

Table 4-1. Responses to Comments

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309	1	Yuba Water Supports the Healthy Rivers and Landscapes Agreements Yuba Water is proud to have worked with the California Environmental Protection Agency, the Department of Fish and Wildlife, the Department of Water Resources and many others since December 2018 in developing the proposed Agreements to Support Healthy Rivers and Landscapes. Under this comprehensive, collaborative plan, Yuba Water will: - Reoperate New Bullards Bar Reservoir to contribute, in specified water-year types, 50,000 acre-feet in additional flows on top of existing Yuba Accord flows for Bay-Delta fish and wildlife. - Contribute over \$5.3 million to fund the restoration of 50 acres of instream habitat and 100 acres of floodplain habitat on the lower Yuba River. - Fund a comprehensive science program for ongoing evaluation and adaptive management of these habitat enhancement measures. Encouraged by the Water Board's adoption of Resolution No. 2018-0059 (December 2018) to include evaluating agreements with water agencies to provide habitat enhancement measures as an alternative for the Bay-Delta Plan update, Yuba Water has already advanced habitat enhancement measures that have created habitat for Chinook salmon and other native species by restoring ecosystem functions previously lost under massive amounts of hydraulic mining debris that devastated the landscape of the lower Yuba River during Gold Rush Era.	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project.
309	2	The Draft Staff Report overstates the need for habitat enhancement in the lower Yuba River and understates the benefits of Yuba Water's habitat enhancement measures: • Overstates the habitat that juvenile salmon need by incorrectly	Given that the rearing period used for the analysis is February through June, 5 months, and juvenile fall-run Chinook salmon may spend 1-5 months residency in the stream, it is possible that a large majority of juvenile salmon may be present in the river simultaneously. Since the intent of the proposed VAs is to

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		assuming that all juvenile salmon in the river will be continuously present for the whole relevant period, which is inconsistent with biological variability. • Does not explain how it applied water temperature and other considerations, which has the effect of discounting the value of habitat that would be restored. • Underestimates the floodplain benefits that Yuba Water's habitat measures would provide because its analysis does not rely on the best available science from detailed Yuba River models that show how these measures would produce those benefits.	provide the habitat necessary to achieve 25% of the doubling goal, it was appropriate to base the doubling goal habitat area on the full number of juveniles to ensure habitat would not be limiting achievement of this goal. An explanation of how water temperature was applied can be found in Section 5.1.4, Application of Temperature Criteria for Spawning and Rearing Habitat, of Appendix G2, Final Draft Scientific Basis Report Supplement in Support of Proposed Voluntary Agreements for the Sacramento River, Delta, and Tributaries Update to the San Francisco Bay/Sacramento-San Joaquin Delta Water Quality Control Plan, of the 2023 draft Staff Report. The floodplain benefits analyses have been peer reviewed in the Scientific Basis Report Supplement. Please see Section 1.3.1.8, Hydrology and Operations Modeling, of Appendix G2 of the 2023 draft Staff Report for a response to comments received on the January 2023 Draft Scientific Basis Report Supplement suggesting that a monthly timestep was not sufficient to capture sub-monthly benefits of the VA assets. In addition, the VA parties did not release sub-monthly schedules for VA flow releases. The default VA flow schedules included in the draft VA Strategic Plan in Appendix G1, Voluntary Agreement Proposal, of the 2023 draft Staff Report have a monthly timestep. Furthermore, as described in Appendix G2 of the 2023 draft Staff Report, the MFE analysis used a conservative approach so suitable habitat would be guaranteed. Please see Common Response 3.1, Fish Protection, for an explanation of the use of best available science.
309	3	Nevertheless, the Draft Staff Report Confirms that Yuba Water's Habitat Enhancement Measures Are the Preferred Alternative Yuba Water hopes the State Board will address these concerns in reviewing the proposed Healthy Rivers and Landscapes Agreements. But even with these deficiencies, the Draft Staff Report confirms that Yuba Water's habitat enhancement measures will benefit salmon and other fish in the lower Yuba River and fish and wildlife in the Bay-Delta. Yuba Water urges the State Board to approve the proposed Healthy Rivers and Landscapes Agreements as the preferred alternative for contributing to implementation of the Bay-Delta Plan update.	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project.
309	4	The Flow-Only Alternative is Not Adequately Analyzed, Would Not Be Feasible to Implement and Would Cause Significant	The Staff Report includes detailed analyses of the impacts of the revised proposed Plan amendments and all alternatives. Please

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		Adverse Impacts to Water Supplies, Fisheries, Power Generation, and Other Beneficial Uses A fundamental flaw with the Draft Staff Report's description of the proposed unimpaired flow-based water quality objectives - including the proposed Inflow and Cold Water Habitat Objectives that would apply to Yuba Water - is that it is impossible to adequately understand the effects of the proposed Objectives, which is essential for an analysis that is compliant with CEQA.	see Common Response 7.1, General CEQA and Approach to the Analysis. Please also see the responses to comments 309-5 and 309-6.
309	5	The Unimpaired Flow Alternative Is Too Vague First, the Inflow Objective proposes that minimum streamflows from the Sacramento River watershed to the Bay-Delta would be in a range of 45% to 65% of unimpaired flow—which creates a range of uncertainty of roughly 5 to 10 million acre-feet a year. For context, Lake Shasta is the state's largest reservoir and can hold about 4.5 million acre-feet and the combined storage of Shasta, Oroville, New Bullards Bar and Folsom Reservoirs is about 10 million acre-feet. In other words, the proposed Objectives' annual range of uncertainty equals the full capacity of the four largest reservoirs in the Sacramento River watershed.	The unimpaired flow range would provide flexibility for adaptive implementation. The Staff Report includes impact and benefit analyses for the full range of unimpaired flows in the alternatives, ranging from 35 to 75 percent of unimpaired flows. Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project.
309	6	Second, the Draft Staff Report proposes that, under the proposed Inflow and Cold Water Habitat Objectives, the State Board, and especially its staff, would have ongoing, but undefined and unprecedented discretion over all reservoirs and diversions the Sacramento River watershed, including New Bullards Bar Reservoir and all other facilities in Yuba Water's Yuba River Development Project (YRDP). For example, the Draft Staff Report states that reservoir operators like Yuba Water would be required, under both the "default implementation and the "voluntary implementation" pathways, to submit annual operations plans to the State Board's Executive Director for his or her approval "and possible modification." (Draft Staff Report, pp. 5-24 to 5-25.) It therefore is impossible to know what requirements the State Board might impose on Yuba Water and other reservoir operators under the proposed Objectives.	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project. Also see Chapter 13 and Common Response 1.3, Revised Proposed Plan Amendments, for more information on the regulatory pathway implementation of the cold water habitat objective. The Staff Report includes modeling of the requirements of the cold water habitat objective. A full range of flow scenarios with cold water storage targets are analyzed in Section 7.3, Aesthetics, through Section 7.20, Utilities and Service Systems and the corresponding sections of Chapter 9, Proposed Voluntary Agreements, and Chapter 13.
309	7	Impacts to Water Supplies, Fisheries, Zero-Carbon Hydropower Generation, Flood Control and Disadvantaged Communities.	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project.

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309	8	The SacWAM modeling results in the Draft Staff Report's related appendix (Appendix A1) show that the State Board could seek to require Yuba Water to hold water in New Bullards Bar Reservoir so high that it would almost reach the reservoir's flood-control pool, which would almost eliminate Yuba Water's ability to operate the reservoir to serve Yuba County and the rest of California. [footnote 1: 1 Copies of the Draft Staff Report's modeling and analytical results described in this paragraph are attached to this letter. [Exhibit 1]]. These extraordinary results appear to derive from the SacWAM model's underlying rules and the inequitable application of those rules to Yuba Water among diverters in the Yuba River watershed. The SacWAM model does not include critically important regulatory requirements like flow fluctuation criteria that could multiply the proposed Objectives' effect on Yuba Water. Moreover, while the SacWAM model would apply a requirement to meet unimpaired flow-based requirements at the Yuba River's mouth only on Yuba Water, the SacWAM model's internal rules are designed to allow upstream diverters in the watershed that export about 500,000 acre-feet of water annually from the watershed to largely continue to do so while contributing nothing to mitigate for their impacts. As a result, not only does that modeling indicate that the State Board would significantly limit the ability of New Bullards Bar Reservoir to provide its critical benefits, but it also indicates that Yuba Water would often be required to bypass over 70% of unimpaired flow in many conditions.	Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for a response to comments about carryover storage targets and SacWAM reservoir buffer pools, and comments about Yuba River model representation and operations, including regarding flow fluctuation.
309	9	The Draft Staff Report repeatedly states that water transfers would mitigate the proposed Objectives' water-supply impacts but does not consider the impact on Yuba Water's transfers, which were about 53% of all transfers from the Sacramento River watershed to other parts of the state in the Draft Staff Report's study period. Implementation of the proposed Objectives would terminate all water transfers under the Yuba Accord (one of California's most acclaimed and successful water transfer programs) to the detriment of cities and communities throughout California.	The impact conclusions made in the draft Staff Report do not rely on the implementation of other water management actions and recognizes that the availability of replacement supplies may be limited.
309	10	By significantly increasing the water-supply shortages that Yuba Water would need to impose on Yuba County farmers, the	The comment refers to the 2023 draft Staff Report Section 7.4, Agriculture and Forest Resources, p. 7.4-36, which is on the

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		proposed Objectives likely would cause groundwater pumping in the county to increase significantly, but the Draft Staff Report's analysis does not analyze increased pumping in multi-year droughts, or even in critical years, as separate from less severe dry years (p. 7.4-36).	agricultural impact analysis and on the discussion for Impact AG-a and Impact AG-e or the conversion of important farmland. The referenced agricultural impact analysis uses SWAP with SacWAM inputs, which reflect hydrologic variability from 1923–2015, including multi-year droughts. Therefore, the SWAP analysis already accounts for cumulative drought effects through its water supply inputs. As noted in the draft Staff Report, impacts in any given year may differ from the “Dry Year” scenario, but additional modeling would not change the conclusion of potentially significant impacts. SWAP is an annual model that reallocates water to higher-value crops during shortages and assumes fallowing equals permanent land conversion—a conservative assumption, as described in Section 7.4, Agriculture and Forest Resources. Running a multi-year drought scenario would likely reduce water demand over time, lowering groundwater impacts. The analysis cannot assume simultaneous worst-case conditions for both agriculture and groundwater. For more information on Dry Year versus Critically Dry Year and multi-year drought used in SWAP modeling, please see Common Response 7.4, Agricultural Resources. For more discussion on groundwater modeling, SWAP, and agricultural analysis, including a discussion of multi-year drought analysis, potentially significant impacts to groundwater and their mitigation measures, please see the groundwater impact analysis discussion in Common Response 7.12.2, Groundwater and Sustainable Groundwater Management Act. Also see Appendix A3 Agricultural Economic Analysis: SWAP Methodology and Modeling Results for information on estimated groundwater pumping in the Surface Water Allocation Model (SWAP) model and response 309-79 for more information relating to groundwater pumping. For more information regarding hydrologic modeling in multi-year droughts, see Common Response 4.2, Drought and Climate Change, for more information regarding hydrologic modeling in multi-year droughts.

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309	11	The Draft Staff Report admits that its analysis of Yuba River water-temperature impacts on fish is only qualitative (p. 7.6.2-88), so it does not consider the best-available science, which is a 2022 quantitative analysis of that issue that Yuba Water prepared and submitted to FERC (at the State Board's request) which shows that implementing a minimum flow requirement of 55% of unimpaired flows would cause significant water temperature impacts to the river's salmon, steelhead and green sturgeon.	An analysis for the Yuba River has been added to Chapter 13, Revised Proposed Plan Amendments. A temperature model was developed for the Yuba River. Please refer to Appendix H1b, Water Temperature Modeling and Fish Assessment for the Sacramento, Feather, American, and Yuba Rivers, for more information about the Yuba temperature model and results.
309	12	Yuba Water's New Colgate powerhouse would be by far the most impacted hydroelectric facility analyzed by the State Board [Exhibit 2]. The annual average reduction in New Colgate's generation would be almost double the reduction at the Hyatt powerhouse at Lake Oroville, even though Hyatt is almost twice as big as New Colgate. The Draft Staff Report generally says that implementation of the proposed Objectives could exacerbate rolling blackouts (p. 7.8-29), but it does not consider the impacts of significantly reducing generation at New Colgate powerhouse, which is one of northern California's most significant hydroelectric peaking facilities, and a vital resource to CAISO during heat emergencies and other periods when the state's energy grid is under extreme stress.	Reduction of hydropower generation at Colgate Powerhouse is part of the environmental analysis. Please see Common Response 7.8, Energy and Hydropower, regarding evaluation of local effects and grid reliability.
309	13	The Draft Staff Report does not analyze the flood-risk impact of requiring Yuba Water to hold New Bullards Bar Reservoir at nearly its flood-control pool going into the winter, which would significantly reduce Yuba Water's current and future flexibility to operate the reservoir to manage floods. Instead, the Draft Staff Report inappropriately uses, as flood-risk indicators, levels of flow that are less than 20% of historical peak flood flows on the Yuba River. (Pp. 2-53 (peak Yuba River flood flows of 180,000 cfs), 7.12.1-113 (Yuba flood-risk "maximum" flow standards of 15,000-22,000 cfs).)	The flood risk indicators are based on monthly model results of baseline conditions and the flow scenarios. As described in Section 7.12.1, Surface Water, for Impacts SW-c, SW-d, and SW-i, increases in the highest monthly flows or reservoir storage during periods with the highest monthly flows are an indicator of possible increased risk of peak daily flows. The Staff Report explains why the monthly SacWAM results are sufficient for assessing change in flood risk even though flooding occurs on a shorter time scale. A monthly analysis is sufficient because, if the monthly average flows during the wettest months and years do not increase, peak flows also should not increase at shorter time scales. This assumption is valid because the conditions associated with the highest monthly average flows are also associated with the highest peak daily flows. Flood flows occur when reservoirs cannot retain sufficient volumes of water. Reservoir operations are guided by flood control rule curves, which define the volume of flood space necessary during

