February 19, 2024

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via: info@eklutnahydro.com

RE: Comments on the Draft Fish and Wildlife Program for the Eklutna Hydroelectric Project

Dear Ms. Owen,

These comments on the Draft Fish and Wildlife Program[1] (Draft Program) for the Eklutna Hydroelectric Project are submitted on behalf of Trout Unlimited (TU) and its approximately 20,000 members and supporters in Alaska, many of whom live in and around Anchorage and the Mat-Su Valley, pay Anchorage property taxes, and are members and ratepayers of Chugach or Matanuska Electric Associations. Trout Unlimited opposes the Draft Program because it fails to mitigate for the project's damages to fish and wildlife and their habitat, unnecessarily burdens and risks the Anchorage Water and Wastewater Utility infrastructure, relies on inaccurate and incomplete data and studies, and ultimately fails to satisfy the requirements of the 1991 Fish and Wildlife Agreement.[2] Importantly, if the Municipality of Anchorage, Chugach Electric Association, and Matanuska Electric Association (collectively "Utilities") implemented the Draft Program, they also would perpetuate a near century-long injustice upon the Eklutna Dena-ina people, who, despite countless contributions to the culture and economy of southcentral Alaska, had their namesake river and abundant salmon runs taken from them 94 years ago.

Although the Utilities frequently tout their "consultation" with TU and other stakeholders while attempting to create credibility for the Draft Program and their various studies—such as during public meetings, during Anchorage Assembly meetings and work sessions, during their own board meetings, and in the Draft Program itself[3]—these claims are hollow and insincere. Trout Unlimited consistently and repeatedly voiced serious concerns over the various study plans throughout the technical working group process—including in various written letters to the technical working group, at technical working group meetings and site visits, at the quarterly stakeholder meetings, and through various comments made to the Chugach Electric Association's board. Many of TU's concerns were shared by state or federal resource agencies, other stakeholders, or members of the public. In the end, the Draft Program is the product of bad science and the Utilities' internal economic and political calculations, and not the result of legitimate stakeholder engagement, sound science, or any reasonable cost-benefit analysis.

[1] Chugach Electric Assoc., Matanuska Electric Assoc. and Municipality of Anchorage, *Eklutna Hydroelectric Project Draft Fish and Wildlife Program* (Oct. 2023) hereinafter "Draft Program".
[2] Municipality of Anchorage et al., *Fish and Wildlife Agreement Snettisham and Eklutna Projects* (Aug. 7, 1991) hereinafter "1991 Agreement"
[3] *See id.* at 23.

The Draft Program should be rejected, and replaced with a Final Program that meets the obligations the Utilities agreed to in 1991.

I. The Study Plan and Draft Program Ignore Many of the Project's Most Serious Impacts.

The Eklutna Hydroelectric Project is having massive impacts to fish and wildlife and their habitat throughout the Eklutna watershed. These impacts affect a variety of resources, manifest in various ways, and compound over time. Many of these impacts extend back to the project's initial construction, continue to this day, and will continue indefinitely into the future if the Draft Program is adopted as final.

The Utilities made no effort to quantify or account for the breadth and variety of impacts their project had and is having on fish and wildlife and their habitat, as was required by the 1991 Agreement.[4] The Utilities compiled an initial information package that sought to collect the existing information related to the project, but never performed an assessment to fill in the blanks and quantify the impact of the project. The 1991 Agreement specifically required the Utilities to develop the study plan and fish and wildlife program because the project "may have resulted in a yet to be quantified impact to fish and wildlife resources" and because, "without FERC licensing, there is no opportunity to determine the extent of fish and wildlife impact, develop measures to protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat), and implement fish and wildlife measures found to be in the public interest."[5]

The Utilities should have quantified the suite of impacts the project had and is having to fish and wildlife and their habitat, then developed a mitigation program to address the project's various impacts that was commensurate with the scale and severity of those impacts. Instead, the utilities identified various environmental characteristics (such as substrate size or stream flow), modeled various operational scenarios to assess their cost and how each scenario affected the environmental characteristic, and then proposed a cost-driven Draft Program that has no relation to the still-unquantified impact the project is having on fish and wildlife and their habitat.

