

multiple comment letters that Lake Almanor stakeholders have over the past two years submitted into the record for P-2105-089.

The Final Environmental Impact Statement (FEIS) that the Federal Energy Regulatory Commission (FERC or Commission) for the relicensing of Project 2105, issued in 2005, requires supplementation to address project effects on water quality both in Lake Almanor and the North Fork Feather River, as well as mitigation measures not evaluated in the FEIS.³ There are significant new circumstances and information relevant to the environmental concerns that have bearing on the proposed action and its impacts. This new information and these impacts were not analyzed in the 2005 FEIS. Essential environmental conditions and project effects related to water quality in Lake Almanor and the North Fork Feather River, and feasible mitigation measures for these conditions, must be addressed in additional review under the National Environmental Policy Act (NEPA). These conditions and effects have become evident in the following sources:

- The LACC et al. Motion to Intervene
- Multiple Lake Almanor stakeholder comments over the past two years
- CSPA and AW comments in the record for the relicensing of Project 2105⁴
- The State Water Board's Draft Environmental Impact Report for the (now waived) water quality certification for the relicensing of Project 2105.

We discuss the lacking analysis and proposed correction below.

³See Final Environmental Impact Statement for the Upper North Fork Feather River Project, Project No. 2105-089 (Nov. 10, 2005), eLibrary no. 20051110-4000.

⁴ See especially California Sportfishing Protection Alliance and American Whitewater's Comments on Necessary License Conditions Concerning Water Quality for Project No. 2105 (Jan. 5, 2021), eLibrary no. 20210105-5146 (CSPA and AW Comments, WQ Conditions). See also California Sportfishing Protection Alliance and American Whitewater's Comments and Response in Opposition to Petition for Waiver Determination (P-2105-089), (P-2105-126) (Jun. 5, 2020), eLibrary no. 20200605-5008 (CSPA and AW's Opposition to Waiver).

I. A Supplemental EIS Is Needed to Address Project Effects on Water Quality and to Analyze Feasible Mitigation Measures.

A variety of sources, with disparate perspectives, have placed documents in the record for the relicensing of Project 2105 that demonstrate that FERC must supplement the FEIS to analyze water quality in Lake Almanor and the North Fork Feather River, and to analyze feasible mitigations for project effects.

The LACC et al. Motion to Intervene out of Time raises the following concerns:

Given Lake Almanor’s large surface area and shallow depth, the lake is already relatively warm in the summer, and algae blooms have become a problem in the summer and early fall. For example, water temperature monitoring demonstrates that daily average surface water temperatures at Lake Almanor at Canyon Dam are over 20°C throughout July and August. Withdrawals of cold water from Lake Almanor under Condition 6 will accelerate the warming of the lake and exacerbate algae blooms. Algae blooms give rise to various toxins, including cyanobacterial blooms that are poisonous to humans, pets, livestock, birds, and other wildlife via ingestion, inhalation, or skin exposure.⁵

The Lake Almanor Watershed Group, in a September 16, 2021 letter, also commented that cold water fisheries habitat has worsened since 2009: “Our studies show that water quality in Lake Almanor has worsened since 2009 and that coldwater fish habitat is already severely restricted, especially in drought years.”⁶

In addition to concerns over algal blooms, the LACC et al. MTI expresses concerns over the impacts of the 2021 Dixie Fire on water quality:

The Lake Almanor Basin was also recently affected by the devastating Dixie Fire. The fire burned over one million acres, including 500 homes, and dramatically transformed the landscape. The fire caused significant changes to the basin, including run-off, soil erosion, and chemical inputs including phosphorus, nitrogen, and metals from fire retardants and burned structures.⁷

⁵ LACC et al. MTI, p. 13.

⁶ Comments of Lake Almanor Watershed Group (Sep. 16, 2021), eLibrary no. 20210916-5032.

⁷ LACC et al. MTI, pp. 13-14.