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			different months of the year. Flood control rule curves would be the same with the proposed Plan and the regulatory pathway of the revised proposed Plan amendments as they are for baseline conditions. Under the regulatory pathway, there are times when reservoirs releases would be greater than under baseline to meet flow requirements, and the storage would be reduced so that flood control releases would be delayed and/or reduced. The evaluation for Impact SW-i shows some increases in the flow and storage indicators for flooding on the Yuba River but describes why these increases are considered to be less than significant. If fall storage is too high for flood control purposes, water would be released in order to provide adequate flood control space. There is no 750 TAF carryover storage requirement for New Bullards Bar Reservoir. The SacWAM modeling associated with the Chapter 7, Environmental Analysis, evaluation of the proposed Plan amendments frequently resulted in carryover storage in New Bullards Bar Reservoir that was higher than carryover storage target ranges. High carryover storages during wetter water years was an artifact of modeling protocols used to protect carryover storage during dryer conditions. Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, regarding SacWAM modeling of carryover storage. As described in Chapter 13, Revised Proposed Plan Amendments, and Appendix H1, Sacramento Water Allocation Model Methods and Results for the Revised Proposed Plan Amendments, of the final Staff Report, the updated SacWAM modeling for the regulatory pathway of the revised proposed Plan amendments includes a lower reservoir buffer to represent lower carryover storage target for New Bullards Bar Reservoir. This results in generally lower carryover storage in New Bullards Bar Reservoir than what was modeled for the proposed Plan amendments described in Chapter 7.
309	14	The Draft Staff Report fails to analyze the impact on the one-half of the people of Yuba County who live in disadvantaged communities resulting from the Objectives' impacts on Yuba Water's water transfer and power generation revenues, which	Please see Common Response 10.1, Economically Disadvantaged Communities, for responses to water provider comments and DACs. Also see Common Response 8.1, Economic Analysis and Other Considerations, for discussion of economic effects to Yuba

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		are the only local funding available for needed flood-risk reduction measures and other water-related projects.	Water Agency from reduced revenue from hydropower production and water sales.
309	15	In summary, it is not feasible to implement the proposed Inflow and Cold Water Habitat Objectives as described in the Draft Staff Report. Moreover, on their own terms, those proposed Objectives, and the way that the State Board would implement them, are so vague that it is impossible to fully understand the effect that they would have on actual operations, which is a fatal deficiency under CEQA.	The inflow and cold water habitat objectives were described in detail in Section 5.4, Proposed New and Modified Objectives and Implementation, of the 2023 draft Staff Report. Please also see Chapter 13 and Common Response 1.3, Revised Proposed Plan Amendments, regarding the revised proposed Plan amendments and cold water habitat objectives.
309	16	We appreciate your consideration of these comments and urge the State Board to advance the Healthy Rivers and Landscape Agreements as the preferred alternative, and not pursue the proposed Inflow and Cold Water Habitat Objectives further. We are available to discuss these comments at your convenience.	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project.
309	17	[Exhibit 1: Figure A1-134, New Bullards Bar Reservoir End-of-April and End-of-September Storage Percent Exceedance Plot, from the 2023 Draft Staff Report]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	18	[Exhibit 2: Figure 7.8-14, Estimated Average Change in Hydropower Generation for the 55 Scenario at Individual Hydropower Facilities, from the 2023 Draft Staff Report]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits. Please see Common Response 7.8, Energy and Hydropower, regarding evaluation of local effects.
309	19	[Att. 1:] As explained in more detail below and in YWA's transmittal letter, it is a party to, and a strong proponent of, the proposed Agreements to Support Healthy Rivers and Landscapes, which the DSR discusses in its Chapter 9 as the "Voluntary Agreements" or "VAs." YWA would like to make clear that none of these comments should be understood as suggesting that YWA believes that the DSR would not support the State Board's approval of the VAs. YWA in fact does believe that the DSR is more than adequate for that purpose. In its Chapter 5, the DSR proposes that the State Board could amend the Bay-Delta Water Quality Control Plan (the "Bay-Delta Plan") to include several new water quality objectives, which the DSR discusses under the headings "Inflow," "Cold Water Habitat,"	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project.

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		"Delta Outflow," "Suisun Marsh," and "Interior Delta Flows." While YWA understands that these proposed objectives would function together in concept, YWA's comments focus on the effects of the proposed Inflow and Cold Water Habitat Objectives because YWA and its Yuba River Development Project ("YRDP") are located well upstream of the Bay-Delta, so those proposed Objectives would be the ones that apply to YWA.	
309	20	[ATT. 1:] The State Board has requested that those commenting on the DSR identify, to the extent possible, where their comments concern the DSR's compliance with the California Environmental Quality Act ("CEQA") or CEQA more generally. In some places, these comments cite CEQA, and identify violations of and non-compliance with, CEQA explicitly. More broadly, however, many of the following comments identify significant flaws and inadequacies in the DSR's analysis of the environmental and other impacts of the proposed Objectives, as they would be implemented as described in the DSR. The fundamental purpose of a CEQA document "is to give the public and government agencies the information needed to make informed decisions, thus protecting not only the environment but also informed self-government." (In re Bay-Delta Programmatic EIR Cases (2008) 43 Cal.4th 1143, 1162 (citations and quotations omitted).) all of YWA's comments that identify flaws and inadequacies in the DSR's analysis are CEQA comments. To the extent that any of YWA's comments below particularly concern issues under CEQA due to their technical nature, they are Comments 2 through 9. Because the question is similarly technical, many of those same comments also concern whether the DSR demonstrates that the State Board could comply with the Porter-Cologne Water Quality Control Act's ("Porter-Cologne") basic requirement that water quality objectives "reasonably protect" beneficial uses.	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project.
309	21	[Att. 1:] The Draft Staff Report Accurately Describes Yuba Water Agency's Proposed Agreement To Support Healthy Rivers and Landscapes, But It Overstates The Need For Habitat Enhancement Measures In The Yuba River And Understates The Benefits Of The Agency's Proposed Voluntary Agreement [footnote 2: The "Agreements to Support Healthy Rivers and Landscapes" is the updated name and reference for the	Please see the responses to comments 309-22 through 309-29.

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		"Voluntary Agreements" or "VAs" as described and detailed in the DSR Chapter 9 and Appendix G.]	
309	22	[Att. 1:] As discussed in YWA's transmittal letter, YWA, along with the Department of Water Resources ("DWR"), the California Department of Fish & Wildlife ("CDFW") and many public water agencies, is proposing an Agreement to Support Healthy Rivers and Landscapes for the Yuba River. YWA is a very strong proponent of this agreement, and of the overall program of which it is a part, which the DSR analyzes as the "VAs." YWA has reviewed in detail the DSR's discussion of the VAs and, in particular, its discussion of YWA's proposed VA, which the DSR incorporates and summarizes. (DSR, pp. 9-1 to 9-10; DSR Appendix G1.) [footnote 3: The DSR presents proposed flow and non-flow measures for the VA program by geographic area, in particular by river in the case of Bay-Delta tributaries. YWA's VA flow contribution (YWA's proposed VA) will provide up to 50,000 acre-feet per year during certain water year types. The March 2022 MOU states that habitat restoration in the lower Yuba River includes 50 acres of instream habitat and 100 acres of floodplain habitat. As YWA's contribution toward that habitat restoration, under its proposed VA, YWA would contribute \$10 million, prorated over the actual term of the VA, together with additional state funds as needed to meet the 150 acres of lower Yuba River habitat enhancement. Consequently, as used in these comments and their attachments, the phrase "YWA's proposed VA habitat enhancement measures" refers to the entire 150 acres identified for the lower Yuba River.]. YWA believes that the DSR accurately describes its proposed VA. In addition, YWA's hydrology consultant has reviewed the SacWAM modeling of the VAs and believes that it generally results in similar January to June flow changes to what YWA's more detailed modeling has shown, although with somewhat less increase in outflow overall in the years that YWA proposed VA outflows.	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise significant environmental impacts of the project, or do not raise specific economic effects of the project.
309	23	[Att. 1:] However, YWA has the following comments on the DSR's analysis and discussion of the VAs. The VAs, As Proposed By YWA And Other Proponents, Do Not Include Default Implementation Of The Proposed Inflow, Cold Water Habitat And Other Non-VA Water Quality Objectives Proposed In The Draft Staff Report	The State Water Board was not a signatory to the MOU and is not bound by the terms. Please refer to Common Response 1.1, General Comments, for responses to comments that either make a general comment or do not raise significant environmental issues. Additionally, please refer to Common Response 1.2, Water Quality Control Planning Process, and Common Response 1.3, Revised Proposed Plan Amendments.

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		The DSR suggests in a number of places that the proposed VAs include a proposed program of implementation that would involve a “regulatory pathway” that incorporates the Inflow, Cold Water Habitat and other non-VA water quality objectives proposed by DSR, “if the VAs are not continued” or were to be unsuccessful in adequately advancing conditions for native fish. (DSR, pp. 1-3, 5-2, 9-2, 9-6, 9-16 to 9-17, 9-82.) However, as discussed in NCWA’s comments, the proposed Vas do not include such an automatic default to the Inflow, Cold Water Habitat and other non-VA water quality objectives proposed by DSR under any circumstances. The term sheet attached to the March 29, 2022 Memorandum of Understanding under which DWR, CDFW, YWA and many other parties proposed the Vas includes specific terms for addressing circumstances under which the Vas are not adequately advancing conditions for native fish or have not been extended and the State Board has not adopted new Bay-Delta Plan terms. The DSR itself includes the VA proponents’ detailed proposed terms on these subjects in its Appendix G1. (DSR Appendix G1, PDF pp. 134-138.)	
309	24	[Att. 1:] The Draft Staff Report, And Its Supporting Final Draft Scientific Basis Report Supplement, Overstate The Need For Habitat Enhancement Measures On The Yuba River And Understate The Benefits Of Yuba Water Agency’s Proposed Voluntary Agreement.	Please see the responses to comments 309-25 through 309-29.
309	25	[Att. 1:] YWA’s consultant, HDR, has reviewed the portions of the DSR pertaining to the Vas and its supporting Final Draft Scientific Basis Report Supplement (“Final Draft SBRS”). Based on that review, and as discussed in HDR’s Attachments 1 and 2 [Attachments 2 and 3 of Attachment 1, respectively] submitted with these comments, HDR found that the DSR overstates the need for improvements in Yuba River conditions for fish for, among other reasons, the following: The DSR’s general statements about the effect of dams and reservoirs on riverine processes, which provide the asserted scientific basis for improvements needed in the tributaries, generally do not apply to the Yuba River because, by contrast to statements in the DSR and among other things: (1) YWA’s operation of New Bullards Bar Dam and Reservoir causes the	Yuba River conditions are described in Section 2.2.6.2, Yuba River. This section states that the major impacts to fisheries along the Yuba River are due to the loss of spawning habitat above dams. This section also describes the operation agreements and restoration actions that are meant to maintain flow, water temperature, and provide spawning habitat in the Yuba River watershed. On page 7.6.2-89 of the 2023 draft Staff Report, it is described how the South Yuba River is listed as impaired for temperature under Clean Water Act section 303(d) and how increased flows could provide some temperature related benefits. The 2023 draft Staff Report acknowledges that certain locations within the plan area may already have conditions that are protective of fish and wildlife in Section 5.3, Reason for the

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		lower Yuba River to have consistently “suitable water temperatures for salmonids throughout the year;” and (2) the active river valley for much of the lower Yuba River as a whole is downcutting, whereas for the three survey epochs of 1999-20008, 2008-2014 and 2014-2017, the bankfull channel was net depositional, while the overbank area was net erosional (HDR Attachment 1 [see Attachment 2 of Attachment 1], pp. 3-5).	Proposed Plan Amendments, although given the issues described in the prior paragraph, it does not appear that the Yuba River would be included in this category. However, the 2023 draft Staff Report goes on to state that although these locations may exist, without complete and coordinated watershed management across the Bay-Delta system, including those locations which may have favorable conditions, environmental conditions may be degraded into the future. Section 5.3 of the 2023 draft Staff Report also describes how additional instream flow protections are needed to provide additional Delta outflow. See Common Response 3.1, Fish Protection, for further discussion of the need for increased tributary flows to provide benefits through increased Delta outflow. Dams and reservoirs, including those on the Yuba River, have numerous impacts on riverine processes and fish populations as documented in Section 4.5.3.1, Dams and Reservoirs, of the Staff Report. One of the largest impacts on fish species is the barrier to fish passage, which restricts fish access to historical higher elevation and cooler habitat.
309	26	[Att. 1:] The Final Draft SBRS overstates the habitat necessary to support implementation of the Bay-Delta Plan’s Salmon Doubling Objective based, in part, on an invalid assumption that all juvenile salmon are present in a river simultaneously and for the same amount of time, which is inconsistent with documented biological variability (HDR Attachment 2, pp. 1-2) [see Attachment 3 of Attachment 1].	Please see the response to comment 309-2.
309	27	[Att. 1:] HDR also determined in their review that the DSR and the Final Draft SBRS [Scientific Basis Report Supplement] understate the benefits of YWA’s proposed VA for, among other reasons, the following: The DSR overstates potential adverse water temperature impacts associated with the Vas, particularly regarding application to the lower Yuba River. The DSR’s statement that the Vas could have potentially significant adverse water temperature impacts on aquatic species is not supported by quantitative data, modeling, or the impact analyses presented in the DSR (HDR Attachment 1, pp. 2-3) [see Attachment 2 of Attachment 1].	The 2023 draft Staff Report appropriately assessed impacts of the proposed VAs. The assessment generally relied on SacWAM modeling results for the proposed VAs as inputs for HEC-5Q temperature modeling. For tributaries outside the HEC-5Q model domain (including the Yuba River), a qualitative assessment of temperature impacts is provided based on SacWAM results and assumptions of effects of temperature. Please see Section 9.7.6.2, Aquatic Biological Resources, for more information. In addition, the 2025 partially recirculated draft Staff Report included new Yuba River temperature modeling, the results of which can be found in Section 13.7.6.2, Aquatic Biological Resources. Despite the potential reduction in impacts for both the VA and regulatory pathways from implementing