The study plan fails entirely to quantify the impacts of the project. As a result, the Draft Program ignores or inadequately addresses some of the most serious impacts of the project, including:

- Impacts to sockeye salmon – Sockeye salmon used to exist in abundance throughout the Eklutna watershed, including in Eklutna Lake and its tributaries. Recent surveys by scientists for the Native Village of Eklutna (NVE) show that a small population of sockeye salmon remain in the lower reaches of the river and a stunted remnant population remains in and around the lake. The Utilities only acknowledge the stunted remnant population in the lake, but appear to ignore the persistence of sockeye in the lower Eklutna River. Inexplicably, the Utilities falsely claim the Draft Program "will significantly benefit *all* four species of salmon that are currently observed in the lower river,"[6] presumably ignoring the presence of sockeye and focusing instead on just pink, chum, coho and Chinook salmon. Recent NVE studies and traditional ecological knowledge confirm that sockeye salmon once were an abundant and important resource throughout the

[4] *See id.* at 2, *providing that* "the Purchasers agree to fund studies to examine, and quantify if possible, the impacts to fish and wildlife from the Eklutna and Snettisham Project."
[5] *Id*. at 1-2.
[6] Draft Program at 1 (emphasis mine).

Eklutna watershed and were a major consideration during the federal government's divestiture of the project.[7] Despite this, the study plan makes no effort to quantify the impacts to sockeye and the Draft Program blindly ignores to sockeye, providing no meaningful benefit.

- Impacts to Chinook and coho salmon – Each of the five salmon species evolved to inhabit different habitat types and different parts of a watershed. Chinook and coho salmon rear for longer periods in freshwater before migrating to the salt and, therefore, are more susceptible to impacts to freshwater habitat. They also tend to migrate farther upstream and utilize more off-channel habitat compared to other salmon like pink or chum salmon. The study plan failed to quantify impacts particular to Chinook and coho salmon, and because of the inadequate studies the Draft Program fails to include mitigation measures designed to address impacts particular to these species.

- Impacts from a lack of marine derived nutrients – Marine-derived nutrients are important to ecosystem function throughout Alaska and elsewhere where anadromous fishes exist. The utilities seem to acknowledge that marine-derived nutrients no longer reach Eklutna Lake or upstream tributaries, but the study plan fails to quantify these impacts and the Draft Program proposes no action to make up for these impacts.

- Impacts to wildlife – The Utilities seem to acknowledge that there are impacts to wildlife, but make no effort to quantify those impacts or propose mitigation measures to make up for those impacts. How and to what extent have the various wildlife populations in the Eklutna watershed been affected by water diversions, wildly fluctuating lake levels, reduced salmon populations, or a lack of marine derived nutrients? What mitigation measures could help reduce or make up for these impacts?

- Cultural impacts from the loss of fish and wildlife – The project is located on traditional and cultural lands of the Dena'ina people, who were not consulted when the project was built, were not included as a party to the 1991 Agreement, have not had a significant voice in its operation, and have undoubtedly bore the brunt of the impacts from the project to the Eklutna River and its fish and wildlife. The Utilities made no adequate effort to quantify the cultural impacts that resulted from the loss of fish and wildlife, are taking no efforts to make up for past impacts, and are taking only token efforts to address ongoing impacts.

- Societal impacts from the loss of fish and wildlife – The study plan completely ignores the economic and social impacts resulting from the project's impacts to fish and wildlife and their habitat, and make no attempt to quantify the potential economic benefits of mitigating for those impacts.

Because the study plan never attempted to quantify the project's impacts and never examined how effective potential actions might be at addressing the suite of impacts caused by the project, as was required by the 1991 Agreement, the Draft Program fails to address the broad suite of impacts and ignores many impacts altogether.

II. The Studies and Study Reports are Flawed and Incomplete.

[7] *See* U.S. Dept. of Energy, *Divestiture Summary Report: Sale of Eklutna and Snettisham Hydroelectric Projects* at Appendix E-9 (Mar. 1992).

