it is anticipated that the LTC protection would apply after insurance and indemnification are exhausted.
9. KRRC has established a reserve in the estimate for litigation not covered by insurance, indemnification or the LTC.
10. RES explained that their responsibilities regarding natural resources risks will include (a) non-compliance with condition of natural resource related permits (including additional costs due to delay); (b) changes in regulations during the life of the permits, and (c) damage to plantings that is not otherwise covered by insurance. For instance, if a wildfire destroys the natural resources restoration work prior to permit expiration, RES maintains responsibility (assuming insurance does not apply to this damage).
11. RES believes it is crucial to the success of the LTC approach for it to be part of the team that negotiates natural resources related permits. They will undertake those activities as a subcontractor to Kiewit working on implementation of restoration measures.

BOC Recommendations/Requests/Comments

1. The RES approach is a work in progress and is based on many assumptions. The BOC welcomes the opportunity to review further modifications and refinements to the RES, along with updates to the Risk Register.
2. THE BOC does not recommend a full blown RIDM exercise. AECOM indicated it would use the Potential Failure Mode Analysis (PFMA) process. This approach is supported by the BOC.
3. The BOC requested (a) additional information on RES and projects it has completed, and (b) a consolidated RES cost summary.

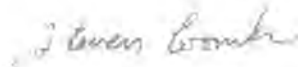
Closure

KRRC and RES discussed the next steps listed in agenda. The BOC expressed thanks to KRRC, RES and other meeting attendees.

Yours sincerely,



MaryLouise Keefe



Steve Coombs



James Borg



Craig Findlay



Dan Hertel



Ted Chant

APPENDIX B-6

Revised Cost Estimate Read-Out

BOARD OF CONSULTANTS

Lower Klamath Project

July 11, 2019

**Informal Meeting Report Memorandum
Revised Cost Estimate Read-Out
Klamath River Renewal Corporation**

An informal telephonic meeting was held on July 9, 2019 and was attended by the BOC members and representatives from KRRC, AECOM, RES, and PacifiCorp. The meeting topics were listed in an agenda prepared and submitted prior to the meeting by KRRC. The comments in this Memorandum largely follow the order of the agenda.

AECOM Review of Project Cost Development

AECOM presented an overview of the project cost development dating back to the Definite Plan Appendix P Cost Estimate developed in June of 2018 (referred to as the 1st Cost Estimate Readout), cost estimate refinements presented to the BOC in March of 2019 (the 2nd Cost Estimate Readout) and the current cost estimate dated July 2019 (3rd Cost Estimate Readout). The AECOM presentation focused on each principle cost category, with emphasis on specific information requests or previous questions posed to AECOM by the BOC.

Changes to the Project Cost

The BOC's understanding of the 3rd Cost Estimate Readout costs and related issues as presented on July 9 can be summarized as follows:

- The overall project budget remains at \$450 million. There have been material line item changes made to the original AECOM Cost Estimate in both the 2nd and 3rd Cost Estimate Readouts. Significant changes also occurred between the 2nd and 3rd Cost Estimate Readouts. It is the BOC's opinion that all changes to the original Cost Estimate have been developed and implemented in a rationale, prudent and transparent manner, tracked and satisfactorily documented by AECOM.
- KRRC has (since the 2nd Cost Estimate Readout) negotiated a Preliminary Services Agreement (PSA) with Kiewit which clarified certain issues including PDB Contract expected fees and markups, insurance costs and the assignment of risk/risk mitigation responsibilities to the PDB Contractor. The clarity and cost certainty afforded by the Kiewit PSA cost had a positive impact with respect to "firming up" certain key aspects of the 3rd Readout of the Cost Estimate.
- Kiewit is in the process of developing a "Proof of Concept" memorandum. This deliverable (due in July 2019) involves Kiewit reviewing and confirming AECOM's approach to the PDB Contractor's means, methods, sequencing and costs of construction. This is an important step and key milestone in the Project's cost confidence process.
- Kiewit has offered a 10% Fee on construction direct and indirect costs. The Fee is to include Corporate General and Administrative (G&A) expenses, Profit, and Kiewit-assigned risk. This

provides a significant savings over the 2nd Cost Estimate Readout and has been reflected into the July 3rd Cost Estimate Readout.