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			Mitigation Measures MM-AQUA-a,d: 1 and 2, the impact conclusion for temperature impacts on special status fish species remains potentially significant. Please see Common Response 7.1, General CEQA and Approach to the Analysis, regarding the scope of the CEQA analyses and impact conclusions.
309	28	[Att. 1:] It is unclear how the Final Draft SBRS applied thermal suitability criteria and habitat-discharge relationships to discount the rearing habitat to be provided under YWA's proposed VA (HDR Attachment 2, p. 3) [see Attachment 3 of Attachment 1].	A description of these methods was provided in Section 5.1.4, Application of Temperature Criteria for Spawning and Rearing Habitat, of Appendix G2, Final Draft Scientific Basis Report Supplement in Support of Proposed Voluntary Agreements for the Sacramento River, Delta, and Tributaries Update to the San Francisco Bay/Sacramento-San Joaquin Delta Water Quality Control Plan, of the 2023 draft Staff Report.
309	29	[Att. 1:] The Final Draft SBRS understates the frequency at which Meaningful Floodplain Events would occur by assuming that they must last at least 30 days in light of the SacWAM model's monthly time step, even though the Final Draft SBRS itself states that floodplain inundations of seven to 21 days are meaningful and YWA's Operations Model provides daily data sufficient to quantify such events (HDR Attachment 2, pp. 3-4) [see Attachment 3 of Attachment 1]. HDR's review of the DSR's and the Final Draft SBRS's analyses of the Vas demonstrates that greater biological benefit will result from the Vas than indicated in the DSR and Final Draft SBRS.	Please see Section 1.3.1.8, Hydrology and Operations Modeling, of Appendix G2, Final Draft Scientific Basis Report Supplement in Support of Proposed Voluntary Agreements for the Sacramento River, Delta, and Tributaries Update to the San Francisco Bay/Sacramento-San Joaquin Delta Water Quality Control Plan, of the 2023 draft Staff Report for a response to comments received on the January 2023 draft Scientific Basis Report Supplement suggesting that a monthly timestep was not sufficient to capture sub-monthly benefits of the VA assets. In addition, the VA parties did not release sub-monthly schedules for VA flow releases. The default VA flow schedules included in the draft VA Strategic Plan in Appendix G1, Voluntary Agreement Proposal, of the 2023 draft Staff Report have a monthly timestep. As described in Appendix G2 of the 2023 draft Staff Report, the MFE analysis used a conservative approach so suitable habitat would be guaranteed.
309	30	[Att. 1:] As Discussed In Others' Comments, Which Yuba Water Agency Incorporates, The Proposed Inflow And Cold Water Habitat Objectives And The Conceptual Program for Implementing Them Are So Fundamentally Flawed That They Cannot Proceed.	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project.
309	31	[Att. 1:] YWA believes, however, that it is important to highlight how NCWA's comments and the hydroelectric operators' joint comments identify several fundamental problems with the proposed Objectives, their potential implementation and the	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project. To the extent that

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		DSR's related analysis. These problems are so fundamental that each of them should preclude the State Board from pursuing further the proposed Objectives as an option for amending the Bay-Delta Plan. In short, these fundamental flaws, in addition to those explained in detail in these comments, are as follows:	this comment summarizes other comments, please see the substantive responses to those comments.
309	32	[ATT. 1:] It is impossible to understand what the proposed Inflow and Cold Water Habitat Objectives, and their implementation as proposed by the DSR, would mean in the real world, so the State Board cannot legally adopt those proposed Objectives. The proposed Objectives, and their implementation as proposed in the DSR, do not constitute an adequate project description under CEQA, cannot satisfy Porter-Cologne's basic "reasonable protection" requirement and would violate Article X, section 2 of the state constitution because: (1) they would involve the State Board and its staff exercising future, undefined discretion within a range of 20% of unimpaired runoff of the Sacramento River watershed—which would equal 5 to 10 million acre-feet a year; and (2) this lack of definition is significantly compounded by the many layers of undefined discretion that the DSR proposes the State Board, and especially its staff, would have in deciding what YWA, other reservoir operators and thousands of other diverters would need to do to comply with the proposed Objectives in real-world conditions.	The Plan amendments are broad but not unbounded. Provisions for adaptive implementation of the numeric inflow requirements are provided to optimize flows to benefit native fish and wildlife while also minimizing water supply impacts, and for the numeric inflow requirements to be implemented in a coordinated fashion with the cold water habitat and inflow-based Delta outflow requirements. The environmental analyses evaluate a complete range of impacts, including in the event that water users do not utilize adaptive implementation, as well as the potential impacts from implementation of adaptive implementation. A full range of flow scenarios with cold water storage targets are analyzed in Section 7.3, through 7.20, as well as physical habitat restoration and other ecosystem projects that may be pursued in Section 7.21. Please also see Chapter 13 and Common Response 1.3, Revised Proposed Plan Amendments, regarding the revised proposed Plan amendments. Section 7.1, Introduction, Project Description, and Approach to Environmental Analysis, of the 2023 draft Staff Report provides a project description, including a description of the project purpose and goals, and refers to Chapter 5, Proposed Changes to the Bay-Delta Plan for the Sacramento/Delta, for a detailed description and discussion of the proposed Plan amendments. See Common Response 7.1, General CEQA and Approach to the Analysis, regarding the adequacy of the project description. See Common Response 1.2, Water Quality Control Planning Process, regarding the State Water Board's authorities, including responsibilities related to California Constitution, Article X, section 2 and the Porter-Cologne Water Quality Act.
309	33	[Att. 1:] The DSR fails to analyze the impacts of the proposed Objectives, and their implementation as proposed in the DSR, in multi-year droughts. During multi-year droughts, which are a	The commenter is incorrect to suggest that the Staff Report fails to analyze impacts in multi-year droughts. SacWAM simulated water management of the Sacramento Valley and Delta using the

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		basic element of California's hydrology, the proposed Objectives' impacts on reservoir storage would be felt most acutely across many resource categories. In multi-year droughts, the proposed Objectives would adversely impact not only water supplies for human use, but, through increased water temperatures, also the fish and wildlife beneficial uses that the proposed Objectives are asserted to protect.	historical hydrology from October 1921 through September 2015 to represent the range of possible hydrologic conditions and the relative frequency of wet and dry years. Inputs were extended through water year 2021, and this period captures a wide range of conditions, including periods of severe drought. Water supply, including supplies from the Sacramento/Delta watershed, is evaluated extensively throughout the Staff Report. Chapter 6, Changes in Hydrology and Water Supply, is devoted entirely to describing the changes in hydrology and supply as a result of the proposed Plan amendments. Both the inflow requirements and carryover storage assumptions for cold water habitat are reflected in the model results for changes in supply. Chapter 6 also includes a discussion on the flexibility that water users have or could develop to continue to meet water supply needs with reductions of Sacramento/Delta surface water supplies, including other water management actions. The water supply impacts to municipal users are presented in Section 7.20, Utilities and Service Systems, and to agriculture in Section 7.4, Agriculture and Forest Resources, with additional qualitative analyses for multiple dry years. Potential temperature impacts from changes in hydrology are evaluated in Section 7.12.1, Surface Water, and Section 7.6.2, Aquatic Biological Resources. In addition, the draft Staff Report presented a modular drought alternative for consideration that included two variations that could help to address limited water supplies during drought. Please see Common Response 4.2, Drought and Climate Change, for responses to comments that raise issues with the analysis of multi-year droughts in the Staff Report.
309	34	[Att. 1:] The proposed Objectives' implementation, as proposed by the DSR, would exacerbate rolling blackouts. The DSR obliquely admits that the proposed Objectives' implementation "could cause an incremental exacerbation of the outages" like those that occurred during the 2020 rolling blackouts. (DSR, p. 7.8-29.) The DSR, however, fails to consider the perhaps even more severe electrical emergency in 2022. The State Board should not further consider proposals for Bay-Delta Plan amendments that could worsen such serious statewide problems.	Please see Common Response 7.8, Energy and Hydropower, for discussion of grid reliability and rolling blackouts.
309	35	[Att. 1:] The DSR's proposed "modular alternatives" lack any definition and the DSR's analysis of them lacks any quantitative	Modular alternatives 4 and 5 were described in Section 7.2, Description of Alternatives, and were analyzed in Section 7.24,

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		rigor. As a result, the DSR's analysis of those modular alternatives does not satisfy CEQA and the State Board cannot adopt them under Porter-Cologne.	Alternatives Analysis of the Staff Report. Modular alternative 6a was described and analyzed in Chapter 9, Proposed Voluntary Agreements. Please see Common Response 7.24, Alternatives Analysis, for more information on the description and analysis of alternatives.
309	36	[Att. 1:] Because of these and other fundamental problems that the proposed Objectives' implementation would cause, the State Board should not consider those proposed Objectives further.	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project.
309	37	[Att. 1:] The Draft Staff Report's SacWAM Modeling Violates Its Own Principles For The Proposed Inflow And Cold Water Habitat Objectives' Implementation, Reflects Fundamental Misunderstandings Of Yuba River Operations, Would Cause Very Significant Undisclosed Impacts If Implemented, Violates Water-Right Priorities, And Discriminates Against Yuba Water Agency.	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project. To the extent that this comment summarizes other comments, please see the substantive responses to those comments.
309	38	[Att. 1:] The DSR itself discloses very little about how the proposed Inflow and Cold Water Habitat Objectives' implementation would impact YWA's operations and Yuba County. The one important YWA-specific result that the DSR discloses suggests that those impacts would be enormous. Specifically, the DSR discloses that YWA's New Colgate powerhouse would be, by far, the most adversely impacted hydroelectric facility that the DSR analyses. (DSR, p. 7.8-26, Figure 7.8-14.)	Please see Common Response 7.8, Energy and Hydropower, regarding evaluation of local effects and Common Response 7.1, General CEQA and Approach to the Analysis, regarding scope of analysis. Please also see the responses to comments 309-74 (regarding agricultural water supply), 309-75 (regarding groundwater), and 309-90 (regarding flooding).
309	39	[Att. 1:] While the hydrological analysis in the DSR itself is, at best, general, its flaws are indicated by its incorrect characterization of YWA's New Bullards Reservoir as a "rim reservoir." (DSR, pp. 6-37 to 6-42.) New Bullards Bar is not a "rim reservoir" because, as the DSR itself recognizes and depicts, it is located on the North Yuba River, which is only one of three major tributaries to the river's mainstem. (DSR, pp. 2-53 to 2-54 ("New Bullards Bar Reservoir [is] on the North Fork"); 6-38, Figure 6.3-25.) Moreover, as the DSR also recognizes, other diverters export an annual average of roughly 500,000 acre-feet per year from the watershed. (DSR, p. 2-53.) New Bullards Bar simply is not a "rim reservoir" like those that control the flow of water from a watershed to a river's mainstem.	The terminology "rim reservoir" is defined in Chapter 6, Changes in Hydrology and Water Supply, Section 6.2, SacWAM Model Assumptions, as "large water supply reservoirs that 'rim' the valley floor and provide water supply, flood control, hydropower, and recreation on tributaries in the Sacramento River watershed and Delta eastside tributaries". While the New Bullards Bar Reservoir lies on only one tributary of the Yuba, it does fit this definition offered in Chapter 6 based on the purposes of the reservoir. In addition, the definition of a rim dam does not have regulatory significance except for the initial list of reservoirs that must submit long-term strategies and annual plans to meet the cold water habitat objective. Upstream water users would be required to participate in development of the strategies to the extent that their operations affect achievement of the narrative objective below the rim reservoirs. In addition, responsibility for

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			meeting flow requirements is not limited to areas below the rim reservoirs or the rim reservoirs themselves. Regardless of the label, the hydrologic characteristics described, such as the watershed transfers, are captured in the SacWAM that the State Water Board used in the analyses of the flow scenarios.
309	40	[Att. 1:] The review of the more detailed SacWAM modeling reflected in the DSR by YWA's hydrology consultant demonstrates why the DSR's mischaracterization of New Bullards Bar and the above-referenced disproportionate impact on New Colgate generation are just the tip of the iceberg of the proposed Objectives' discriminatory impacts on YWA and Yuba County and the unsupportable reasons for them. As that consultant's enclosed Technical Memorandum #1 and Technical Memorandum #2 explain [see Attachments 4 and 5 of Attachment 1, respectively]: The way that the SacWAM model sets compliance points under the proposed Objectives requires very little contribution toward compliance with those proposed Objectives by the other diverters that export up to 34% of the Yuba River watershed's total unimpaired flow. As a result, under that modeling, YWA would be required to bypass more than 70% of unimpaired flow at its facilities. Contrary to representations in the text of the DSR's appendix concerning the SacWAM modeling, that modeling hypothesizes that the State Board would require YWA to attempt to meet a carryover storage requirement of 750,000 acre-feet at its New Bullards Bar Reservoir, based on little more than a qualitative review of New Bullards Bar storage and lower Yuba River temperatures that are impacted by other factors that the appendix does not even evaluate. A 750,000 acre-foot carryover storage requirement at New Bullards Bar would consume nearly all of the reservoir's usable capacity and thus essentially commandeer the reservoir from YWA for the State Board's effective control under the DSR's proposed reservations of discretion to State Board staff.	Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for a response to comments about the unimpaired flow scenarios on the Yuba River in SacWAM.

