Appendix C

Summary of Public Comments Regarding the Draft PCB Report

NO	COMMENTER/ REQUESTER	REPORT	COMMENT	BUREAU OF RECLAMATION RESPONSE (12/2019)
1.	Duval	PCB & APM Reports	The Klamath Project was one of the earliest Reclamation projects, due in large part to the natural topography, soils and ease of development. Being developed at the start of the Reclamation program at the turn of the century, Reclamation had little experience with how important power development is to Reclamation projects. Also, in the early 1900's and particularly before large scale power developments by Reclamation during and after WWII, public power development was not viewed favorably politically. As such, the solution was to allow COPCO to partner with Reclamation on some project features, such as storage in Upper Klamath Lake. This worked favorably for both parties for close to 100 years. Essentially the reason why Reclamation did not develop power generation for the Klamath Project had little to do with the feasibility or need, and more to do with politics and lack of knowledge regarding development. Had the Klamath Project been developed later, then likely Reclamation would have had a better understanding of how important power development was to Reclamation projects and developed the power facilities as part of the Klamath Project. Public power development became an integral part of nearly all Reclamation projects, and Reclamation and the water users benefited from the stability and cost of those power developments. The only reason there was no development on the Klamath Project was because of the contracts with COPCO. There was no need for Reclamation to develop power itself. Unfortunately, while the contracts with PacifiCorp expired in 2006, the need for affordable power on the Klamath Project has not. The need for affordable power has actually increased, and the need for long term sustainable power supplies provided by Reclamation for the Klamath Project is more important than ever.	Comment noted; report introduction to be edited to provide context justifying Reclamation's role in Project power.
2.	Duval	PCB & APM Reports	While time of use and other demand side power management has some opportunities, it should be noted that this will have an effect of potentially spills and more inefficient water use. Due to the lack of natural drainage, while much of that water will be recovered and reused, this will require more pumping and an increase in overall power consumption.	Comment noted. Sections to be edited to acknowledge operational challenges.

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3.	Duval	PCB & APM Reports	The study focuses heavily on solar projects, and for good reasons though, problems have become obvious as to the limitations of ephemeral power generation, particularly large scale "grid" sized projects. In the last few years in has become common for excess power to be generated during the peak hours for solar generation. While solar no doubt has an incredible amount of potential for the Klamath Project, storage of that power during peak hours is to be as important as the generation infrastructure itself. E.g. in May of 2018, Cal ISO curtailed 72,064 MWh of solar generation. In May of 2019, that number increased threefold to 223,195 MWh. That large of an increase in rejected generation is a very important consideration. Therefore, there is a greater need to consider power storage as part of further work in returning affordable power to the Klamath Project. Traditional ways of storing power include pumped storage hydroelectric, which could also allow for some additional project water storage if sited correctly. Should there be power benefit to the Project, there could be a symbiotic relationship for the project and the water required would be much easier to source. Technological advances particularly in battery storage are happening at a rapid pace, which could also allow for unconventional ways of affordably storing electricity. For the long term viability of Klamath Project, Reclamation needs to emphasize the incredible efficiency of the Project, and how affordable power is a key component to the future. As the demand for water has increased outside of the Klamath Project, being able to affordably recycle water within the project is increasingly important for not only the Project itself, but to the many other demands, such as Tribal fisheries and in stream environmental needs. Being able to maximize water recycling requires affordable power but also has the potential to benefit all stakeholders of the Klamath River.	Comment noted. Pumped hydro and batteries are both viable energy storage technologies; this will be acknowledged in the report, along with cost trends and regulatory tradeoffs between the two.
4.	Gierak	N/A	It has come to our attention that the removal of four hydroelectric dams on the Klamath River is in violation of five federal laws in addition to exposing all in the affected areas to greater dangers should these dams be removed. Not only Oregon fires but consider the number of California fires that would have been much worse without the reservoirs from these dams.	Comment not relevant to affordable power in the upper Klamath Basin.
5.	Gierak	N/A	This communication is in reference to the proposed removal of four hydroelectric dams on the Klamath River. The entire proposal is based on the recovery of Coho Salmon which Federal Judge Michael Hogan in 1999 deemed were not indigenous and all listings in Southern Oregon and California waters were deleted. These Coho were planted from the Cascadia hatchery in Central Oregon.	Comment not relevant to affordable power in the upper Klamath Basin.