- KRRC is in discussions with Resource Environmental Solutions, LLC (RES).
 - RES will have three specific roles in the project:
 - a. Subcontractor to Kiewit for design and implementation of restoration measures including monitoring, maintenance and reporting during construction
 - b. Contractor to KRRC for long-term implementation of the restoration plan, including monitoring, maintenance, repair/replacement and reporting during the post construction period up to (and possibly beyond) Site Closure, and
 - c. As Mitigation Surety (indemnification of PacifiCorp, Oregon, California and the KRRC with respect to damage claims.
 - Involvement of RES in the roles b. and c. above provides some cost certainty and risk reduction although final details of the RES agreement are a work in progress:
 - RES has identified line items within the WBS that can be removed from the Cost Estimate (partially or completely) as a result of their involvement in the Project (WBS line items transferred to them and included in their lump sum fee – see following bullet). The “transferring out to the LTC” of these WBS Line Items decreased the 3rd Readout of the Cost Estimate by approximately \$40 million.
 - RES has proposed the establishment of a Local Impact Mitigation Fund in the amount of approximately ■ million. This cost is included in the 3rd Readout of the Cost Estimate.
 - RES has provided an indicative cost estimate of its fee for its role as a Specialty Indemnification Company (roles b. and c. above) at approximately ■ million, which is now included in the 3rd Readout of the Cost Estimate as a Line Item.
 - Note to Reader: The BOC notes that there seems to be three terms in circulation for the responsibilities being assumed by RES: Specialty Indemnification Company, Liability Transfer Corporation, and Mitigation Surety. The original term in the KHSa is Liability Transfer Corporation.
 - KRRC and RES are currently developing a “Term Sheet” outlining scope and terms which would ultimately develop into a contract(s) between KRRC and RES for each of items b. and c. above.
- Other material additional cost changes reflected in the 3rd Readout of the Cost Estimate include:
 - The PDB Contractor’s Final Design and Permitting Costs have been increased by approximately \$15 million. This is based on initial scope and related negotiations with Kiewit.

- AON and Kiewit, in conjunction with KRRC, have developed an integrated project insurance program with total premiums valued at approximately \$7 million. Premiums for *long-tail* insurance coverage have been reported as included. These anticipated premiums now show as an independent Line Item in the Cost Estimate.
 - An additional year has been added to the project schedule and a 4% escalation factor has been added to reflect this extended time frame. The associated additional cost is approximately \$9 million.
 - Design changes were made to the Yreka Waterline Replacement. Costs for Fire Management and Spawning Gravel were added for a bundled additional cost of approximately \$13 million.
 - Subcontract Markup was adjusted to reflect the PDB's 60% subcontracted work *target* which added approximately \$3 million.
 - Field Overhead costs were adjusted to reflect Kiewit's management plan. This resulted in a cost decrease of \$3 million.
 - Project Oversight costs, to be administered by AECOM, were increased by approximately \$11 million. This, in part and again based on discussions with Kiewit, reflects mirroring Kiewit's approach to project staffing and management as well as an additional year of project oversight (start of construction now in 2021).
 - Technical Support costs, to be provided primarily by AECOM, were increased by approximately \$5 million. This is, in part, due to the planned delay in the start of construction to 2021.
 - Monitoring and Reporting costs have been reduced on the order of \$8 million, to coincide with the RES contracting and monitoring strategy.
 - The overall Contingency has been reduced from approximately \$68 million (1st Readout) to \$63 million. This reduction in contingency is based on further project definition and risk reduction measures associated with the revised insurance program and the engagement of Kiewit and potentially RES.
- The overall PDB contract value remains at approximately \$235 million, which is a similar value to that of the 1st and 2nd Cost Estimate Readouts.
 - Kiewit will be providing a cost estimate at the end of 2019, with a GMP in early 2020. Until the GMP is finalized and agreed upon, the Cost Estimate is considered an approximation.

Board of Consultants Position and Understanding

Cost Estimate: KRRC and their team have worked diligently to understand probable costs and risks to the project, and to further the project risk management strategy. While numerous changes have been made to the cost categories since the 1st Readout of the Cost Estimate as outlined above, the overall expected cost of the project has remained within the \$450 million budget.