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309	41	[Att. 1:] The DSR acknowledges that hydroelectric generation often is incidental to reservoir releases for water supplies. (DSR, p. 7.8-8.) The above-referenced discriminatory impact of the proposed Objectives' implementation on New Colgate generation therefore suggests that those proposed Objectives would have significant, but undisclosed, impacts on YWA's surface-water deliveries. As Technical Memorandum #2 [see Attachment 5 to Attachment 1] explains, the model results that it is possible for an expert to extract from the SacWAM modeling reflected in the DSR show that such impacts would occur. The DSR itself, however, does not disclose these impacts. The DSR's water-supply analysis lumps YWA's service area and water supplies together with nearby areas with distinct water supplies, such as areas served by DWR under its Feather River settlement agreements.	Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for more information regarding the SacWAM scope, scale and application and regarding the Yuba River and operations which responds to comments about the scale of analysis YWA operations in the UF scenarios.
309	42	[Att. 1:] Similarly, and contrary to what the DSR suggests, the "maximum replacement" groundwater pumping scenario analyzed by the DSR is not close to a worst case scenario.	The groundwater impact analyses presented in 7.12.2, Groundwater, and 9.7.12.2, Groundwater, are reasonable representations of potential maximum impacts on the groundwater basin from replacement pumping, which were concluded to be potentially significant, even with mitigation measures. However, this is not a directive that farmers and ranchers should or would replace Sacramento/Delta reductions with groundwater pumping. Water users can and should diversify their water supply portfolios to the extent possible, in an environmentally responsible manner and in accordance with the law. Groundwater adjudications, SGMA, and other existing requirements may limit how much groundwater pumping can increase in response to the proposed Plan amendments in some locations. The groundwater bookends provide a conservative estimate based on available data and modeling assumptions. The analysis cannot assume simultaneous extremes for both groundwater and agricultural impacts. For additional detail on groundwater assumptions and limitations, see Common Response 7.12.2, Groundwater and Sustainable Groundwater Management Act, and Appendix A3, Agricultural Economic Analysis: SWAP Methodology and Modeling Results. For more information on modeling and

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			agricultural impacts, please see Common Response 7.4, Agricultural Resources.
309	43	[ATT 1:] As a result of these very serious deficiencies, the DSR violates CEQA by failing to disclose and analyze the unique impacts that the proposed Objectives' implementation would have in Yuba County. Those same deficiencies make it impossible for the DSR to support the proposed Objectives' adoption because they indicate that there is no substantial evidence to indicate that the State Board has considered all of the factors that Porter-Cologne requires it to consider in adopting water quality objectives. (See Water Code §§ 13000, 13001, 13140, 13241.) [footnote 4: Water Code section 13000 states, in relevant part, "The Legislature further finds and declares that activities and factors which may affect the quality of the waters of the state shall be regulated to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible." (Emphasis added.) Water Code section 13001 states, in relevant part, "The state board and regional boards in exercising any power granted in this division shall conform to and implement the policies of this chapter." Water Code section 13140 states, "The state board shall formulate and adopt state policy for water quality control. Such policy shall be adopted in accordance with the provisions of this article and shall be in conformity with the policies set forth in Chapter 1 (commencing with Section 13000)."]	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project. To the extent that this comment summarizes other comments, please see the substantive responses to those comments.
309	44	[Att. 1:] Contrary To The Draft Staff Report's Stated Implementation Guidelines, Its SacWAM Modeling For The Yuba River Watershed Arbitrarily Requires Little Of Diverters That Export Much Of The Watershed's Unimpaired Flow, While Imposing Disproportionate Burdens On YWA The DSR states that the proposed Inflow Objective would be implemented as follows: Under the proposed program of implementation, all water users on these tributaries, except those with a de minimis effect on flows (e.g., 10 AF/yr or less), would have responsibility for contributing to achievement of the objective.	Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for a response to comments about the unimpaired flow scenarios on the Yuba River in SacWAM.

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		(DSR, p. 5-17.) The DSR states that the proposed Cold Water Habitat would be implemented as follows: The narrative cold water habitat objective is proposed to apply throughout the watershed, including upstream tributaries and distributaries, on all the Sacramento/Delta tributaries that support or contribute to the protection of native cold water fish species. Under the proposed program of implementation, all water users on these tributaries, except those with a de minimis effect on temperature management, would bear responsibility for contributing to achievement of the objective. (DSR, p. 5-23.) As explained in the enclosed Technical Memorandum #1 [see Attachment 4 to Attachment 1], however, the DSR's SacWAM modeling of the proposed Objectives violates the above principles in the Yuba River watershed. Specifically, the compliance locations the DSR uses in the watershed allow upstream diverters that export large percentages of the watershed's unimpaired flow to largely continue to do so, while often resulting in YWA needing to comply with streamflow requirements that significantly exceed 55% of unimpaired flows.	
309	45	[Att. 1:] As Technical Memorandum #1 [see Attachment 4 to Attachment 1] explains, a review of the results that an expert can extract from the State Board's SacWAM modeling results for the proposed Objectives show: The highest compliance points in the Middle and South Yuba Rivers' subwatersheds are, respectively, the Middle Yuba's confluence with the mainstem and the South Yuba's inflow into Englebright Reservoir, both of which are located many river miles downstream of the diversions from those subwatersheds of Nevada Irrigation District ("NID") for its Yuba-Bear project, and PG&E for its Drum-Spaulding project (see also DSR Appendix A1, pp. A1-7 to A1-9, Table A1-2); In the November-June period, this manner of implementing the proposed Objectives allows: (1) NID to release only a monthly	Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for a response to comments about the unimpaired flow scenarios on the Yuba River in SacWAM.

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		average of between 2% and 15% of unimpaired flow at its Middle Yuba River facilities; and (2) NID and PG&E to release only a monthly average of 16% to 46% of unimpaired flow at their affiliated South Yuba River facilities; and As a result, the SacWAM modeling effectively allows NID and PG&E to claim flows into the Middle Yuba and South Yuba Rivers downstream of their facilities to minimize their contributions toward the proposed Objectives. In contrast, as Technical Memorandum #1 [see Attachment 4 of Attachment 1] also explains: Inflows to all of YWA's facilities are impaired by upstream diversions by not only NID's and PG&E's diversions, but also South Feather Water and Power Authority's diversions from Slate Creek, a tributary to the North Yuba River, upstream of YWA's New Bullards Bar Reservoir. The DSR's SacWAM model uses compliance points for the proposed Objectives close to YWA's facilities that effectively require YWA to bypass at least 55% of unimpaired flow 40% to 86% of years in the November-June period; and When YWA must operate to meet a 55% of unimpaired flow requirement, YWA is actually required to bypass a monthly average of between 71% to 73% of unimpaired flow in the November-June period.	
309	46	[Att. 1:] In short, the DSR's SacWAM modeling of the proposed Inflow and Cold Water Habitat Objectives' implementation in the Yuba River watershed violates the DSR's stated implementation principles. That modeling instead allows diverters other than YWA to avoid flow contributions at any level commensurate with those proposed Objectives' text. This is extraordinary because, unlike YWA, those other diverters export hundreds of thousands of acre-feet of water from the watershed's unimpaired flow annually so that those flows do not reach the Yuba River's mouth. As the DSR states: [South Feather Water and Power Agency's] Slate Creek Diversion	Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for a response to comments about the unimpaired flow scenarios on the Yuba River in SacWAM.

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		... diverts on average about 80 TAF/yr from North Fork Yuba River into the Feather River watershed. [NID's and PG&E's diversions through the] South Yuba Canal and the Drum Canal divert on average about 430 TAF/yr from the South Fork Yuba River at Lake Spaulding to the Deer Creek and Bear River watersheds. (DSR, p. 2-53.) As YWA has documented in technical memoranda submitted to the State Board in relation to the YRDP's relicensing, based on 1990-2016 gage data, these other projects' exports from the Yuba River watershed reach 34% of the watershed's total unimpaired flows in drier years. [footnote 5: The information is contained on pages 2 to 3, and Table 2.1, in Attachment B1 , Technical Memorandum, Modeling Approach submitted by YWA to the State Board on August 14, 2020 as an attachment to YWA's petition for reconsideration of the July 17, 2020 water quality certification that the State Board's Executive Officer issued to YWA. (The Fresno County Superior Court has issued a decision invalidating that certification.) Copies of the cover pages and cited pages of that Attachment B1 are submitted with these comments as Exhibit A [see Attachment 2].] The SacWAM modeling, however, appears to impose a requirement to meet a 55% of unimpaired flow requirement at the Yuba River's mouth only on YWA. (See SacWAM Documentation (Sept. 2023), pp. 7-45 to 7-48 (description of assumptions of NID and PG&E operations, with no requirement to meet Yuba River outflow requirements); 7-64 (section 7.9.23.12 stating requirement that YWA meet minimum flows at Yuba River's mouth); 8-66 to 8-67 (description of assumptions of SFWPA operations, with no requirement to contribute to Yuba River outflow requirements). Technical Memorandum #1's [see Attachment 4 of Attachment 1] description of how the SacWAM modeling requires YWA to bypass up to 73% of inflows to its facilities thus is not surprising. The DSR's SacWAM modeling effectively requires YWA to meet a 55% of unimpaired flow requirement at the Yuba River's mouth even though others export up to one-third of the watershed's total unimpaired flow.	

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309	47	[Att. 1:] Nothing associated with the DSR states any rationale for setting the SacWAM model's compliance points in the Yuba River watershed so that they produce such results. For example, nothing in the DSR states any rationale for setting compliance points for YWA immediately above and below its facilities, while setting compliance points for other diverters in the watershed many river miles downstream of their facilities—and thus allowing them to take sole advantage of 100% of intervening unimpaired inflows to effectively minimize their contributions toward the proposed Objectives' implementation.	Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for a response to comments about the unimpaired flow scenarios on the Yuba River in SacWAM.
309	48	[Att. 1:] The SacWAM's arbitrary establishment of compliance points in the Yuba River watershed produces perverse results. As Technical Memorandum #1 [see Attachment 4 of Attachment 1] explains: The SacWAM's compliance point on the Middle Yuba River compels YWA to forgo using its decades-old facilities to divert Middle Yuba flows into New Bullards Bar Reservoir. This modeled operation contributes nothing to flows at the Yuba River's mouth. The SacWAM modeling instead requires YWA to bypass an annual average of 128,877 acre-feet that now is used to build New Bullards Bar Reservoir's cold water pool and results in an annual average reduction of hydroelectric generation of 154,000 megawatts-hours.	Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for a response to comments about the unimpaired flow scenarios on the Yuba River in SacWAM.
309	49	[Att. 1:] The value of this reduced generation is not solely captured by its raw amount. As discussed elsewhere in these comments, YWA's New Colgate powerhouse is one of the most important peaking facilities in northern California. As the DSR's Appendix A5 recognizes, in 2020, YWA maximized generation to assist the state in addressing an electrical emergency that involved rolling blackouts. (DSR Appendix A5, p. A5-45.) During the September 2022 electrical system emergency, the California Independent System Operator sent YWA a September 1, 2022 e-mail authorizing and requesting that YWA increase generation "to mitigate the potential power outages due to the heat wave this long weekend and into next week," covering the period "September 2 – 7, 2022." (Sept. 1, 2022 e-mail from Debi Le Vine, CAISO to Karl Parker, YWA.) [Footnote 6: A copy of this e-mail is	Please see Common Response 7.8, Energy and Hydropower, for discussion of grid reliability.

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		submitted with these comments as Exhibit B [see Attachment 3].]	
309	50	[Att. 1:] More generally, the DSR states no rationale for implementing the proposed Inflow and Cold Water Habitat Objectives in this discriminatory way. In fact, the DSR's discussion of how those proposed Objectives would affect NID's and PG&E's operations emphasizes the opposite, namely that they sometimes would be required to reduce their exports. (DSR, pp. 6-32, 6-47.) This discussion does not mention that the DSR's SacWAM modeling suggests that the State Board would seek to compel YWA to forgo much more than 55% of unimpaired flow at its facilities while allowing those other diverters to forgo much less. Water-right priorities cannot support such a result. In fact, as discussed below, the SacWAM modeling effectively implements the opposite of water-right priorities in the Yuba River watershed by allowing upstream projects to effectively claim water that is not available at their points of diversion.	Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for a response to comments about the unimpaired flow scenarios on the Yuba River in SacWAM.
309	51	[ATT. 1:] The unexplained mismatch between the DSR's implementation principles that state that "all water users would bear responsibility" under the proposed Objectives (DSR, pp. 5-17, 5-23), and the heavily disproportionate compliance burden put on YWA under the SacWAM modeling violates CEQA and cannot support the proposed Objectives' adoption under Porter-Cologne.	The proposed Plan amendments, specifically the inflow and outflow provisions, are proposed to be implemented consistent with water right priorities subject to certain exceptions for health and safety. The Sacramento Water Allocation Model (SacWAM) does not create a mandate. It is a model that helps estimate the potential changes to hydrology and water supply that could occur as a result of the Plan amendments. Model results are presented for changes in hydrology under various scenarios, including changes in streamflows and reservoir levels, and changes in Sacramento/Delta water supply under various scenarios. SacWAM results are intended to be used in a comparative manner, which allows for assessing the changes in system operations and resulting incremental effects between scenarios. SacWAM has a detailed representation of hydrology and operations of the Sacramento Bay-Delta watershed. General relative groupings of priorities have been included in the model, but it was necessary to combine many points of diversion, which makes identifying one priority for each diversion difficult. Appendix A1, Sacramento Water Allocation Model Methods and Results, adequately discusses Yuba River operations. Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, regarding SacWAM assumptions and the Yuba River.