Similarly, the Lake Almanor Watershed Group commented on the further degradation of Lake Almanor Water Quality by the Dixie Fire:

The entire watershed structure and function will be changed by this immense fire, centered around Lake Almanor. The vitality of Lake Almanor and the entire Feather River is at risk. Significant changes in run-off, soil erosion, chemical inputs including phosphorus, nitrogen, and metals from fire retardants and burned structures, will promote turbidity and algal growth and result in deleterious changes in fish populations, habitat, seasonal temperature, and thermal regimes in the lake.⁸

While not yet definitively determined, it appears that PG&E power lines that service Project 2105 caused the Dixie Fire.⁹

Though not mentioned in the LACC et al. MTI, comment letters from Lake Almanor stakeholders raise additional concerns about the long-term adverse effects of climate change on various elements of Lake Almanor's water quality. For example, the letter of Sherry L. Warren states:

A major false assumption used in the Project 2105 is to model the effect using data that is 20-40 years old. The current model does not take into account rising temperatures, decreased snowpack and several drought years. The data does not reflect the current condition of Lake Almanor.¹⁰

Also, in a filing on March 21, 2022, the Lake Almanor Watershed Group discussed the effects of climate change on Lake Almanor's water quality:

The continued drought has meant less total precipitation, less precipitation as snow and, therefore, less runoff, resulting in warmer water temperatures. This has led to earlier establishment of thermal stratification (warmer water floats on colder water), which prevents deeper water in the lake from mixing with the oxygenated surface water. Decomposition of organic material in the deeper water uses up the oxygen that would be available to fish. In 2021 water in Lake Almanor at depths greater than 12 meters was devoid of oxygen by mid-July. These conditions persisted for longer than normal, putting the coldwater fish species, such as trout, under stress to find cold water with sufficient

⁸ Comments of Lake Almanor Watershed Group (Sep. 16, 2021), *op. cit.*

⁹ See San Francisco Chronicle, PG&E power lines started enormous Dixie Fire, investigators say (Jan. 4, 2022), available at https://www.sfchronicle.com/bayarea/article/PG-E-power-lines-started-enormous-Dixie-Fire-16749942.php?utm_source=newsletter&utm_medium=email&utm_content=briefing&utm_campaign=sfc_baybriefing_am&sid=5452adda3b35d010308be486

¹⁰ Comments of Sherry L. Warren (Mar. 7, 2022), eLibrary no. 20220307-0011.

oxygen. Increased stress can result in decreased growth rate and/or mortality. The primary refuge for fish in late summer was Hamilton Branch, which was much colder than the lake and well-oxygenated.¹¹

Finally, several comment letters from Lake Almanor Stakeholders¹² refer to a publication called the Lake Almanor Water Quality Report, 2020.¹³ In that report, Dr. Gina Johnston writes:

2020 was a very dry year with precipitation about half the average. Lake Almanor was cool and had lots of oxygen dissolved in the water in May at the first sampling date. By July 1, the lake was thermally stratified, meaning that water near the surface was warmed by the sun and stayed on top of the cooler, denser water below. The effect of the thermal stratification was that oxygen could not be introduced to the deeper water and oxygen levels were at or near zero for most of the summer and fall. This created a situation where cold- water fish species could not find ideal habitat in Lake Almanor.¹⁴

In sum, both the LACC et al. MTI and numerous Lake Almanor stakeholders point out degraded existing water quality at Lake Almanor. Dozens of stakeholders have written the Commission describing these effects. While an FEIS is not required to mitigate significant effects of a proposed action, it is absolutely required to *evaluate* such mitigation. The FEIS does not evaluate any feasible mitigations for these conditions.

This new and significant information was, in substantial part, not known when the FEIS issued seventeen years ago. The Revised Draft Environmental Impact Report (RDEIR) issued by the California State Water Resources Control Board in 2020 to support the now-waived water quality certification (WQC) for the relicensing of Project 2105 acknowledged the degraded water quality of Lake Almanor.¹⁵ However, the RDEIR and the WQC propose only the inadequate mitigation of additional fish stocking to address the condition.¹⁶

¹¹ Comments of Lake Almanor Watershed Group (Mar. 21, 2022), eLibrary no. 20220321-5002.