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6.	KWUA	APM Report	KWUA recommends and requests that the final APM report include more depth and discussion in Chapter 19. We appreciate that the current draft includes the recommendation that Reclamation proceed to feasibility studies of certain measures. At the same time, however, the report would benefit from additional information and analysis related to implementation overall. We understand that this is not a simple matter, and one size does not fit all. But specific or general recommendations and/or examples, building on Table 17-1, would be valuable. Beyond the further actions that Reclamation may undertake, KWUA, districts and individuals would like to understand "who and how" to the maximum extent possible, or at least the possibilities that may exist for concrete next steps. Somewhat related, we do not understand the specific meaning of the "Interest in Federal Funding?" column of Tables 17-2 and ES-3. This is not an objection to the category; a short explanatory sentence or sentences may be needed.	Comment noted. More detailed depth and discussion regarding next steps and how the APMs may be implemented will be included in the final report.
7.	KWUA	APM Report	Within the discussion of the Alternative 3 – Utility/Grid-Scale Facilities, a 200 MW facility is discussed. On page 27, the MWh output for this size of installation is discussed relative to the MWh of irrigation and drainage use. We would recommend that the size of the facility considered be better matched to the loads that it would serve, unless there is a reason for the current approach we do not understand.	Comment noted, will be addressed in the final report. Report could include an insert box defining MW and MWh to help non-technical readers understand the difference. Report should also include an analysis of the power needs.
8.	KWUA	APM Report	While the chapter includes a discussion of the use of net metering in conjunction with solar alternatives, the report does not specifically identify the potential to combine time of use rates (APM No. 5 in Chapter 11) with solar alternatives. Given that the on-peak time corresponds with solar output in many cases, there may be advantages of using a time of use rates in conjunction with solar alternatives. It is unclear if this will be included in the cost/benefit analysis for solar alternatives or for time of use rates.	This hybrid alternative to APMs No. 1 and APM No. 5 will be evaluated and incorporated into the final APM Report.
9.	KWUA	APM Report	With respect to Chapter 7, while the discussion specifically mentions the benefits under today's rates with respect to solar production, and the ability to avoid the transmission and distribution costs for the utility provider, it does not seem reasonable to expect that these rate policies will continue indefinitely. This is discussed in the Potential Challenges section of Chapter 8 but it should also be briefly addressed in Chapter 7. The cost/benefit analyses in Section 7 should reflect the potential that transmission and distribution costs will not be avoided in the future as one scenario. An additional issue to consider with regard to solar development generally is the variable and dynamic nature of solar incentives.	The relative risks and benefits of potential changes in PacifiCorp's retail irrigation rate structures will be addressed in the final report, including the need for water users to be involved in rate cases that may change current arrangements.

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10.	KWUA	APM Report	Chapter 8, on net metering, does a good job of discussing the overall issues and net metering practices in place today. However, the utility rates and policies are largely dependent on state regulations with respect to net metering requirements. This chapter could be enhanced by identifying and discussing the current and future state regulations that govern net metering rates and policies in Oregon and California.	The relative risks and benefits of potential changes to net metering rates and policies currently in effect in OR and CA will be addressed in the final report.
11.	KWUA	APM Report	KWUA does not believe that the measures in Chapter 10 are consistent with the requirements of the statute, in that they do not go to meeting the PCB. These measures should be set out separately in an appendix or otherwise distinguished. We acknowledge that conservation and efficiency are identified in the America's Water Infrastructure Act (AWIA), but their relevance in meeting the PCB would extend at most to the potential to reduce demand charges or otherwise affect the cost per kilowatt hour paid by the user. This comment should not be understood as an objection to conservation and efficiency measures, which have occurred and are occurring on a continuous basis.	Chapter 10: Equipment/Efficiency Upgrades will be presented in a separate chapter of the final APM report as an additional potential power-cost savings alternative.
12.	KWUA	APM Report	With respect to Chapter 12 (irrigation load control program), it would be nice to see the annual incentive payments shown in relation to the overall cost of running a typical 50 HP Pump, for example. It is unclear what the percentage of savings may be if the annual savings reflect a very low percent or a more significant percent of the bill.	Comment noted and will be addressed in the final report. Reclamation can provide some numbers in relation to 2019 participation in load control program at KSD. Numbers still coming in.
13.	KWUA	APM Report	KWUA recommends that the final APM report clarify whether the federal power purchases discussed in Chapter 14 would or could include Reclamation-owned pumps that are operated by districts (transferred works). More generally, if there are any legal uncertainties about "eligibility" overall, we recommend that be noted.	Comment noted and will be addressed in the final report.
14.	KWUA	APM Report	Finally, KWUA and its members and their patrons are, of course, very interested in the various "cost/benefit analysis results" that are described as being under development. We ask that there be an opportunity to discuss the nature of this analysis and its potential use, prior to the finalization of the report and as soon as practicable.	A review opportunity of the ‘cost/benefit analysis’ will be granted prior to the finalization of the report.
15.	KWUA	PCB & APM Reports	A number of editorial comments and recommendations are noted.	Editorial comments and recommendations noted are addressed in the final reports.