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309	52	[ATT. 1:] All of this violates CEQA in multiple ways. Preliminarily, the facts that the DSR itself does not disclose the logic of how the Yuba watershed was modeled with the proposed Objectives, or the results of the choices embedded in that modeling, and that it is necessary to employ a technical expert to extract the relevant assumptions and results violates CEQA in and of itself. (Vineyard Area Citizens For Responsible Growth v. City of Rancho Cordova (2007) 40 Cal.4th 412, 442 (“Vineyard”)(“The data in an EIR must not only be sufficient in quantity, it must be presented in a manner calculated to adequately inform the public and decision makers, who may not be previously familiar with the details of the project”).) Moreover, CEQA requires that a lead agency support a model used to analyze a project’s impacts with “substantial evidence and reasonable explanation.” (Center for Biological Diversity v. Dept. of Fish & Wildlife (2015) 62 Cal.4th 204, 228.) The DSR provides neither to support its SacWAM modeling’s departure from the DSR’s stated implementation principles in the Yuba River watershed.	Please see the response to comment 309-51. SacWAM and other models used to inform the environmental analyses are explained and documented extensively throughout the Staff Report. See Chapter 6, Changes in Hydrology and Water Supply, the sub-appendices of Appendix A, Modeling for the Unimpaired Flow Scenarios, and Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, regarding the SacWAM scope, scale, and application.
309	53	[ATT. 1:] Under Porter-Cologne, a water quality objective’s adoption must be supported by a “a rational connection between those factors, the choice made, and the purposes of the enabling statute.” (United States v. State Water Resources Control Bd. (1986) 182 Cal.App.3d 82, 113.) As to the Yuba watershed at least, the DSR cannot satisfy this standard because the DSR’s implementation principles are contradicted by the SacWAM modeling that depicts the proposed Objectives’ implementation. The DSR’s description of how the proposed Inflow and Cold Water Habitat Objectives would be implemented thus is not supported by any rational basis.	Please see the response to comment 309-51. Also see Common Response 1.2, Water Quality Control Planning Process, regarding State Water Board authorities and compliance with the Porter-Cologne Water Quality Control Act and Common Response 1.3, Revised Proposed Plan Amendments, regarding the inflow and cold water habitat objectives and their implementation.
309	54	[Att. 1:] The Draft Staff Report Fundamentally Misrepresents The Operational Rules Applied to YWA By The SacWAM Modeling, Which Itself Is Not Supported By Any Evidence And Ignores Real-World Conditions And Regulatory Requirements.	SacWAM operational rules are described in the SacWAM Documentation (available on the State Water Board’s Bay-Delta webpage). Assumptions for how the Yuba Water Agency system may be operated to meet new cold water habitat and Delta inflow objectives are described in Appendix A1, Sacramento Water Allocation Model Methods and Results.
309	55	[Att. 1:] The DSR’s description of the proposed Cold Water Habitat Objective’s implementation states that reservoir owners like YWA would need to submit, for the State Board staff’s	The necessary detail to evaluate the proposed Plan amendments was included in the 2023 draft Staff Report, including details on the required components of long-term temperature management

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		approval and potential discretionary modification, long-term temperature management strategies and “annual operations plans [that] would include provisions for reservoir carryover storage levels . . .” (DSR, pp. 5-23 to 5-24.) The DSR itself does not provide further detail on these points.	strategies and annual operations plans. For more detail on the specific requirements of the long-term temperature management strategies and annual operations plans, please see Section 5.4.3.4, Implementation, of the 2023 draft Staff Report and Common Response 1.3, Revised Proposed Plan Amendments.
309	56	[Att. 1:] The DSR’s Appendix A1, which describes the SacWAM modeling, does provide more detail about how the State Board might seek to require YWA to operate New Bullards Bar Reservoir. Specifically, Appendix A1 states that, in the modeling, YWA’s operation of New Bullards Bar is subject to an end-of-September “carryover storage target,” although it is unclear what that target actually is from the DSR’s text. (DSR Appendix A1, pp. A1-10 to A1-11, Table A1-3; A-16, Table A1-9.) The carryover storage requirement applied by the SacWAM modeling, however, is so high that it effectively would commandeer the reservoir for the State Board staff’s discretionary management. Nothing in the DSR or its appendices can support any such requirement because it is not supported by any evidence, would be based on a demonstrably flawed data “evaluation” and ignores real-world regulatory requirements. Despite DSR Appendix A1’s Confusing Text, The SacWAM Modeling Applies A 750,000 Acre-Foot Carryover Storage Requirement At New Bullards Bar, Which Would Render All of YWA’s Operations Incidental To The State Board’s Discretion, Even Though The DSR Ignores Real-World Data That Contradicts Its Discussion. The DSR’s text is at best confusing in describing what carryover storage requirement might apply to New Bullards Bar under the proposed Inflow and Cold Water Habitat Objectives. Table A1-3 in the DSR’s Appendix A1 indicates that the SacWAM modeling assumes that the carryover storage target would be in a range of 400,000 to 550,000 acre-feet, but its Table A1-9 states that the target would be 440,000 to 800,000 acre-feet, with the target for a 55% of unimpaired flow requirement being 600,000 acre-feet. (DSR Appendix A1, pp. A1-10 to A1-11, A1-16.) The latter table also is preceded by the statement that, “the buffer pool for New Bullards Bar was increased by 100 TAF [thousand acre-feet],	The carryover storage in New Bullards Bar was not set to 750 TAF in SacWAM. The model attempts to meet a carryover of between 400 and 600 TAF (previously 550 TAF in the 2023 draft Staff Report) as frequently as occurs in baseline, by using a “reservoir buffer pool” that prioritizes storage over lower priority demands. The September buffer pool is set to 750 TAF in the 2023 draft Staff Report scenarios. The buffer pool assumptions for New Bullards Bar Reservoir were revised for the SacWAM version 2025.08.28 simulation of the 55w/WSAs scenario and baseline where it is set to 650 TAF. Specifically, based on updated temperature data and comments received, the buffer pool in New Bullards Bar Reservoir was lowered to allow the reservoir to be drawn down further throughout the summer. Setting a reservoir buffer pool of 750 TAF in SacWAM allows SacWAM to attempt to increase storage in wetter years when it is possible to meet all demands in order to improve water supply deliveries and increase carryover storage in following years, thus reducing the frequency of going below the actual carryover target range between 400 to 600 TAF. Setting the buffer pool to lower than 750 TAF in the 55 scenario would result in increased frequency of going below the carryover target. It was only reduced to 650 TAF in the baseline and 55 w/WSAs scenarios. Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for more discussion on the relationship between carryover storage targets and SacWAM reservoir buffer pools. Appendix A1, Sacramento Water Allocation Model Methods and Results, includes carryover targets assumed for the flow scenarios in SacWAM. Appendix A1 also refers readers to Appendix A1c, Preliminary Assessment of Effect of Reser for the analyses used to develop the carryover targets listed in Appendix A1.

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		which reduces the discretionary hydropower release in the scenarios to help maintain cold water pool.” (DSR Appendix A1, p. A1-16.) The problem with all of these confusing and seemingly contradictory statements is that they appear to bear no relationship to what the SacWAM model actually does, at least for what the DSR calls the “default provision” involving a mandated bypass of 55% of unimpaired flow. (DSR, p. 5-18.) The actual SacWAM model results show that the model applies a carryover storage requirement of 750,000 acre-feet to New Bullards Bar, not the lower level described in Appendix A1’s text. Because the issue is so critical, the relevant SacWAM modeling result is reproduced here [ATT 1: Exhibit 3]: As this figure [ATT 1: Exhibit 3] clearly shows, the SacWAM model increases the required end-of-September carryover storage requirement from an assumed baseline of 650,000 acre-feet by 100,000 acre-feet to 750,000 acre-feet. Appendix A1’s Table A1-279 confirms this modeled operation of New Bullards Bar by showing that end-of-September storage increases from a baseline of 650,000 acre-feet to 750,000 acre-feet where possible. (DSR Appendix A1, p. A1-286.)	Lastly, based on comments received, some of the carryover targets have been revised for the revised proposed Plan amendments including the carryover target for New Bullards Bar Reservoir. Please see Chapter 13, Revised Proposed Plan Amendments, Appendix H1, Sacramento Water Allocation Model Methods and Results for the Revised Proposed Plan Amendments, and Appendix H1a1, Assessment of Effect of Reservoir Storage on Reservoir Release Temperatures, for a description of the revised proposed Plan amendments, changes to SacWAM, and the assessment of effect of reservoir storage on reservoir release temperatures.
309	57	[Att. 1:] [Attachment 1: Exhibit 3: Figure A1-134, New Bullards Bar Reservoir End-of-April and End-of-September Storage Percent Exceedance Plot, from the 2023 Draft Staff Report]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	58	[Att. 1:] Just how extreme this modeled operation of New Bullards Bar is can be best understood by recognizing that, under the U.S. Army Corps of Engineers’ regulations, YWA must reserve, for flood-control operations, 170,000 acre-feet above a lower pool of 791,000 acre-feet of storage. (33 C.F.R. § 208.11, subd. (e).) [footnote 7: 7 As the federal regulation states, this pool is the portion of the reservoir located between the elevations 1918.3 and 1956 feet mean sea level (“msl”). (33 C.F.R. § 208.11, subd. (e).)] In other words, by hypothesizing that, under the proposed Objectives, the State Board would require YWA to seek to maintain end-of-September carryover storage at 750,000 acre-feet, the SacWAM modeling essentially proposes that all but 41,000 acre-feet of New Bullards Bar’s usable storage	Table A1-3 lists the carryover targets for each reservoir including New Bullards Bar Reservoir, which has a carryover storage target range between 400 and 550 TAF, not 750 TAF as this commenter asserts. This target range was developed using historical data presented in Appendix A1c, Preliminary Assessment of Effect of Reservoir Storage on Reservoir Release Temperature. Based on comments received, some of the carryover targets have been revised for the Proposed Plan Amendments, including the carryover target for New Bullards Bar Reservoir. Please see Chapter 13, Revised Proposed Plan Amendments, Appendix H1, Sacramento Water Allocation Model Methods and Results for the

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		capacity would be operated primarily to support downstream fish. Caught between the U.S. Army Corps of Engineers' requirement to maintain storage space above 791,000 acre-feet for flood control, and a State Board mandate consistent with the SacWAM modeling's 750,000-acre-foot carryover storage requirement, YWA would essentially lose control of its own reservoir.	Revised Proposed Plan Amendments, and Appendix H1a1, Assessment of Effect of Reservoir Storage on Reservoir Release Temperatures, for a description of the revised proposed Plan amendments, changes to SacWAM, and the assessment of effect of reservoir storage on reservoir release temperatures. Please see the response to comment 309-56 regarding this commenter's misinterpretation that the carryover target was set to 750 TAF in New Bullards Bar.
309	59	[Att. 1:] Nothing in the text of the DSR or its appendix that purports to explain the SacWAM modeling actually discloses the burden that the SacWAM modeling hypothesizes that the State Board would impose on YWA. In and of itself, this violates CEQA. (Vineyard, supra, 40 Cal.4th, at p. 442.) In fact, the DSR's Appendix A1 misrepresents that New Bullards Bar's potential carryover storage requirement would be as low as 400,000 acre-feet. (DSR Appendix A1, pp. A1-11, Table A1-3; A1-16, Table A1-8.) The DSR thus fundamentally misrepresents how the potential implementation of the proposed Inflow and Cold Water Habitat Objectives would impact YWA's operations and the communities that rely on those operations.	Please see Common Response 7.1, General CEQA and Approach to the Analysis on the level and scope of the analysis. See response to comment 309-56 for an explanation of the carryover storage target for New Bullards Bar. For more information, see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, regarding carryover storage targets and SacWAM reservoir buffer pools.
309	60	[Att. 1:] This critical problem with the DSR is compounded by its failure to provide any evidence to support imposing any binding carryover storage requirement on New Bullards Bar. The DSR admits that the State Board conducted no quantitative temperature modeling to depict the proposed Objectives' effects on Sacramento Valley rivers besides the Sacramento River itself, the Feather River and the American River. (DSR, p. 7.6.2-88.) The DSR thus admits that its hypothesized imposition of New Bullards Bar carryover storage requirements is not based on any modeling. The DSR's only support for any New Bullards Bar carryover storage requirement therefore appears to be the qualitative "evaluation" in section A1c.5 of the DSR's Appendix A1c. In that "evaluation," Appendix A1c discusses a possible correlation between levels of New Bullards Bar storage and water temperatures in the lower Yuba River, as measured at the Smartsville gage. (DSR Appendix A1c, pp. A1c-14 to A1c-18.) That "evaluation," however, fails to contain any reliable analysis	Please see response to comment 309-56 for a discussion related to the New Bullards Bar Reservoir carryover storage targets and approach used in SacWAM to model implementation of the carryover target.

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		of any possible correlation and just depicts figures that, for example, plot both end-of-month New Bullards Bar storage and coincident temperatures at the downstream Smartsville gage. (See DSR Appendix A1c, p. A1c-18, Figure A1c-12.) The “evaluation” suggests that, because two out of many data points on those plots exceed a 56°F criterion at Smartsville, New Bullards Bar storage should not ever drop below 400,000 acre-feet. (DSR Appendix A1c, pp. A1c-17 to A1c-18, Figure A1c-12.) Nothing in the “evaluation,” however, even claims to support any particular end-of-September storage requirement at New Bullards Bar, much less one set at the 750,000 acre-feet level that essentially commandeers the reservoir from YWA.	
309	61	[Att. 1:] As discussed in more detail in the enclosed Technical Memorandum #2 [see Attachment 5 of Attachment 1] from YWA’s hydrology consultant, the DSR’s “evaluation” contains multiple demonstrable and fatal flaws. First, that “evaluation” ignores multiple factors other than New Bullards Bar storage that impact water temperatures at the Smartsville gage. Second, that “evaluation” ignores the fact that New Bullards Bar continues to release cold water as long as it releases any water at all, with the data points identified in the “evaluation” being more associated with reduced YWA agricultural deliveries than lower New Bullards Bar storage.	Please see Chapter 13, Revised Proposed Plan Amendments, Appendix H1a, Sacramento Water Allocation Model Methods, and Appendix H1a1, Assessment of Effect of Reservoir Storage on Reservoir Release Temperatures, for a description of the revised proposed Plan amendments, changes to SacWAM, and the updated assessment of the effect of reservoir storage on reservoir release temperatures. Please see Common Response 7.6.2, Aquatic Biological Resources and Cold Water Habitat, for a discussion on implementation of the cold water habitat objective and how the revised proposed Plan amendments could be implemented.
309	62	[Att.1:] Preliminarily, the DSR’s Appendix A1c actually admits that Middle and South Yuba River flows affect water temperatures at the Smartsville gage, but nonetheless proposes to impose carryover storage requirements solely on YWA without any analysis of the extent to which Middle and South Yuba River temperatures affect temperatures at that gage. (DSR Appendix A1c, p. A1c-15.) [footnote 9: Appendix A1c states, “Water temperature is measured at Smartsville (CDEC station YRS), approximately 1 mile downstream of Englebright Dam. Smartsville temperatures are likely influenced by the Middle and South Yuba River flows as well as the fraction of water from New Bullards Bar Reservoir.” (DSR Appendix A1c, p. A1c-15.)]	While smaller reservoirs on tributaries above Englebright Lake may add to the longitudinal increase in temperature to Smartsville, the Middle and South Yuba effects on Yuba River temperature are already captured in the temperature data along the mainstem Yuba River. Please see Appendix H1a1, Assessment of Effect of Reservoir Storage on Reservoir Release Temperatures, for updated discussion of the New Bullards Bar Reservoir carryover and temperature on the Yuba River. Please also see Common Response 7.6.2, Aquatic Biological Resources and Cold Water Habitat, for a discussion on upper watershed reservoirs and how the revised proposed Plan amendments could be implemented. The cold water habitat objective applies to all Sacramento/Delta tributaries subject to the inflow objective discussed above. To