¹² For example, comments of Brian Parnell (Mar. 9, 2022), eLibrary no. 20220309-5095; comments of Bryan Daniels (Mar. 14, 2022), eLibrary no. 20220314-5212.

¹³ See [Lake Almanor Water Quality Report, 2020 - Sierra Institute](#).

¹⁴ *Id.*, p. 3.

¹⁵ State Water Resources Control Board, Revised Draft Environmental Impact Report for the Upper North Fork Feather River Hydroelectric Project, FERC Project No. 2105 (May 15, 2020), filed as eLibrary no. 20200519-5033, pp. 187-189.

¹⁶ *Id.*

In CSPA and AW Comments, WQ Conditions (Jan. 5, 2021), CSPA and AW propose an oxygenation system for Lake Almanor located near Canyon Dam to increase cold water habitat for fish by adding dissolved oxygen to the reservoir's hypolimnion.¹⁷ CSPA and AW explain:

There are two elements to habitat for cold-water fish in Lake Almanor: cold water and oxygen. Much of the cold water in Lake Almanor, largely located near Canyon Dam, is anoxic. Oxygenation of the cold water near Canyon Dam is necessary to mitigate for existing impacts of Project 2105 operation, which in Critically Dry and Dry years reduces cold water habitat in Lake Almanor to zero or near zero in August. ...

It is not possible to improve the thermal profiling of Lake Almanor. What is possible and completely feasible is to oxygenate the cold water that is present and will continue to be present in the lake.¹⁸

CSPA and AW's Opposition to Waiver (Jun. 5, 2020) also cites and provides a link to the 2015 comments of Plumas County on the State Water Board's 2014 DEIR in support of the WQC.¹⁹ Plumas County's 2015 comments include attachments, written in part by Dr. Gina Johnston, that propose an oxygenation system for Lake Almanor. Regrettably, Plumas County does not appear to have filed its 2015 comments and attachments to the Water Board in the FERC docket for Project 2105. However, CSPA and AW included a substantial excerpt of Dr. Johnston's 2015 comments and her CV in its petition for reconsideration (by the State Water Board) of the WQC, a copy of which CSPA and AW filed with the Commission on August 14, 2020.²⁰

¹⁷ CSPA and AW Comments, WQ Conditions, p. 3.

¹⁸ *Id.*, p. 5.

¹⁹ CSPA and AW's Opposition to Waiver, p. 18, citing in fn. 86 as follows:

Comments of Plumas County on DEIR (Mar. 26, 2015), available at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/docs/ferc2105/unffr_plumascountry.pdf. See *esp.* Attachment 1, Comments of Gina Johnston, PhD, pdf pp. 37-50 (on oxygen in project reservoirs generally and the need to oxygenate Lake Almanor specifically), and Attachment 2, Comments of Alice Rich, PhD., *esp.* pdf p. 70 (on use of a Speece Cone).

²⁰ See Comments of Plumas County on DEIR (May 26, 2015), Attachment 1, entered into the FERC record in Copy of Petition for Reconsideration of California Sportfishing Protection Alliance and American Whitewater of the Water Quality Certification for the Upper North Fork Feather Project; Filed as Comments on Project No. P-2105-089 (Aug 14., 2020), eLibrary no. 20200814-5112, pp. 10-26.

In 2015, Dr. Johnston provided the following analysis of both existing water quality conditions in Lake Almanor and proposed supplemental cold water withdrawals through Lake Almanor's Canyon Dam:

The DEIR concludes that the proposed UNFFR Project, as well as Alternative 1 and 2, will have a significant impact on the volume of suitable coldwater habitat during mid-July through August of critically dry years unless mitigation reduces that impact. This is because suitable habitat is not even present in the lake. The proposed mitigation of temperature monitoring and augmented stocking of coldwater fish following critically dry water years would just increase competition for a limited resource. No evidence is presented that restocking will improve the ability of the coldwater fishery to recover. No evidence is presented to explain how this would reduce the project impact on the coldwater habitat.