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16.	Pace	N/A	The federal government should not be involved in and federal funding should not be used to provide a competitive advantage to any private entity, including but not limited to private parties already receiving subsidized irrigation water deliveries via the Klamath Irrigation Project.	Comment noted. The history of Project power in the Klamath Basin clearly indicates the government's intent to provide low-cost power for Project use. In that context, efforts to lower Klamath power costs are not a new benefit, but restoration of a pre-existing one.
17.	Pace	N/A	Federal power and subsidies should not be available to Tulelake Irrigation District or any entity in order to extract and/or market groundwater because that will lower the water table and that will impose costs to towns using groundwater for drinking water.	Comment noted. Groundwater management is not Reclamation's responsibility, but instead falls under the purview of California and its SGMA.
18.	PacifiCorp	PCB Report	PacifiCorp has one overarching concern with the draft PCB Report – namely, the lack of details on the precise methodologies Reclamation used to actually calculate per-unit power costs. The report describes sources and methodologies in general terms, but does not detail exact methods or show any calculations. Without explaining to the reader which specific sources were referenced and how specific inputs from those sources were specifically used to generate per-unit power costs, the reader can neither replicate Reclamations' calculations nor assess whether the reports calculations and conclusions closely approximate an "apples-to-apples" comparison. Examples were provided highlighting this shortcoming.	Comment noted. Detailed sources and methodologies will be provided in the final report.
19.	PacifiCorp	PCB Report	Conclusion and Recommendations - The draft PCB Report provides a general starting point for comparing power prices for irrigators located in the Klamath Project with irrigators located in other Reclamation projects. However, the report's ability to support a detailed comparison is limited by the lack of transparency in its sources and methodologies. PacifiCorp respectfully recommends that the final draft of the report detail the specific sources referenced, explain how those sources were used, and show all calculations underlying the various conclusory tables. Without this information, the reader cannot fully understand, verify, and replicate Reclamation's conclusions. PacifiCorp also respectfully suggests that the next draft of the report utilize the same methodology for calculating the per-unit prices in the Klamath Project and at other Reclamation projects. Without using the same analytical methods, the value of the comparisons (which is the purpose of this exercise) is limited.	Comment noted. Detailed sources and methodologies will be provided in the final report.

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20.	WaterWatch	APM Report	In pursuit of our goal of protecting and restoring the Klamath's natural resources, WaterWatch was involved in proceedings before the Oregon and California Public Utility Commissions in 2005 and 2006 regarding the expiration of long-term Upper Klamath River Basin irrigation pumping subsidy contracts with the regulated electric utility PacifiCorp. The author of these comments additionally appeared as an expert witness in these proceedings. Both state commissions found the continuation of these exclusive electrical subsidies for Klamath irrigators – with a price tag of nearly $10 million annually falling on other PacifiCorp customers and shareholders – to be unlawful. This resulted in power cost normalization for Klamath irrigators, which was achieved after other ratepayer groups again covered the bill for a multi-year soft landing for local irrigators. Consistent with the American values of fairness, equality of opportunity, and competition, Klamath irrigators now pay the same tariffs for electric pumping as their same-state farming neighbors in the adjacent Butte and Rogue valleys.	Comment noted. The history of power development on the Klamath Project clearly indicates Reclamation's intent to use the COPCO contract to provide for affordable power for irrigation pumping and drainage in the same manner as it subsequently did using Project-Use Power for other projects in the PNW. Comparing the full tariff power rates in the Klamath Project with the PCB that resulted from this analysis indicates that Reclamation's intent is not being served at this time.
21.	WaterWatch	APM Report	Beyond restoring basic fairness, the normalization of electrical pumping costs on the Klamath has proven to be a major water conservation driver in a basin in dire need of water conservation. The biggest water conservation gain resulting from normalized pumping costs has occurred to avoid operational costs at Pumping Plant D, which represents the last drainage point at the southern terminus of the Klamath Project. In operation since World War II, Plant D was the single largest point use of electricity in the Project, using approximately 11,000,000 kWh per year. Under a now-illegal electrical pumping tariff subsidy, Tulelake Irrigation District (TID) pumped an average of 90,000 acre-feet of agricultural tailwater per year though the Sheepy Ridge Tunnel via Plant D. As mentioned previously, this electrical subsidy was ruled illegal by the Public Utility Commissions of Oregon and California in 2005 and 2006. Since power cost normalization, TID typically pumps roughly 20,000 acre-feet of tailwater per year through Plant D. The roughly 70,000 acre-feet of water conserved each year as a result of normalized pumping costs is more than double the water savings proposed under the now expired but previously much-touted Upper Klamath Basin Comprehensive Agreement (UKBCA), and comes at zero cost to taxpayers.	Comment noted. While higher power rates have stimulated increases in efficiency and reduction in tailwater, the tradeoff for reduced pumping through the D Plant has been a greatly reduced water supply for the LKNWR and reduced flexibility in water management in the Project. Reclamation seeks a solution that provides for both efficient and flexible water use.