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			the extent that other water right holders also affect temperature management, they may also be subject to undertaking actions as part of the implementation process for the cold water habitat requirements after opportunity for public review and comment, including as a result of an annual or periodic review described below. The revised proposed Plan amendments provide that the Executive Director may require upstream and downstream water right holders to participate in development and implementation of the long-term temperature management strategies and annual operations plans, to the extent that their operations affect the achievement of the cold water habitat objective. See Common Response 1.3, Revised Proposed Plan Amendments, for more information on the regulatory pathway implementation of the cold water habitat objective.
309	63	[Att. 1:] As discussed elsewhere in these comments (see Comment 4 on water temperatures and fish), the DSR does not consider quantitative temperature modeling, and associated biological analysis of a 55% of unimpaired flow requirement, that YWA prepared at the State Board's request, and submitted to FERC, in 2021 and 2022.	An analysis for the Yuba River has been added to Chapter 13, Revised Proposed Plan Amendments. A temperature model was developed for the Yuba River. Please refer to Appendix H1b, Water Temperature Modeling and Fish Assessment for the Sacramento, Feather, American, and Yuba Rivers, for more information about the Yuba temperature model and results.
309	64	[Att. 1:] Moreover, as Technical Memorandum #2 [see Attachment 5 of Attachment 1] explains and contrary to the DSR's entire theory for imposing a carryover storage requirement on New Bullards Bar, the objective data show that there is no relationship between the level of New Bullards Bar storage and the temperature of water it releases. As Technical Memorandum #2 explains, because of New Bullards Bar's particular depth and profile, it continues to release very cold water until there is essentially no water left to release.	Please see responses to comments 309-61 and 309-62 related to development of the carryover storage targets.
309	65	[Att. 1:] As Technical Memorandum #2 [see Attachment 5 of Attachment 1] also explains, the two data points of coincident New Bullards Bar storage and Smartsville temperatures on which DSR Appendix A1c's "evaluation" relies are explained by the fact that, in the relevant drought years, YWA needed to reduce its agricultural water supplies in order to meet its current carryover storage target, which YWA implements to ensure it can meet the existing streamflow requirements in the following year. In other words, while the DSR Appendix A1 states that YWA's	Based on comments and additional information received, the carryover targets were updated as described in Appendix H1a1, Assessment of Effect of Reservoir Storage on Reservoir Release Temperatures, of the 2025 partially recirculated draft Staff Report. The corresponding assumptions to meet the updated carryover storage targets for New Bullards Bar were also updated as described in Appendix H1a, Sacramento Water Allocation Model Methods, of the 2025 partially recirculated draft Staff Report.

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		water-supply deliveries should be reduced to maintain cool water in the lower Yuba River (DSR Appendix A1, p. A1-16), the real-world data explained in Technical Memorandum #2 show exactly the opposite.	
309	66	[Att. 1:] In essence, the “evaluation” contained in the DSR’s Appendix A1c that seeks to justify some carryover storage requirement for New Bullards Bar ignores all of other factors that influence water temperatures at that gage. The DSR thus presents no analysis to support imposing an end-of-September carryover storage requirement on New Bullards Bar, much less one set at 750,000 acre-feet, which effectively would commandeer the reservoir for the State Board’s management.	Please see responses to comments 309-61 and 309-62 related to development of the carryover storage targets. Please also see response to comment 309-56 for a discussion related to the use of a 750 TAF buffer pool in SacWAM.
309	67	[Att. 1:] The SacWAM Modeling Ignores Real-World Flow Fluctuation Criteria That Would Multiply The Impacts Of The Inflow And Cold Water Habitat Objectives’ Implementation Rules in addition to minimum streamflow requirements imposed by the State Board govern YWA’s ability to release water from its facilities. For example, in 2005 and at YWA’s request, the Federal Energy Regulatory Commission (“FERC”) amended the YRDP’s Federal Power Act license to include a full-flow bypass at YWA’s Narrows 2 powerhouse to protect downstream fish, as well as associated “more stringent ramping and flow fluctuation criteria for flows downstream” of Narrows 2. (FERC, Order Modifying and Approving Amendment of License, 113 FERC ¶62,137, 64,397-64,398.) [footnote 11: A copy of this FERC order is submitted with these comments as Exhibit D [see Attachment 5].] As the enclosed Technical Memorandum #2 [see Attachment 5 of Attachment 1] explains, those criteria would require YWA to maintain even higher flow releases than the proposed Objectives alone would because they would prevent YWA from lowering releases according to variations in unimpaired flow that the proposed Objectives otherwise might allow. Those real-world flow fluctuation criteria therefore would exacerbate the impacts of the proposed Objectives alone, resulting in, according to Technical Memorandum #2, “much greater reductions in storage, and much greater shortages in YWA’s irrigation deliveries” The DSR, and the SacWAM modeling reflected in it, do not even attempt to model this multiplier effect of the proposed Objectives’ implementation, much less disclose the resulting	Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for a response to comments about carryover storage targets and SacWAM reservoir buffer pools, and comments about Yuba River model representation and operations, including regarding flow fluctuation.

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		environmental impacts. As a result, the SacWAM modeling reflected in the DSR does not depict any sort of realistic operation of YWA's facilities.	
309	68	[Att. 1:] As Technical Memorandum #2 [see Attachment 5 of Attachment 1] explains, YWA's October 31, 2022 offer of settlement to FERC, and supporting technical memorandum, demonstrates that the observed lower Yuba River water temperature issues identified in the DSR's Appendix A1c can be resolved by requiring relatively small increases in spring flow releases by NID and PG&E from their upstream projects. YWA then would implement a limited reoperation of New Bullards Bar Reservoir to effectively release that water during the later period when lower Yuba River temperatures are a concern. YWA's October 31, 2022 offer of settlement, and supporting technical memorandum, are submitted with these comments as Exhibit C [see Attachment 4].	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project. To the extent that this comment offers alternative mechanisms to implement the cold water habitat objective, including working with other water diverters in the watershed, the revised proposed Plan amendments provide implementation flexibility if tailored solutions are available that are equally or more protective for fish. Please see Common Response 7.6.2, Aquatic Biological Resources and Cold Water Habitat, for a discussion on implementation of the cold water habitat objective and how the revised proposed Plan amendments could be implemented.
309	69	[Att. 1:] The Draft Staff Report's Modeling Of The Proposed Inflow And Cold Water Habitat Objectives Violates Basic Water-Right Priorities A specified point of diversion is a basic element of an appropriative water right. (Water Code § 1260, subd. (e) ("proposed place of diversion" as required element of application); Central Delta Water Agency v. State Water Resources Control Bd. (2004) 124 Cal.App.4th 245, 260-264 (permit must reflect application requirements).) While a point of diversion can be changed, the change cannot allow the appropriator to claim more water than its right previously encompassed or water from a different source. (State Board Order WR 2009-0061, In the Matter of Petition for Reconsideration of Division of Water Rights Refusal to Accept Protest by United States Marine Corps Base, Camp Pendleton against City of Santa Cruz, pp. 5-6.) For example, in approving YWA's water-right permits, the State Water Rights Board authorized certain changes from YWA's original application because they did not involve "the appropriation of more water or taking water from a different river system." (Johnson Rancho County Water Dist. v. State Water Rights Bd. (1965) 235 Cal.App.2d 863, 879.)	The revised proposed Plan amendments specify that numeric inflow requirements for the Sacramento/Delta tributaries will be implemented in accordance with water right priorities. The inflow objective applies throughout the Sacramento/Delta watershed to protect water quality in upstream reaches and contribute to Delta outflow. The State Water Board will develop an implementation methodology to determine when water is not available at water right holders' priorities of right. This methodology will be developed through a public process within one year of approval of the Plan amendments by OAL. Within two years of approval of the current plan amendments by OAL, the State Water Board will adopt curtailment regulations consistent with the above that will identify specific curtailment procedures and requirements.

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		Under these general rules, a State Board order addressed a situation very similar to the DSR's SacWAM modeling of the Yuba River watershed. In Order WR 2011-0016, the State Board decided that an appropriator's attempt to modify its appropriative right by moving its diversion downstream to access a source of water that was unavailable at the original point of diversion was not a legal change and instead was "an impermissible expansion of the right." (State Board Order WR 2011-0016, In the Matter of the Threat of Unauthorized Diversion and Use of Water by Thomas Hill, Steven Gomes, and Millview County Water District, pp. 39-40 (only natural flow at original point of diversion, reservoir releases of stored water also available downstream).) [footnote 13: While the appropriator in the Millview matter sought reconsideration by the State Board and successfully litigated certain aspects of the State Board's order, the appropriator did not even seek reconsideration of the State Board's determination that the attempted change in point of diversion was illegal. (State Board Order WR 2012-0001, In the Matter of Petitions for Reconsideration by Thomas P. Hill, Steven L. Gomes and Millview County Water District Regarding Order WR 2011-0016 Requiring Millview County Water District to Cease and Desist the Threatened Unauthorized Diversion of Water Under Claimed Pre-1914 Appropriative Right; Millview County Water Dist. v. State Water Resources Control Bd. (2014) 229 Cal.App.4th 879, 885.)]. As explained above, and notwithstanding the State Board's own recognition that an appropriator cannot claim water that is unavailable at its point of diversion, the DSR's modeling effectively allows appropriators high in the Middle and South Yuba Rivers' subwatersheds to claim priority over water that flows into those rivers downstream of those appropriators' diversions. As the enclosed Technical Memorandum #1 [see Attachment 4 of Attachment 1] (pp. 3-5, Table 2) explains, in the November-June period, the result is that NID's bypasses in a supposed 55% of unimpaired flow scenario range between only 2% and 15% of unimpaired flows at its facilities, while YWA is required to bypass between 71% and 73% of such flows at its facilities.	

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		The DSR's SacWAM modeling produces these results favoring NID's and PG&E's upstream projects even though YWA's water rights apply to flows between those projects' facilities and YWA's facilities and those projects' water rights—by definition—do not. The DSR's SacWAM modeling thus actually implements the opposite of water-right priorities, at least in the Yuba River watershed, even though the DSR asserts that the proposed Inflow and Cold Water Habitat Objectives would be implemented according to such priorities. (DSR, p. 5-17.) That modeling allows NID's and PG&E's upstream projects to largely maintain their existing diversions under the proposed Objectives, even though they export an average of 430,000 acre-feet from the watershed. (DSR, p. 2-53.) In contrast, that modeling compels YWA to bypass more than 55% of the unimpaired flows available at its facilities in which it and, through YWA, the people of Yuba County have invested to build and operate in reliance on water rights issued by the State of California.	
309	70	[Att. 1:] The SacWAM model's problems in representing the YRDP's operations under the proposed Inflow and Cold Water Habitat Objectives do not affect the utility of the model's results for evaluating the proposed Voluntary Agreements, as the DSR does in its Chapter 9. YWA's proposed Voluntary Agreement builds on the YRDP's existing operations by incorporating a lower end-of-September carryover storage target so that YWA would release additional water earlier in a given year as a contribution toward Bay-Delta flows. Because the SacWAM model operates to depict comparative results, all its results for the Voluntary Agreement scenario demonstrate are the effects of that limited and voluntary modification to YWA's existing operations, which assume existing regulations and rules like flow fluctuation criteria. The SacWAM modeling that involves YWA's Voluntary Agreement proposal therefore assumes compliance with existing regulations and rules. Modeling such a change to existing operations is a very different technical exercise than modeling wholesale changes to project operations like that depicted in the SacWAM modeling of the proposed Inflow and Cold Water Habitat Objectives reflected in the DSR.	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project.
309	71	[Att. 1:] The Draft Staff Report's Modeling Results Demonstrate That Its Hypothesized Implementation Of The Proposed Inflow	Please see the response to comment 309-38.