Contingency: At \$63 million and given the level of insurance and the engagement of RES (and taking their contemplated scope as a given) the level of contingency is within industry standards for such a project. A Monte Carlo analysis was completed based on current risk understanding and a P80 level of certainty. The resultant cost was carried in the 3rd Readout of the Cost Estimate. KRRC and AECOM have divided contingency into three major categories: Estimate Uncertainty, Pre-GMP Contingency, and Post GMP Contingency. While this approach may be useful in defining various contingencies, it would be prudent to maintain full contingency funds, without retirement past the Estimate and Pre-GMP milestones.

Plan B: The BOC has been concerned that, in the event the overall final project cost exceeds the \$450 million in currently available funds, a "Plan B" is needed to provide for that funding. It was explained by KRRC that "Plan B" is really a combination of value engineering (partial removal), outreach to the States and reaching out for philanthropic support. The KHSa allows for each of these actions. KRRC intends to incorporate a narrative to this effect within the body of the Final Definite Plan. It is the BOC's understanding that the States, KRRC, and other stakeholders are currently engaged in Plan B discussion and will ultimately agree on a Risk Management Plan and limits of indemnification.

Conclusion

The Board of Consultants, under FERC Letter of May 22, 2018¹ has been assigned, in part, to undertake the following inquiry:

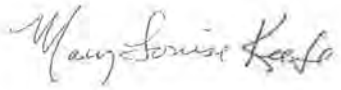
Review of adequacy of available funding and reasonableness of updated cost estimates for the most probable cost and maximum cost for the Full Removal alternative, and the assumptions made to calculate those estimates¹

The BOC's position is that the Cost Estimate have been compiled and vetted consistent with industry standards. Funds and contingencies appear to be reasonable and have a high likelihood of being adequate given the PDB contracting model, the choice of a proven, competent contractor, the inclusion of an experienced Specialty Indemnification Company (given the proposed scope) and the proposed (with certain details still evolving) Risk Management Plan.

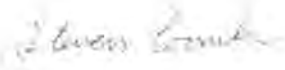
Ultimately however, it will be the Contractor's assessment of cost and the resultant GMP along with the confirmation of other cost elements that will determine the adequacy of funds. It is the BOC's understanding that the GMP, SIC Agreement, other stakeholder agreements, total cost, contingency, and risk evaluation will likely come together at a common point in time currently thought to be in the first quarter of 2020.

¹See, *PacifiCorp*, 162 FERC, 61,236 (2018) ("May 22 Letter Order").

Yours sincerely,



MaryLouise Keefe



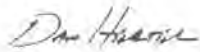
Steve Coombs



James Borg



Craig Findlay



Dan Hertel



Ted Chant

APPENDIX C

List of Review Documents

REVIEW DOCUMENTS

The Renewal Corporation provided the BOC with a number of additional documents in advance of the informal meetings, as well as in response to requests from the BOC. Provided below is a list of the review documents provided by the Renewal Corporation.

1. KRRC Request for Extension of Schedule to July 29 to Complete Response to Independent Board of Consultants Report No. 1: FERC Nos. P-2082; P-14803, NATDAM-OR00559, CA00323, CA00234, CA00323, to David E. Capka, P.E., Office of Energy Projects, Director, Division of Dam Safety and Inspections (D2SI), Federal Energy regulatory Commission, April 3, 2019
2. Klamath River Renewal Project, Estimate Review, 2nd Read Out, March 14, 2019, KRRC
3. KRRC Budget Implementation Estimate – Full Demolition, DRAFT 2/25/2019
4. KRRC Cost Estimate – Full Removal (Draft Construction Extract Only), June 2018 & February 2019
5. Klamath River Renewal Project 2019 Construction Schedule, CONFIDENTIAL DRAFT, 12-Mar-19 11:26 (13 pages)
6. Draft Agreement informal meeting agenda and presentation information, Olivia email, March 22, 2019
7. KRRC Cost Estimate – Full Removal (Draft Construction), June 2018 & February 2019
8. Review of Aon's Preliminary Risk and Insurance Recommendations, May 2, 2019
9. Klamath River Renewal Corporation, Supporting Information – Model Flows Subject to Refinement and Change, Aon, May 2, 2019
10. KRRC Insurance Summary – Confidential – For use by BOC Only
11. Proposed Liability Protection Program of Klamath River Renewal Corporation, KRRC, Draft – June 3, 2019
12. Liability Transfer Corporation, Klamath Hydroelectric Settlement Agreement, Presentation to: Board of Consultants, RES, June 6, 2019
13. Risk and Liability Transfer Plan, RES, June 6, 2019
14. Appendix B Risk Assessment Summary, Stantec, June 6, 2019
15. Review of RES' Liability Transfer Corporation (LTC) Approach, June 6, 2019
16. Executive Summary, RES LTC Draft Proposal, Klamath River Renewal Corporation, June 6, 2019