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22.	WaterWatch	APM Report	Water has been severely over allocated in the Klamath Basin. The history of the Klamath painfully demonstrates that conflict between too many legitimate users over chronically scarce water supplies is a far bigger driver of economic uncertainty and economic disasters – both within the upper basin and along the hundreds of miles of Klamath River and Pacific Coast impacted by Klamath salmon fisheries – than normalized power rates for a select group of politically well-connected irrigators. Any meaningful long-term solution will require some downsizing of the Klamath Project and the retirement of other water rights throughout the basin. A voluntary program to give one-time financial assistance to agricultural landowners, by buying their lands or water rights at a fair price would be an equitable way to reduce agricultural demand, while giving more security to those who want to stay in business. A federally funded buyout program should be developed and implemented in this regard.	Comment noted. Cost overall vs rate are two different things. Reducing the size of the project may reduce overall pumping, and thus overall costs, however, that is not the goal of this study. It is to reduce rates to individuals and districts.

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23.	WaterWatch	APM Report	*Inappropriately Omitted Consideration of Available Actions* - Despite the fact that the legislative language authorizing this report specifically mentions the Klamath's National Wildlife Refuges, the APM makes no mention of these refuges whatsoever. The report thereby fails to consider what is dollar-for-dollar, acre-for-acre, the most beneficial option available for addressing the Klamath's water woes while at the same time significantly reducing overall pumping costs in a large portion of the Project: ending the damaging commercial use of the basin's National Wildlife Refuges and restoring these areas of publicly-owned lakebed. The federal government leases of 22,000 acres of publicly-owned lakebed within the Tule Lake and Lower Klamath National Wildlife Refuges for commercial agriculture. Phasing-out this lease land program and restoring these 22,000 acres of refuge to wildlife habitat would allow recovery of up to 100,000 additional acre-feet of much-needed water storage capacity, reduce irrigation water demand, and reduce irrigator operational costs at the massive Pumping Plant D. This solution could also increase aquifer recharge and reduce well pumping costs for users in the Tule Lake sub-basin, an area plagued by dramatically dropping groundwater levels due to over-reliance on groundwater pumping to compensate for over-appropriated surface water supplies. At the same time, this option would improve habitat, food production, and water quality for fish and wildlife, reduce toxic pesticide use, and reduce refuge dependence upon polluted agricultural runoff as a water supply. Removing the government from the local farmland rental market would end unfair competition with private landowners, and shift lease revenues from federal government coffers to local farmland owners, boosting the local economy. As refuge habitat, these lands could provide comparable levels of county tax revenue as currently provided by the lease lands program. This significant step towards sustainability could be achieved administratively, at low cost in comparison with other options, and without transferring any private lands to the public domain. In fact, this option would go a long way to restoring the original, primarily gravity-fed build of the Klamath Project, which relied on over 37,000 acres of what is now Tule Lake NWR as open water and wetlands to absorb upstream agricultural runoff not diverted though the Lost River Diversion Channel to the Klamath River. Reclamation's files and reports, specifically Reclamation's 1938 report by Senior Engineer J. R. Iakisch, clearly show that the decision to shrink this terminal sump to some 14,000 acres to allow for more farming on the sump area (now refuge) necessitated the installation of a massive electrical pumping station around WWII. Reclamation staff at the time bluntly wrote that this new development scheme and pump station would never be economically feasible without a large power subsidy. Prudence would dictate first considering correcting Reclamation's perhaps most unsustainable Klamath Project decision – to reduce the Tule Lake sump.	Comment noted. The legislation mentions the refuges simply as a former beneficiary of the previous power cost arrangement and does not direct Reclamation to consider cessation of refuge land leasing as a power cost measure. Such cessation would obviously reduce power costs, but not the power rates at the heart of the Power Cost Benchmark.