A more appropriate mitigation for the proposed UNFFR Project would actually increase coldwater habitat, reduce thermal stress and reduce overcrowding of coldwater species. The installation of a Speece Cone, such as has been installed at Comanche [sic] Reservoir, would oxygenate the hypolimnion without disturbing the thermal stratification. This would allow coldwater fish to utilize this portion of the lake during the summer months and it would prevent release of nutrients and hydrogen sulfide from the sediments. Such a mitigation measure should be required for the UNFFR Project, as proposed in the State Water Board Staff Recommendation.

Comanche [sic] Reservoir, where a Speece Cone has been operating for more than 20 years, is less than half of the volume of Lake Almanor and 135 feet maximum depth. Prior to installation it was plagued with an anoxic hypolimnion, fish kills and hydrogen sulfide generation in the sediments. Hypolimnetic oxygenation was selected as the best alternative to balance the coldwater fishery with water supply needs. The oxygen plume from the Speece Cone extends out as much as 3 miles into the reservoir and maintains oxygen concentration at 6 mg/L (Mello, 2014; Beutel and Horne, 1999).²¹

In 2020, Plumas County supported oxygenation systems for Lake Almanor. In comments on the Draft WQC for Project 2105, Plumas County's Board of Supervisors stated:

OXYGENATION

In the March 26, 2015 DEIR comment letter, Plumas County recommended oxygenation of Lake Almanor, and more particularly described in Attachment 1, comments of Gina Johnston, PhD, and Attachment 2, Comments of Alice Rich, PhD. Despite these DEIR comments, Plumas notes the RDEIR did not analyze oxygenation and the Draft Certification does not require augmentation of oxygen in Lake Almanor.

²¹ *Id.*, quoted in its entirety on pp. 21-22 of eLibrary no. 20200814-5112.

Plumas continues to stand by oxygenation as a reasonable measure for cooling downstream waters during peak summer heat conditions to mitigate for exacerbating summer anoxic conditions and thermal stress for coldwater fish in Lake Almanor and requests that oxygenation be considered in any future SWRCB proposals for larger withdrawals of cold water from the lower Canyon Dam gates during seasonal stratification conditions. Augmentation of an oxygenation facility near Canyon Dam is an opportunity to directly improve the water quality in Lake Almanor and can mitigate impacts on Lake Almanor's coldwater habitat.²²

II. “Do No Harm” Is an Inadequate Standard for Lake Almanor Water Quality.

Some commenters advance a “do no harm” standard as the benchmark that the Commission should use in considering actions that would affect water quality in Lake Almanor.²³ In general, the thrust of stakeholder comments on Lake Almanor is not aimed at *improving* the existing poor water quality conditions in the reservoir, but rather at not making them worse. The fear of damaging a valued resource is understandable. But, as dozens of commenters have affirmed, harm to the water quality and coldwater fishery in Lake Almanor is an ongoing and worsening effect of Project 2105, and neither FERC’s FEIS nor the State Water Board’s DEIR and WQC proposes to do anything about it. Least interested in mitigating the degraded water quality of Lake Almanor is PG&E, which has cynically played local interests against the North Fork of the Feather River for years to assure that PG&E doesn’t have to mitigate water quality either in the river or in the reservoir.

III. The Commission Should Prepare a Supplemental EIS to Evaluate Water Quality in Lake Almanor and the North Fork Feather River, and Feasible Mitigation for Project Effects Thereon.

Given the recreational and economic importance of Lake Almanor to Plumas County and its residents, the Commission should prepare and issue a Supplemental EIS to update and expand the analysis in the FEIS of project effects to Lake Almanor’s water quality and feasible

²² Plumas County Board of Supervisors, Public Comment Draft Water Quality Certification Project 2105 (Jun. 15, 2020), eLibrary no. 20200615-5042, p. 2.