17. Proposed Liability Protection Program of Klamath River Renewal Corporation. Klamath River Renewal Corporation, June 6, 2019
18. Overview of Risk register and Risk Allocation Matrix, Klamath River Renewal Corporation, June 21, 2019
19. Definite Plan for the Lower Klamath Project, Appendix A - Draft Amended Risk Management Plan, Klamath River Renewal Corporation, July 2, 2019
20. Risk and Insurance Draft Due Diligence Report, Klamath River Renewal Project, Prepared for the Klamath River Renewal Corporation, AON, July 2, 2019
21. Klamath River Renewal Project, Board of Consultants Informal Meeting, Revised Cost Estimate Read-Out, Klamath River Renewal Corporation, July 9, 2019
22. RES Company Overview & Introduction, July 12, 2019
23. RES Estimated Mitigation Costs, July 12, 2019
24. Klamath River Renewal Corporation Organization Chart, Jul7 12, 2019
25. Project Agreement for Design, Construction, Demolition and Habitat Restoration Services in Connection with the Removal of the Lower Klamath River Dams, between the Klamath River Renewal Corporation and Kiewit Infrastructure West Co. (redacted), April 24, 2019
26. Appendices to the Project Agreement for Design, Construction, Demolition and Habitat Restoration Services in Connection with the Removal of the Lower Klamath River Dams, between the Klamath River Renewal Corporation and Kiewit Infrastructure West Co. (redacted), April 24, 2019
27. Draft Plan B Statement, Klamath River Renewal Corporation, July 12, 2019



July 29, 2019

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: Response to Independent Board of Consultants Supplemental Recommendations
FERC No. P-14803, NATDAM-OR00559, CA00323, CA00234, CA003251**

Dear Director Capka:

On November 28, 2018 the Lower Klamath Independent Board of Consultants ("BOC") issued its "Letter Report: Board of Consultants Mtg. No. 1 ("Report No.1"). After further review of the Klamath River Renewal Corporation's ("Renewal Corporation") response to the BOC's recommendations, on July 26, 2019, the BOC provided the Renewal Corporation with its "Letter Report: Supplement to Board of Consultants Mtg. No. 1" ("Supplemental Report no. 1"). The Supplemental Report no. 1 contains additional recommendations to which the Renewal Corporation now responds.¹ The Renewal Corporation appreciates the BOC's hard work and thoughtful responses to the questions that FERC asked the BOC to review. In response to these additional recommendations, KRRC submits the following plan and schedule to FERC for its review and approval.

Recommendation 1: The BOC recommends that the contingency be re-assessed once the final GMP is identified, LTC terms, conditions and costs are established, and assignment/mitigation strategies for the remaining risks are addressed.

Response: The Renewal Corporation accepts this recommendation. The GMP will be established in February of 2020 and included in an amendment to the Project Agreement. On or before this date, the Renewal Corporation anticipates that it will have negotiated a definitive agreement with RES as surety for long-term management of restoration and mitigation measures,

¹ This response to the BOC's Supplemental Report no. 1 is solely and exclusively attributable to the Renewal Corporation. PacifiCorp has cooperated with the Renewal Corporation and BOC to allow the BOC's work to be performed and completed in a thorough and timely manner. Except as may otherwise be expressly provided by PacifiCorp, all statements in this response are based on facts and information that are known to the Renewal Corporation and are not attributable to PacifiCorp or any other party.

and as a specialty corporate indemnitor, fulfilling its obligations under KHSA Appendix L to provide a specialty corporate indemnitor covering such risks. The Project Cost estimate and resulting contingency will be updated at that time. The Renewal Corporation will provide notice to the FERC and the BOC when these events have occurred.