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24.	WaterWatch	APM Report	*Invalid Information* - The APM unfortunately presents an inaccurate history of Upper Klamath Basin irrigation development which largely ignores Reclamation's own trove of historical files, memos, and reports which clearly show that the vast majority of the original Klamath Project was developed – as intended – as a primarily gravity fed irrigation system. The record shows that the pre WWII Klamath Project was not a development dependent upon "inexpensive power for both drainage and pumping purposes" as incorrectly characterized on p. 8 of the APM. The report partially contradicts this assertion on p. 7, by stating correctly that the Klamath Project is "unique in that very little pumping is required to deliver water to the upstream portions of the Project…" Unfortunately, the report then immediately goes on to again suggest a wholly unsubstantiated Project dependence upon pumping via Sheepy Ridge, and elide the fact that most areas of the Project outside Tulelake Irrigation District can drain all runoff via the Lost River Diversion Channel – again, part of the original Project design. The APM report consistently provides invalid and/or confusing information about the Klamath power subsidy contracts and their evolution over the decades. For example, the report claims on page 8 that the PUC ruling ended years of "at-cost" power rates for some Klamath irrigators. This is incorrect. The irrigators rates under the contracts were dramatically below cost, necessitating other utility customers to collectively pay millions more. To add to the confusion, the current normalized rates for irrigators in the Klamath and all other areas of Oregon and California are commonly referred to as "cost-of service" rates. ON the same page, the report states, "The original COPCO/Reclamation contract was amended in 1956, featuring essentially the same power rates for an additional 50-year period." This is flatly false. The 1956 contract represented dramatic change specifically for Tule Lake subbasin irrigators, who saw their contract subsidy essentially double to prop up the viability of irrigation expansion in that area. The report authors are urged to please consult the detailed contracts history, with supporting citations, provided for free online in the 2002 report *Ratepayer Ripoff* by Oregon Natural Resources Council (now Oregon Wild).	Comment noted. Reclamation to provide more information on power cost history.
25.	WaterWatch	APM Report	*No Basis Provided for Significant Assertions* - APM's Executive Summary states: "Although Reclamation had the authority and intent to develop and provide power to the Klamath Project irrigators at the time of the Project's development, inadequate funding in the early years of development had prevented it from doing so." The report provides no basis to establish that Reclamation ever seriously had the "intent" to develop hydropower in Klamath. WaterWatch is unaware of any records supporting this claim. Moreover, the suggestion that an agency with Reclamation's well-known clout and perseverance would be thwarted in the development of Klamath hydropower by a regional public utility seems absurd. Reclamation held 1905 water rights to all unappropriated water in Upper Klamath Lake, and owned Link River Dam once it was completed at Copco's expense. The first contract expired in 1956, near the height of Reclamation's dam building power. The record shows that Reclamation largely achieved what it originally intended vis-à-vis hydropower in Klamath.	Comment noted. Reclamation to provide more information on power cost history.

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26.	WaterWatch	APM Report	*Gaps in Report, Missing Appendixes, Inadequate References* - The report contains considerable gaps in the presented information, including pages and pages of missing appendixes and few or no references.	Comment noted. Detailed sources and methodologies will be provided in the final report.
27.	WaterWatch	APM Report	*Insufficient Time, Incomplete Information for Public Comment* - The 15-business-day public comment period did not provide enough time to meaningfully review and provide feedback on the draft reports. This abbreviated public comment period gave advocates little time to review the incomplete draft materials and provide meaningful feedback. This is neither acceptable nor appropriate given the complexity of the issues involved, the number of interested parties, and the significance of the proposals. Conclusion - For the reasons set forth above, it is clear that the draft reports did not properly include sufficient information to fully consider the proposals or provide sufficient time for public comment. New draft reports including more complete information should be issued with a comment period more appropriate to the level of public interest, complexity of issues involved, and the volume of information necessary for review.	The legislation ordering these studies called for the reports to be completed by mid-April 2019. Reclamation is working diligently to minimize any further delays, unfortunately at the expense of a lengthy review period. If and when Congress directs further studies, there will likely be additional opportunities for public review.