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		And Cold Water Habitat Objectives Would Discriminate Uniquely Against YWA And Likely Would Cause Very Significant, But Undisclosed, Impacts In Yuba County As an unsurprising result of the comprehensive errors, flaws and problems in the SacWAM modeling of the proposed Objectives' implementation, the DSR's limited YWA-specific results show that such an implementation program would discriminate uniquely against YWA. The most obvious evidence in the DSR of this discrimination is the modeled reduction in hydroelectric generation at YWA's New Colgate powerhouse. As discussed in more detail elsewhere in these comments, the DSR itself demonstrates that New Colgate would be—by far—the most impacted powerhouse modeled for the DSR. (DSR, p. 7.8-26, Figure 7.8-14; see also DSR Appendix A5, p. A5-4, Table A5-1; p. A5-22, Figure A5-6; p. A5-30, Figure A5-18.) According to the DSR's Figure 7.8-14, the projected impact on New Colgate's generation is approximately 50% greater than the impact on the Hyatt powerhouse at DWR's Oroville Dam, even though Hyatt's generation capacity is over twice as large as New Colgate's capacity. The disparity in New Colgate's generation relative to the other hydroelectric facilities is so plainly shown in the DSR's Figure 7.8-14 that it is worth reproducing that figure here [Attachment 1: Exhibit 4]:	Also please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply for a discussion about Yuba River model and operations.
309	72	[Attachment 1: Exhibit 4: Figure 7.8-14, Estimated Average Change in Hydropower Generation for the 55 Scenario at Individual Hydropower Facilities, from the 2023 Draft Staff Report]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	73	[Att. 1:] This discriminatory result likely is indicative of other discriminatory results for YWA, but it is impossible to tell from the DSR, or the SacWAM modeling results produced in its Appendix A1, what those likely significant impacts would be. Those undisclosed discriminatory impacts likely would be to agricultural water supplies in Yuba County and to the county's groundwater.	Please see Common Response 7.1, General CEQA and Approach to the Analysis, regarding the level and scope of the analysis contained in the Staff Report. Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for a discussion of SacWAM and the granularity of model results. Please also see Common Response 7.4, Agricultural Resources, for a discussion of the Statewide Agricultural Production (SWAP)

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			model and Common Response 7.12.2, Groundwater and Sustainable Groundwater Management Act, for a discussion of groundwater impact analyses. Please see the responses to comment 309-74 regarding agricultural water supply, and comment 309-75 regarding groundwater impacts.
309	74	[Att. 1:] The DSR Fails To Disclose Large Impacts To YWA's Agricultural Water Supplies The DSR and its modeling appendix that depicts results for the proposed Inflow and Cold Water Habitat Objectives—Appendix A1—fail to even attempt to disclose the proposed Objectives' impacts on YWA's agricultural water supplies. The DSR itself discloses the proposed Objectives' agricultural water-supply impacts only at the level of the "Sacramento River watershed." (DSR, pp. 6-58 to 6-62.) That level of generality makes that discussion in the DSR essentially meaningless, given the enormous diversity of streams, facilities and water rights in the watershed. It also is striking that, while the DSR discloses agricultural-supply impacts only at the level of the "Sacramento River watershed," it discloses municipal-supply impacts at the level of individual Bay Area agencies. (DSR, p. 6-101 (discussing water-supply impacts to, e.g., EBMUD through the Mokelumne Aqueduct and to others through the South Bay Aqueduct).) It thus is a mystery why the DSR does not disclose impacts to YWA's specific water supplies. Even a review of the more detailed SacWAM results contained in the DSR's Appendix A1 provides no information about how the proposed Objectives' implementation would impact YWA's unique Yuba River water supplies. The SacWAM model is organized by "water budget areas" and the DSR's Appendix A1 produces water-supply impact results according to those water budget areas. As discussed in more detail elsewhere in these comments, however, the SacWAM modeling amalgamates YWA's particular service area, which YWA serves with Yuba River water, into "Water Budget Areas 14 & 15" that also include areas served by DWR with Feather River supplies. (DSR Appendix A1, p. A1-377; SacWAM documentation (Sept. 2023) pp. xxii, 3-17, 4-2, 4-	The SacWAM results presented in Chapter 6, Changes in Hydrology and Water Supply, and Appendix A1, Sacramento Water Allocation Model Methods and Results, describe the changes in water supply that could occur as a result of the flow scenarios, and are appropriately detailed for the scope of the project. Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for additional discussion of the SacWAM scope, scale, and application. Also see Common Response 6.1 for additional information on Yuba River model representation and operations. The Staff Report appropriately evaluates agricultural impacts that would occur under the flow scenarios, and provides estimates of changes in crop acreage using the best available information. As discussed in Section 7.4, Agriculture and Forest Resources, the SWAP model is used to evaluate the agricultural impacts of the change in water supply. The SWAP model is a regional agricultural and economic optimization model that estimates growers' responses to changes in water supply by determining the cropping pattern that maximizes the net returns to agricultural production for 27 production regions. SWAP is currently the best available tool for modeling agricultural economic response to water supply shortage. It has been peer reviewed and applied to numerous policy analyses and impact assessments over the last two decades. Please see Section 7.4, and Appendix A3, Agricultural Economic Analysis: SWAP Methodology and Modeling Results, of the Staff Report for a more detailed description of the SWAP model and methods used to estimate agricultural economic effects. Detailed SWAP results for all 27 production regions within the Sacramento/Delta watershed and San Joaquin Valley are also provided in Appendix A3.

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		7, Table 4-2, Figure 4-1.) The DSR's Appendix A1 therefore produces information about the proposed Objectives' impacts to agricultural water supplies only for those water budget areas and not for YWA's unique Yuba River supplies. (DSR Appendix A1, pp. A1-395 to A1-396, Figures A1-188 to A1-189, Tables A1-443 to Table A1-446.) As explained in Technical Memorandum #2 [see Attachment 5 of Attachment 1], it is possible for an expert to extract from the SacWAM modeling reflected in the DSR how shortages in YWA's surface-water deliveries for Yuba County farmers would increase under the proposed Objectives. As discussed in Technical Memorandum #2, shortages in YWA's deliveries to the public and private entities that serve Yuba County's farmers—known as YWA's "member units"—rise significantly in the SacWAM modeling reflected in the DSR's analysis. Specifically, those results show that, with a 55% of unimpaired flow requirement under the proposed Objectives, those shortages would increase in about 40% of years and the increase would exceed 50,000 acre-feet in about 27% of years and go as high as 70,000 acre-feet. For context, as Table 3-7 in YWA's April 2021 Agricultural Water Management Plan states, YWA's water-supply contracts with the member units total 259,325 acre-feet per year (191,655 acre-feet in "irrigation season" supplies and 67,670 acre-feet in "offseason") For context, as Table 3-7 in YWA's April 2021 Agricultural Water Management Plan states, YWA's water-supply contracts with the member units total 259,325 acre-feet per year (191,655 acre-feet in "irrigation season" supplies and 67,670 acre-feet in "offseason" supplies). (Pp. 3-29 to 3-30.) [footnote 14: Cited pages of this plan are submitted with these comments as Exhibit E [see Attachment 6]. The plan is available online at https://www.yubawater.org/DocumentCenter/View/4949/2020-Agriculture-Water-Management-Plan.] In other words, just the increase in shortages associated with a 55% of unimpaired flow requirement under the proposed Objectives would be 27% of YWA's water-supply contracts with its member units and would exceed 19% of those contracts in 27% of years. [The relevant calculations are as follows: 70,000 acre-feet of shortage ÷ 259,325 acre-feet of contracts = 0.2699; 50,000 acre-feet of	Also see Common Response 7.1, General CEQA and Approach to the Analysis, for additional information on the level and scope of the analysis.

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		shortage ÷ 259,325 acre-feet of contracts = 0.1928.] The implementation of a 55% of unimpaired flow requirement also probably would cause even greater water-supply shortages in Yuba County overall, because such a requirement also presumably would limit the supplies that three of YWA's member units divert under their own water rights. As YWA's above-referenced Table 3-7 shows, those member units' water-right supplies total approximately 162,500 acre-feet per year. The facts that the DSR and even its modeling appendix fail to disclose the impacts of the proposed Objectives' implementation on water supplies from the Yuba River—the Sacramento River's third largest tributary (DSR, p. 2-15, Table 2.1-1)—and that it is necessary for a technical expert to extract results from the modeling to understand those impacts violates CEQA. (Vineyard, supra, 40 Cal.4th, at p. 442.) The fact that the DSR and its Appendix A1 bury these results in amalgamated results for water-supply impacts with areas that have different supplies means that the DSR fails to adequately disclose the proposed Objectives' particular impacts on YWA's water supplies.	
309	75	[Att. 1:] The Draft Staff Report Fails To Disclose The Proposed Inflow And Cold Water Habitat Objectives' Very Probable And Likely Large Impacts To Yuba County Groundwater There is an inextricable link between the agricultural water supplies that YWA delivers and the condition of Yuba County's groundwater. As discussed in more detail elsewhere in these comments, before YWA began delivering surface-water supplies south of the Yuba River in the mid-1980s, the groundwater basin there was overdrafted, but YWA's deliveries have allowed that basin to fully recover. Pages 3-3 to 3-4 of YWA's April 2021 Agricultural Water Management Plan explains this historical situation and depict how YWA's water-supply deliveries positively affected groundwater levels in Figure 3-3, as follows [Attachment 1: Exhibit 5]: As also discussed in more detail elsewhere in these comments, farms north of the Yuba River always have had adequate surface-water supplies, so regulatory requirements that would effectively force those farms to rely heavily on groundwater would be an unprecedented experiment. YWA documented the	Actions taken in response to reduced surface water supplies because of Sacramento/Bay-Delta Plan implementation will have varying degrees of impact to groundwater levels depending on the mitigation measure used. Pumping additional groundwater to make up for decreased surface water is one response and the Staff Report concludes that the subsequent adverse effect on groundwater levels could be a potentially significant (Impact GW-b). Other mitigation measures, however, have less of a groundwater impact. It is not possible for the State Water Board to predict regional impacts to groundwater because the assumptions used to model such impacts depend on the mitigation measures used, the actions of well owners in response to reduced surface water supplies, and how GSAs respond and adapt to changes in surface water supply in their GSP implementation. Please see Common Response, 7.1, General CEQA and Approach to the Analysis, for more information regarding the level and scope of analysis needed to meet CEQA requirements for the Plan update. Also see Common Response 7.12.2, Groundwater and Sustainable Groundwater Management Act, for more

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		history and status of Yuba County groundwater use and levels, and associated risks from potential new regulatory requirements, in its groundwater sustainability plan ("GSP"), which DWR has approved. [Footnote 16: Cited excerpts of this GSP are submitted with these comments as Exhibit F [see Attachment 7]. The full GSP is available online at https://www.yubawater.org/DocumentCenter/View/4441/Groundwater-Sustainability-Plan-full-document-PDF?bidId=.] (Yuba Subbasins Water Management Plan: A Groundwater Sustainability Plan (Dec. 2019) pp. 2-91 to 2-95, 4-4, 4-21.) Because the DSR fails to disclose how the proposed Inflow and Cold Water Habitat Objectives' implementation would significantly increase shortages in YWA's surface-water supplies, it is perhaps inevitable that the DSR fails to disclose those proposed Objectives' very likely and large indirect impacts on Yuba County groundwater. The most geographically-specific level relevant to Yuba County at which the DSR itself discusses the proposed Objectives' potential groundwater impacts is the "Sacramento River watershed." (DSR, pp. 7.12.2-42 to 7.12.2-46.) Given the wide range of groundwater conditions, and agricultural surface-water supplies, in the "Sacramento River watershed," the DSR's discussion of the proposed Objectives' groundwater impacts at that level of generality is essentially meaningless. As discussed above, even within Yuba County, historically there were very different groundwater conditions north and south of the Yuba River because of the differing levels of access to supplies from the river.	discussion on how the Sacramento/Delta update to the Bay Delta plan aligns with the implementation of SGMA. In addition, Common Response 8.1, Economic Analysis and Other Considerations, includes a general description of Yuba Water Agency's operations in its discussion of economic effects from reduced revenue of hydropower production and water sales.
309	76	[Att. 1:] [Attachment 1: Exhibit 5: Graph titled Groundwater Elevations in a South Yuba Subbasin Well]	This attachment was included with the comment letter. The attachment does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing attachments to comments.
309	77	[Att. 1:] Moreover, because the DSR's discussion of the proposed Objectives' groundwater impacts in the "Sacramento River watershed" depends on the SWAP model's characterization of "maximum replacement" pumping in that model's "dry" years, that discussion does not capture anything like the proposed Objectives' indirect impacts on Yuba County groundwater. (See DSR, pp. 7.12.2-40 to 7.12.2-43 (discussing DSR's reliance on	Given the inherent uncertainties involved in modeling agricultural impacts, the Staff Report uses a reasonable and conservative approach to evaluating potential agricultural impacts of the flow scenarios. SWAP is currently the best available tool for modeling agricultural economic responses to water supply shortage in the Central Valley. It has been peer-reviewed and applied to numerous policy analyses and impact

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		SWAP model's "maximum replacement" pumping scenario).) As discussed in NCWA's comments, which YWA incorporates by reference, the SWAP model's "dry year" analysis does not come close to capturing a worst-case scenario that could occur under the proposed Objectives because that analysis only averages dry and critical water years. (DSR, p. 7.4-35 (describing SWAP model's "dry" years); DSR Appendix A3, p. A3-8 (same).) The DSR thus not only fails to capture the proposed Objectives' impacts in the driest single years, but also fails to capture those impacts as they would occur in a multi-year drought similar to those that recur in California.	assessments over the past two decades. In addition, the Staff Report notes that impacts to agriculture and agricultural economic effects in any particular year may be greater or less than the SWAP model results for the "Dry Year" condition. Please see Common Response 7.4, Agricultural Resources, and Common Response 8.1, Economic Analysis and Other Considerations, for additional information on the SWAP model, agricultural impacts, and agricultural economic effects. The SWAP modeling presented in the Staff Report includes two bookends related to reduced Sacramento/Delta surface water supplies: maximum replacement groundwater pumping, and no replacement groundwater pumping. Under maximum replacement groundwater pumping, it was assumed that growers could use groundwater in addition to local water supplies to offset some or all Sacramento/Delta supply reductions. Importantly, this is not a directive that farmers and ranchers should or would replace Sacramento/Delta reductions with groundwater pumping, especially in light of requirements to achieve sustainability in basins subject to SGMA, but a good faith attempt to capture the potential maximum impacts on the groundwater basin from replacement pumping. For no replacement groundwater pumping, it was assumed that groundwater would not be available to replace reductions in surface water availability beyond current use under the baseline condition. Impacts on groundwater levels are appropriately evaluated in Section 7.12.2, Groundwater. It is uncertain how all water users may respond to reduced Sacramento/Delta water supply regarding groundwater pumping. Modeling lower groundwater replacement pumping by farmers and ranchers in response to decreased surface water supplies will result in lower impact conclusions for groundwater resources but will increase the severity of impact conclusions for agricultural resources. Conversely, modeling higher groundwater replacement pumping by farmers and ranchers increases the severity of impact conclusions for groundwater resources but assumes that more water is available for agriculture, which reduces the severity of impact conclusions for agricultural resources. Importantly, the analysis cannot assume both "worst-case" scenarios

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			simultaneously: there cannot be both maximum potential impacts on groundwater resources from replacement pumping and maximum potential impacts on agricultural resources. The analysis in Section 7.12.2 conservatively considers maximum potential impacts on groundwater resources from replacement pumping, and concludes that impacts could be potentially significant. In addition, to respond to comments received on the SWAP analysis presented in the Staff Report, supplemental SWAP model runs were conducted for: (1) critically dry water years; and (2) the driest water year (1977) intended to represent the last year of a multi-year drought. The supplemental SWAP model results for critically dry water years and for the driest water year (1977) intended to represent the last year of a multi-year drought are presented in Common Response 7.4, Agricultural Resources, for changes in crop acreage, and in Common Response 8.1, Economic Analysis and Other Considerations, for the corresponding changes in crop revenue. Overall, these supplemental SWAP results provide additional information requested by commenters, but are consistent with the analyses already presented. The 2023 draft Staff Report already identifies potentially significant impacts on agricultural production and identifies adverse agricultural economic effects, and these additional analyses do not change the conclusions of the environmental and economic analyses presented in the Staff Report.
309	78	[Att. 1:] The DSR suggests that: The maximum replacement groundwater pumping limits used in the SWAP analysis would likely overstate the actual amount of substitute groundwater pumping that would occur as a result of the proposed Plan amendments [the proposed Inflow and Cold Water Habitat Objectives]. (DSR, p. 7.12.2-43.) Nothing in reality supports this suggestion, at least as to Yuba County's groundwater. During future multi-year droughts, the	See the response to comment 309-77.