In addition to the fundamental faults with the study plan discussed above, various individual studies are fatally flawed and should not have been used to inform the Draft Program. These flaws were so severe the National Marine Fisheries Service and U.S. Fish and Wildlife Service refused to concur with the second year study plan. Unfortunately, these flaws were never remedied and, as a result, the studies produced unreliable and likely unrepeatable results.

The instream flow study and fish habitat modeling, in particular, were not properly administered and produced results that should not be used to inform the Draft Program. Despite the Eklutna River historically flowing at more than 1,100 cubic feet per second (cfs) during the summer months and having a bank-full flow of approximately 1,400 cfs, the fish habitat modeling suggests that salmon spawning and rearing habitat decreases when flows exceed as little as 40 cfs, a mere 3% of historic bankfull flow. According to the fish habitat models, virtually no spawning or rearing habitat would have existed in the Eklutna River when it flowed naturally, and you must draw down 97% of its bankfull flow in order to maximize coho spawning habitat.[8] Of course, we know this result is absurd since the Eklutna River once hosted abundant runs of all five species of Alaska salmon. Common sense should cause any critical observer to question these results.

In all likelihood, the instream flow study and fish habitat models produced these results because the data collected by the Utilities' contractors and inputted into the models was flawed and not representative of the Eklutna River. Bad data produced bad results. The various cross-sections used for the model likely failed to capture natural habitat complexity, bankfull and stream channel measurements entered into the model likely reflect the channel as it exists today after decades of greatly reduced flows and not the channel as it existed naturally, and limited test flows likely reduced the range of results from the model. While these issues were raised at multiple points throughout the technical working group's meetings, the Utilities made no effort to address any of these issues and offer no explanation for why the results of the model vary so wildly from what we know of how the channel and its salmon behaved naturally. There's likely no river system in Alaska, and perhaps none anywhere in the world, where you must withdraw 97% of a river's natural bankfull flow to achieve 99.6% of available habitat. Yet, that's precisely the result suggested by the instream flow study and fish habitat model relied upon by the Utilities.

III. The Draft Program Fails to Protect, Mitigate Damages to, or Enhance Fish and Wildlife and their Habitat.

Trout Unlimited opposes the Draft Program because it: (1) is unlikely to have a significant benefit for sockeye salmon and will have only limited benefit for Chinook and coho salmon; (2) excludes salmon from accessing a majority of their historic spawning and rearing habitat (26 out of approximately 38 miles of habitat); (3) returns less than 5% of historic river flows to just the lower-most portions of the river; (4) perpetuates a nearly century-long injustice borne by the Eklutna Dena'ina people; (5) unnecessarily burdens the Anchorage drinking water system; and (6) irresponsibly burdens ratepayers and taxpayers with $57 million in expenses to implement a poorly informed and unreliable mitigation plan. Ultimately, the Draft Program fails to "protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)"[9] as is required by the 1991 Agreement.

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[8] *See* Draft Program at 52.
[9] 1991 Agreement at 2.

In addition to the fundamental problems with the Study Plan and Draft Program discussed in prior sections, TU has the following specific comments:

- Section 1.1.2.2 Energy Generation and Cost of Power: While TU acknowledges that this is a low-cost source for power, the utilities fail to account for the costs to the environment borne by the public and the significant costs borne by the Eklutna People. The 1991 agreement allowed the Utilities to escape bearing many costs of the project for 30 years, since no FERC licensing was needed. Additionally, the project is not renewable consider it decimated an entire fishery and the harm it did to the Eklutna People.

- Section 1.2.1 Procedural Requirements: Not all parties were in agreement after each study year. For example, many parties requested a large flow release, which the Utilities unilaterally rejected.

- Section 1.3 Compliance Efforts to Date: As discussed above, the Utilities failed to satisfy the substantive and procedural requirements of the 1991 Agreement. The Utilities failed to quantify the impacts of the project, and in fact never made a meaningful effort to do so.

- Section 1.3.1 Early Consultation: Trout Unlimited commends the Utilities for initiating the process for the 1991 Agreement early and including various interested stakeholders. However, it is also clear the Utilities disregarded the input that was provided to it. Had the Utilities embraced the opportunity and developed its study plan and Draft Program through a truly collaborative process, there is no doubt a better result could have been achieved.