²³ See, e.g., Comments of Marilyn Greene (Mar. 11, 2022), eLibrary 20220311-5038.

mitigation for those effects. The Supplemental EIS should at minimum analyze the following elements:

- An oxygenation system near Canyon Dam to oxygenate the hypolimnion of the most extensive area of Lake Almanor’s coldwater resources.
- An analysis of the how such oxygenation system would mitigate or reduce any adverse effects that might otherwise occur due to the implementation WQC Condition 6(A). While the Commission should prepare the analysis of an oxygenation facility in its own right and on a stand-alone basis, such a facility would likely mitigate the loss of cold-water habitat due to supplemental summer releases of cold water from Canyon Dam. The Commission should also conduct an analysis of both elements implemented together.
- A re-evaluation of the economics of Project 2105, with an up-to-date analysis of the value of power foregone, and a more granular analysis of intra-day and inter-day power values.²⁴

IV. The Commission Should Accept the March 15, 2022 Motion to Intervene of LACC et al., Provided that the Commission Also Prepares a Supplemental EIS.

The LACC et al. MTI directly states that its primary purpose is the opportunity to litigate the new license for Project 2105: “Movants’ primary purpose in seeking party status is to preserve its right to challenge the new license before the Commission and, if necessary, before the court of appeals should FERC require Conditions 1(B) and 6 as part of the license.”²⁵

²⁴ For further discussion of necessary elements of an up-to-date economic analysis, *please see* CSPA and AW Opposition to Waiver, pp. 19-21.

²⁵ LACC et al. MTI. p. 12.

CSPA and AW remind the Commission that WQC Condition 1(B) is *identical* to the agreed-to flow requirement in the Project 2105 Settlement Agreement.²⁶ It is disturbing that LACC et al. adopt an extreme position threatening litigation in opposition to it while claiming in error that the requirements are different: “Condition 1(B) of the SWRCB’s WQC includes a condition requiring minimum instream flows below Canyon Dam that are higher than those required under the Settlement Agreement.”²⁷ It is also disturbing to see this misstatement of fact reproduced in many of the individual comment letters submitted in the docket in 2022.

More broadly, and in part because of the apparent willingness of LACC et al. movants to litigate based on a factually incorrect premise, it is important that the record be complete and clear concerning the issues that are likely to be challenged at the Commission or in a Court of Appeals. The issues regarding coldwater habitat in Lake Almanor raised in relicensing Project 2105 and in the WQC have generated strong emotions, including fear of damage to a cherished and economically vital resource. The 2005 FEIS does not have the information and analysis necessary for the Commission or a panel of judges to make a fact-based licensing decision, particularly in the face of such emotion.

While it is appropriate to grant party status to LACC et al. in consideration of their stake in the outcome of the proceeding, it is also important that the Commission create the conditions in which both the Commission and a court (if necessary) have the analytical tools available to reach a well-reasoned licensing decision. A Supplemental EIS is needed to provide those tools.

²⁶ See WQC Condition 1(B), p. 21. See also Project 2105 Settlement Agreement, p. 19, reproduced as FEIS Appendix A.

²⁷ LACC et al. MTI, pp. 3-4.

V. Conclusion

For the reasons stated above, the California Sportfishing Protection Alliance and American Whitewater move that the Commission prepare a Supplemental Environmental Impact Statement for the relicensing of Project 2105.

Respectfully submitted this 24th day of March, 2022.



Chris Shutes
FERC Projects Director
California Sportfishing Protection Alliance
1608 Francisco St., Berkeley, CA 94703
blancapaloma@msn.com
(510) 421-2405



Dave Steindorf
California Stewardship Director
American Whitewater
4 Baroni Dr., Chico, CA 95928
dave@amwhitewater.org
(530) 518-2729