Recommendation 2: The BOC recommends that the BOC reviews future iterations of the Project Insurance Program and PDB contract insurance requirements.

Response: The Renewal Corporation accepts this recommendation. The Renewal Corporation will work closely with Kiewit to refine the insurance program described in the Amended Risk Management Plan and will provide the BOC with updates should the recommendations stated in the plan change. The BOC will have an opportunity to review future iterations of the insurance plan. The final insurance plan will be reflected and updated (as necessary) when the Project Agreement is amended to incorporate the GMP. The Renewal Corporation will provide notice to FERC and the BOC when it has all binding commitments for insurance, bonds, and indemnification consistent with the Amended Risk Management Plan in place.

Recommendation 3: The BOC recommends that the Risk Register be updated monthly.

Response: The Renewal Corporation accepts this recommendation. The Renewal Corporation will update the risk register on a monthly basis. The Renewal Corporation will provide FERC and the BOC with updates of the Risk Register on a quarterly basis, or more frequently if requested.

Recommendation 4: The BOC recommends Renewal Corporation continue to work with PacifiCorp and the States to define the scope, level and term of indemnification that is currently set forth in the KHSA Appendix L.

Response: The Renewal Corporation accepts this recommendation. The Renewal Corporation will continue to work with PacifiCorp and the States to satisfy the conditions to acceptance of the transfer established by KHSA section 7.1.4, including but not limited to the requirements of KHSA Appendix L. The Renewal Corporation will provide notice to FERC and the BOC when it has satisfied the conditions of KHSA section 7.1.4.

Recommendation 5: The BOC recommends that further refining of “Plan B” continue.

Response: The Renewal Corporation accepts this recommendation. The Renewal Corporation will continue to work with PacifiCorp and the States to further refine Plan B.

The first milestone for such refinement is when the Renewal Corporation has established the GMP and LTC terms. At this point, should there be need for additional funding, the Renewal Corporation, in partnership with the states of California, Oregon and PacifiCorp, will evaluate value-engineering opportunities to reduce costs and risks that could arise after construction

begins. The Parties may also decide at this time to pursue additional funding sources in furtherance of their obligation to do so pursuant to Section 7.3.8.B of the KHSA.

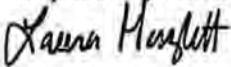
The second milestone at which the Renewal Corporation would refine Plan B (if necessary) is when all permitting conditions are known or can be anticipated with reasonable certainty. Should there be need for additional funding identified at this time, the Parties will again evaluate any further means to reduce cost or development risk. By way of example only, the Parties may consider the potential risks and benefits of pursuing the Partial Removal Alternative (as described in the Definite Plan for purposes of environmental review) in lieu of the current proposal, and then take such steps as might be required to pursue this alternative.

If, notwithstanding the Renewal Corporation's efforts to reduce cost and development risk, the Parties were to determine that additional funding is needed prior to acceptance of the license transfer, then Parties would respond by identifying potential partnerships to supplement funds in furtherance of their obligations to do so pursuant to Section 7.3.8.B of the KHSA. These additional funding sources, and commitments from such sources, would be incorporated in Plan B. As the BOC notes, there is broad support in the state governments for the completion of the project.

These refinements, should they be needed, will be in place before the Renewal Corporation may accept license transfer. The States and PacifiCorp must each be "assured that sufficient funding is available to carry out Facilities Removal," and that "their respective risks associated with Facilities Removal have been sufficiently mitigated consistent with [KHSA] Appendix L. This is required by Section 7.1.4 of the KHSA. Thus, before license transfer is effective, the States must assess and accept any risk that would fall under their purview as FERC jurisdiction over the project is relinquished under the terms and conditions of the surrender order.

Please do not hesitate to contact me if you need any additional information. Thank you.

Respectfully submitted,



Laura Hazlett
Chief Operations Officer & Chief Financial 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)