- Section 1.3.2 Initial Information Package: As discussed above, the IIP collected various helpful materials, but no subsequent effort was made to fill in the blanks.

- Section 1.3.4 Study Program: As discussed in Sections I and II, above, the study plan and various individual studies fail to satisfy the requirements of the 1991 Agreement:
    - The utilities never attempted to quantify the impacts of the project to fish and wildlife and their habitat, and never developed a program to protect, mitigate or enhance for those unquantified impacts.
    - Lumping all substrate less than 0.1 into a single category fails to account for different attributes of sand and fine silt, which can become embedded and resist movement in even large flows. Additional fine classifications should be used to account for this.
    - Bed elevation and water depth should have been measured more precisely than to 0.5 feet since current flows in the Eklutna River are so low.
    - Transporting the accumulated sediment, along with the sediment continually introduced, in the Eklutna River will likely require significant flows beyond what was contemplated by the Draft Study Plan. Historic flows often exceeded 2,000 cfs. While TU does not advocate for flows at that level, flows well beyond 150 cfs likely are necessary to transport embedded sediment, uncover important spawning gravel, reconnect off-channel habitat, and ensure productive salmon populations.
    - Studies should document the presence of all observed fishes, including resident fishes that might not be included as a focal species. Rainbow trout, Dolly Varden, lamprey, and other fishes should have been considered.

- The federal agencies did not concur to two of the studies, the Geomorphology and Sediment Transport Study Plan or the Instream Flow Study Plan, but the Utilities failed to reconcile the differences.

- Section 2.0 Alternatives Analysis: The Utilities are not providing decisionmakers and the public with the full range of potential alternatives and possible solutions to meet the requirements of the 1991 Fish and Wildlife Agreement. As just one example, the removing the dam was never considered or meaningfully studied, as was requested by various interested stakeholders.

- Section 3.0 Draft Fish and Wildlife Program: The cross-sections selected and measured by the consultants as part of the fish habitat modeling were not representative. They emphasized single-channel cross sections and avoided more complex channel types, such as areas with side channels or complex riparian areas. Importantly, salmon spawn and rear in more complex areas. In addition to picking bad sites for the cross sections, the bank full measurements at those cross sections were not correctly measured. The consultants measured the modern bank full and not the historic bank full. Since the channel hasn't had regular flow for ~70 years, the historic channel is overgrown and no longer shows traditional characteristics. In the end, because of these flaws, the model produced bad results that are not reliable. There's no way we can expect to recover 99% of available habitat while removing 97% of the water. These results should have raised immediate red flags calling into question the reliability and accuracy of the modeling. Instead, the Utilities plowed forward and built their Draft Program from fundamentally flawed modeling.

- Section 3.1 Impacts to Fish and Wildlife: . While TU agrees that other human activities have impacted fish and wildlife of the Eklutna watershed, including the lower dam up until when it was removed, the Eklutna Hydroelectric Project diverts the entire outflow from Eklutna Lake, causes massive lake level fluctuations, and completely blocks salmon and other fishes from migrating throughout the system (due to a lack of water between Thunderbird Creek and Eklutna Lake, and at the lake outlet due to the remaining dam). Unfortunately, the Utilities failed to quantify the impacts its project is having to fish and wildlife and their habitat. But, no other factor is having a greater impact than the Eklutna Hydroelectric Project.

- Section 3.2 PME Measure for Fish and Wildlife: Studies should have documented the presence of all observed fishes, including resident fishes that might not be included as a focal species. For example, rainbow trout and Dolly Varden can offer significant recreational value to anglers. Additionally, the study plan should have evaluated fish populations in the lake and in the tributaries that feed into the lake.

- Section 3.2.1 Year-Round Instream Flows: Current flows in the Eklutna River often are less than 10 cfs; however, the river flowed at much, much larger rates before construction of the Eklutna Hydroelectric Project. In fact, the Eklutna River was comparable in flow to Eagle River and much larger than many of the nearby rivers. The historic winter baseflow in the Eklutna River from mid-November through March was around 100 cfs, the normal summer flow was as high as 1,100 cfs, and bankfull flows were approximately 1,400 cfs.[10] At these flows, the main channel had connectivity with side channels and other off-channel habitats that were important for

[10] *See* Eklutna River Workshop, *Summary of Outcomes, Recommendations, and Future Needs* at 5, Figures 2 and 3 (June 2018).

rearing and over-wintering of juvenile salmon. Additionally, occasional peak-flow events at the outlet of Eklutna Lake saw flows exceed 2,500 cfs.[11] These peak flows were sufficient to move large volumes of course sediment, and to ensure sediment from the numerous alluvial fans feeding into the Eklutna River was transported downstream. Flows proposed in the Draft Program will not provide similar benefits, likely are not adequate for robust fish populations, and are unlikely to allow for natural ecological or geomorphological process.

- Section 3.2.1.1 Eklutna River Release Facility: The AWWU portal and pipeline are not viable options for reestablishing instream flow. Relying on AWWU infrastructure will leave significant portions of the watershed disconnected and dewatered. In addition, any instream flow that utilizes the AWWU portal or pipeline will periodically shut off any time AWWU needs to perform routine maintenance or upgrades. Intermittent or periodic dewatering, as will necessarily occur if the utilities rely on AWWU infrastructure for stream flow, would have a catastrophic effect on any spawning, rearing or migrating salmon populations, frustrate mitigation efforts, and inevitably render mitigation efforts a failure. Any alternative that relies on the AWWU pipeline or portal valve should be eliminated from consideration.

- Section 3.2.1.2 Flow Regime: As discussed above, transporting the accumulated sediment, along with the sediment continually introduced, in the Eklutna River will likely require significant flows beyond what is contemplated by Draft Program. Historic flows regularly exceeded 2,000 cfs. While TU does not advocate for flows at that level, flows well beyond 150 cfs likely are necessary to transport embedded sediment, uncover important spawning gravel, reconnect off-channel habitat, and ensure productive salmon populations. As discussed repeatedly, the instream flow study and fish habitat modeling is flawed and unreliable, and should not be the basis for determining the future flow regime.

- Section 3.3.1 Public Water Supply: Insufficient information was made available, and possibly withheld, from the public to adequately inform the public about potential impacts to the public water supply.

- Section 3.4.3.2 Other Monitoring Efforts: The Draft Program has inadequate monitoring provisions. A comprehensive monitoring and adaptive management plan should be included that focuses on: (1) ensuring successful upstream and downstream migration by salmon of all life stages and at all times past the dam at the outlet of the lake; (2) availability of off-channel rearing habitat; (3) successful migration upstream and downstream through the canyon; (4) availability of suitable spawning substrate and sediment transport; (5) and any other attribute necessary for the successful recovery of wild Chinook, sockeye and coho salmon.

- Section 3.5 Anticipated Costs: The Utilities understood that when they purchased the dam they were getting a deal. They got to avoid the costs associated with obtain a FERC license and could forgo implementing the 1991 Agreement for 30 years. The Utilities could have saved money for this inevitability or done more to invest in a solution they knew had to be found. The Utilities consistently talk about how rates could go up with any of these options. However, the Utilities apparently made no attempt to plan for this inevitability.

[11] *See id*. at 5, Figure 3.

- Section 4.5 Fish Passage: The Eklutna River was once a significant salmon producer that has the potential to produce large populations once again. We encouraged the Utilities to look for ways to assess potential wild salmon production and not just current presence and abundance. For example, what other river systems have similar attributes, including the presence of a large lake, and what can we learn from those systems about possible future production from the Eklutna River? The Draft Program should include provisions to provide adequate stream flow throughout the watershed and to reconnect Eklutna Lake and its upstream tributaries. The Draft Program fails to provide for upstream and downstream migration past the dam and is unlikely to reestablish viable sockeye salmon runs, will have limited benefit for other species, and should have been eliminated from consideration.

- Section 4.5.1 Lake Studies: A thorough understanding of the Eklutna Lake, the fish populations it currently supports, and the fish habitat available if it was reconnected to the downstream reaches of the river is essential to evaluating mitigation options and their potential outcomes. As part of these studies, the East and West Forks of the Eklutna River should have been assessed for their potential fish habitat and their potential contribution to fish production, both for resident and anadromous fishes. In addition to sockeye salmon, which are most commonly associated with lake habitats, Chinook and coho salmon, as well as resident fishes, likely could use the lake habitat and its tributaries if they were able to migrate past, both upstream and downstream, the Eklutna Hydropower Project.

- Section 5.0 Summary of Draft fish and Wildlife Program and Rationale: It appears that cost and continued energy production were the top priorities for the Utilities. We are committed to the expansion of renewable energy in southcentral Alaska, and we are eager to work with all parties towards that goal. Recent projections are that Alaska will easily meet the 80% renewable portfolio standard by 2040 given the known opportunities that include a major expansion of the Bradley Lake hydro that will generate more power than the Eklutna project, and an estimated 200 MW of new wind and solar projects under consideration across the Railbelt.

- Section 6 Next Steps: The public meetings were woefully inadequate for meaningful public engagement, and frequently included statements that misled or confused the public, whether intentional or not. Its no wonder that only 17 of the 230 attendees made comments at the public meetings.

IV. The Draft Program Fails to Satisfy the Requirements of the 1991 Agreement.

The study plan and various studies included therein fail to quantify the impacts of the project and fail to inform a fish and wildlife program reasonably calculated to address those impacts. Because of the flawed study plan and studies, the Draft Program is misinformed and unlikely to address many of the most serious impacts to fish and wildlife and their habitat. There was no attempt to quantify the impacts of the project, no examination of possible ways to address the complete suite of impacts, a lack of concurrence from the parties to the 1991 Agreement (along with opposition from other stakeholders), inadequate efforts to resolve differences, and ultimately a Draft Program that, if adopted, is not in the public interest and would fail to satisfy the requirements of the 1991 Agreement.

Despite these various flaws, many meritorious proposed mitigation measures were brought forward by various parties to the 1991 Agreement and other stakeholders. These proposals included various mechanisms to provide fish passage, various different flow regimes, dam removal, and habitat

improvements. In hindsight, it's clear the Utilities developed their Draft Program to be as inexpensive and least disruptive of existing operations as possible, without serious regard for their obligation to protect, mitigate, and enhance fish and wildlife and their habitat.

V. Conclusion.

At a minimum, a final fish and wildlife program needs to: (1) provide year-round instream flow that mimics and natural hydrograph and in sufficient quantity to reconnect off-channel habitat; and (2) reconnect the entire length of the Eklutna River watershed, including Eklutna Lake and its upstream tributaries. The Draft Program fails to accomplish either and must be significantly overhauled if it is to meet the requirements of the 1991 Agreement or the public interest.

As suggested by the Anchorage Assembly, the Utilities should extend their deadlines for this mitigation process, correct the deficiencies in the study plan, thoroughly consider and evaluate other alternatives, and attempt to reconcile the differences among the various parties to the 1991 Agreement. Because the Utilities voluntarily initiated the studies early, the deadline to initiate the Final Program is still years away. Additional time will allow the parties to the 1991 Agreement to better understand the impacts of the project, design protection, mitigation and enhancement measures to address those impacts, and collaboratively develop strategies to implement those potential measures. Trout Unlimited, among various other parties, would be eager to help in that process (and to cover the costs of additional potential protection, mitigation and enhancement measures).

Although the Eklutna River is one of the most heavily impacted watersheds in Alaska, running dry for more than 60 years with its lake and upstream tributaries cut off and diverted out of the basin, it retains all the core pieces that could allow salmon to thrive in its waters once again if given half a chance. Reconnecting Eklutna Lake and reestablishing instream flow, if done properly, is very likely to allow salmon to return in abundance. Unfortunately, this Draft plan fails to achieve either of these objectives and fails to satisfy the legal requirements of the 1991 Mitigation Agreement.

Sincerely,

Austin Williams
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