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		proposed Objectives' implementation likely would compel YWA to impose the higher level of shortages identified in Technical Memorandum #2 [see Attachment 5 of Attachment 1] in two or more consecutive years. Yuba County farmers likely would pump more groundwater in those years to replace water lost because of those shortages and the resulting effects on groundwater likely would compound year to year. The DSR's reliance on the SWAP's single "dry" year category to attempt to establish what "maximum replacement groundwater pumping" would be therefore bears little relationship to what would likely happen in reality.	
309	79	[Att. 1:] The State Board's own 2008 order that approved the Yuba River Accord demonstrates this fact. In that order, the State Board reserved jurisdiction to consider conjunctive-use transfers based on groundwater conditions that occurred the worst point of the 1987-1992 drought, namely the fall of 1991. (State Board Corrected Order WR 2008-0014, pp. 35-36, 45-46, 49, 54-55, 62-63 (Term 12).) The DSR does not even attempt to analyze the proposed Objectives' impacts to Yuba County groundwater in such conditions.	The 2023 draft Staff Report recognizes potentially significant impacts on groundwater supplies from water supply shortages and is discussed as Impact GW-b in Section 7.12.2 Groundwater. The regulatory pathway approach for the Sacramento/Delta update to the Bay-Delta Plan allows for the flexibility in adaptive implementation and cooperative solutions in part to reduce water supply impacts if tailored solutions are available that provide comparable benefits for fish, which may include groundwater substitutions performed in accordance with the Conjunctive Use Agreements if the agreement aligns with the Bay-Delta Plan requirements. Successful SGMA implementation would prevent undesirable results from Water Code § 10721, which includes prevention of chronic lowering of groundwater levels. Local extractions (pumping) and groundwater recharge should be managed locally and in a way that prevents reductions to the region's groundwater levels or storage. Please see Common Response 7.12.2, Groundwater and Sustainable Groundwater Management Act, for more information regarding groundwater management under SGMA. Also see Common Response 7.1, General CEQA and Approach to the Analysis, for more information regarding the scope and granularity of the analyses.
309	80	[Att. 1:] The DSR states that "[l]ocal public agencies have been on notice since 2012 regarding State Water Board's intention to update the Bay-Delta Plan to provide increased instream flows for the protection of fish and wildlife beneficial uses in the Sacramento River watershed and Delta." (DSR, p. 7.12.2-1.) [Footnote 17: Nothing in the Sustainable Groundwater Management Act ("SGMA") requires any local agency to consider	The 2023 draft Staff Report acknowledges that the water users' response to changes in water supply may have impacts on groundwater (discussed in Section 7.12.2, Groundwater). Subbasins designated as a medium or high priority basin, unless adjudicated, were required to form Groundwater Sustainability Agencies (GSAs) and develop their subbasins' Groundwater Sustainability Plan (GSP). This included North Yuba and South

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		documents produced by State Board staff and not approved by the State Board itself in developing a groundwater sustainability plan ("GSP"). SGMA limits the State Board's role to addressing probationary basins and the State Board must relinquish that role in defined circumstances. (Water Code §§ 10735.2, subd. (a)(3)-(4), (d) (e); 10735.6; 10735.8, part. Subd. (g)(1)-(4).) YWA is not located in a probationary basin. Nothing in Porter-Cologne or SGMA authorizes the State Board to bootstrap its way into greater authority over groundwater simply by writing terms that would do so into a water quality objective or a program of implementation. In fact, the state policies enacted by SGMA include the following: "In enacting this part, it is the intent of the Legislature to do all of the following: . . . (h) To manage groundwater basins through the actions of local government agencies to the greatest extent feasible, while minimizing state intervention to only when necessary to ensure that local agencies manage groundwater in a sustainable way." (Water Code § 10720.1.)] The DSR thus suggests that local groundwater sustainability agencies like YWA should have considered the possibility of the State Board implementing something like the proposed Inflow and Cold Water Habitat Objectives in developing their GSPs. YWA in fact did that. Its GSP identifies potentially increased streamflow requirements as imposed by the State Board as the single most likely cause of south Yuba County's groundwater returning to historic lows and triggering minimum thresholds under the Sustainable Groundwater Management Act. (YWA's GSP, pp. 4-4, 4-21.) DWR has approved YWA's GSP, which is available to the State Board. The DSR's groundwater analysis nonetheless simply fails to disclose the proposed Objectives' likely significant impacts to YWA's surface-water supplies and therefore those proposed Objectives' resulting indirect impact on Yuba County groundwater.	Yuba subbasins. While North and South Yuba subbasins' GSP have been approved by the Department of Water Resources, they still require regular review, including annual reporting (Wat. Code, § 10727.8), periodic review and assessment (Wat. Code, § 10728.2) and five year reviews by DWR (Wat. Code, § 10727.8). This demonstrates that GSPs are not static and should be updated regularly to reflect sustainable management under dynamic circumstances, such as changes to regulatory requirements. Please see Common Response 7.12.2, Groundwater and Sustainable Groundwater Management Act, for more information on the non-static nature of SGMA implementation, State Water Board roles, GSA roles, and discussion of SGMA overlap with the Sacramento/Delta Bay Delta plan update. Please also see Common Response 7.1, General CEQA and Approach to the Analysis, for more information on how this Staff Report is not required to provide region specific impact analyses and is part of a larger planning process that meets CEQA requirements.
309	81	[Att. 1:] The Best Available Scientific Information, Which YWA Produced At The State Board's Request And Which The Draft Staff Report Does Not Acknowledge, Shows That The Proposed Inflow And Cold Water Habitat Objectives' Implementation Would Cause Significant Adverse Water Temperature Impacts On Anadromous Salmonids and Green Sturgeon In The Lower Yuba River, While The Draft Staff Report Includes An Insufficient Evaluation Of The Proposed Objectives' Impacts On Those Fish.	An analysis for the Yuba River has been added to Chapter 13, Revised Proposed Plan Amendments. A temperature model was developed for the Yuba River. Please refer to Appendix H1b, Water Temperature Modeling and Fish Assessment for the Sacramento, Feather, American, and Yuba Rivers, for more information about the Yuba temperature model and results.

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309	82	[Att. 1:] The DSR's only analysis of the proposed Inflow and Cold Water Habitat Objectives' water temperature impacts on anadromous salmonids and green sturgeon in the Yuba River appears to be the following qualitative paragraph on the DSR's page 7.6.2-88: The analysis of temperature-related effects in Sacramento River watershed regulated tributaries other than the Sacramento, American, and Feather Rivers relied on a qualitative interpretation of SacWAM reservoir storage and flow results. The qualitative analysis used the basic assumption that increases in flow and/or reservoir storage will cause a reduction in water temperatures at or downstream of the location. Results indicate that some reservoirs could experience reductions in carryover storage. Some reservoirs (e.g., Black Butte Reservoir on Stony Creek, Camanche Reservoir on the Mokelumne River) show end-of-September carryover storage that decreases from baseline under most storage conditions and all flow scenarios. Reduced carryover storage could lead to lower flows during fall months. Reductions in flows and carryover storage could reduce cold water habitat and affect special-status fish species in the reaches below these reservoirs. The DSR contains quantitative water temperature modeling information for only the American, Feather and Sacramento Rivers, but states that its temperature analyses for those rivers are "indicative of changes in stream temperatures that may occur downstream of other rim reservoirs." (DSR, pp. 7.6.2-88, 7.12.1-67 (quoted).) The DSR appendices' actual water temperature modeling results show that the proposed Objectives' implementation could adversely affect water temperatures for native fish. For example, those appendices show that, at 55% of unimpaired flow, the proposed Objectives' implementation could dramatically increase the amount of time that lower American River water temperatures exceed temperature standards for juvenile rearing steelhead, which are listed under the federal Endangered Species Act. (DSR, p. 7.6.2-12; DSR Appendix A6, Tables A6-208, A6-210 to A6-213.) If, as the DSR states, such results are "indicative" of the conditions that the proposed Objectives' implementation could produce in the lower Yuba	An analysis for the Yuba River has been added to Chapter 13, Revised Proposed Plan Amendments. A temperature model was developed for the Yuba River. Please refer to Appendix H1b, Water Temperature Modeling and Fish Assessment for the Sacramento, Feather, American, and Yuba Rivers, for more information about the Yuba temperature model and results. Please see also response to comment 309-83. The impact assessment in the Staff Report focuses on changes in water temperature conditions for fish relative to baseline conditions. As discussed in Section 7.6.2, Aquatic Biological Resources, most tributaries with reservoirs have existing temperature management concerns at certain times under baseline conditions. These existing temperature issues do not represent a temperature impact, although the cold water habitat objective is intended to remedy that over time. Note also that the analysis shows that the flow scenarios also improve temperatures in many instances primarily during the spring when flows are increased relative to baseline. As presented in Appendix H1b, Water Temperature Modeling and Fish Assessment for the Sacramento, Feather, American, and Yuba Rivers, for example, on the American River at Watt, the scenarios decrease April temperature by upwards of 2 degrees, and at times decrease May and June extreme temperatures as well. There are also tables for each modeled tributary that shows the frequency of favorable changes for each scenario, listed by fish species and life-stage. Because implementation of the cold water habitat objective is complex, methodology for individual tributary implementation will take time. Please see Common Response 7.6.2, Aquatic Biological Resources and Cold Water Habitat, regarding implementation of the cold water habitat objective. The common response also includes a sensitivity analysis that describes how American River temperature effects in the Staff Report associated with the flow scenarios could be reduced by modifying the target temperatures for Folsom Reservoir releases.

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		River, then very significant temperature-related impacts to salmonids in the river very well may occur.	
309	83	[Att. 1:] The DSR does not rely on any modeling or other quantitative information in assessing the proposed Objectives' potential to impact anadromous salmonids, including the federally-threatened spring-run Chinook salmon and steelhead, and the federally-threatened green sturgeon in the lower Yuba River by causing changes in water temperatures. Through FERC's pending relicensing of YWA's YRDP, YWA has provided to FERC, the State Board and many other parties extensive quantitative hydrologic, water temperature and biological modeling that show that a 55% of unimpaired flow requirement, if applied to YWA, would in fact significantly impact anadromous salmonids and green sturgeon in the lower Yuba River by increasing water temperatures above biologically significant levels. YWA conducted this modeling and analysis partly in response to an explicit request by the State Board and made this information available to the State Board, via FERC's electronic docket, in 2021 and 2022. The DSR, though, does not consider any of that modeling, that analysis or those effects determinations. Instead, the DSR concludes that the proposed Objectives' implementation would generally result in higher spring flows that more closely resemble the natural hydrologic regime, and assumes that native anadromous salmonids and other native species would therefore be expected to benefit. (DSR, pp. 7.6.2-93.) However, the technical information that YWA made available to the State Board in 2021 and 2022 through the YRDP's FERC relicensing quantitatively demonstrates that imposing a 55% of unimpaired flow requirement on YWA—as the proposed Inflow and Cold Water Habitat Objectives propose [footnote 18: A requirement of 55% of unimpaired flow at the mouth of a tributary “or other locations” approved by the State Board's Executive Director would be the default under both the “default implementation” and the “voluntary implementation” of the proposed Inflow Objective. (DSR, pp. 5-18 to 5-20.)]—likely would cause very significant temperature impacts on the lower Yuba River's salmonids. On December 7, 2021 and March 7,	State Water Board staff did incorporate information provided by YWA, and used this information to develop a new HEC-5Q model for the Yuba River. Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, related to SacWAM modeling on the Yuba River. SacWAM is used for the analysis and input to the newly developed Yuba River HEC-5Q model. The Yuba HEC-5Q model runs for the same period of simulation as SacWAM and is reliant on SacWAM outputs for hydrology. For this reason, results of the temperature modeling may differ from the modeling conducted by YWA. While a different model, model improvements, or modeling by YWA could improve accuracy of the modeling, the model used in the Staff Report includes a sufficient level of accuracy to evaluate the project. Additional refinements, including those that could potentially increase the unfavorable effects (and favorable effects) on the Yuba River, would not result in changes to the conclusions and impact statements already made for the Yuba River, as they have already been determined as potentially significant. Although approaches may differ among tributaries or agencies, the effectiveness of cold water management will require ongoing coordination, collaboration, and technical review among water managers, stakeholders, and technical experts to facilitate both short-term and long-term planning and decision-making efforts. Accordingly, it is expected and encouraged that modelling efforts be improved as implementation of the cold water habitat objective moves forward. Please refer to Appendix H1b, Water Temperature Modeling and Fish Assessment for the Sacramento, Feather, American, and Yuba Rivers, for more information about the Yuba River HEC-5Q temperature model and results. Because implementation of the cold water habitat objective is complex, methodology for individual tributary implementation will take time. Please see Common Response 7.6.2, Aquatic Biological Resources and Cold Water Habitat, regarding implementation of the cold water habitat objective and flexibility included in the revised proposed Plan amendments related to long-term temperature

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		2022, in response to an additional information request from FERC, YWA submitted to FERC, hydrology and water temperature modeling and a biological evaluation of those modeling results. [footnote 19: The December 7, 2021 filing is present in FERC's eLibrary at Accession Number 20211207-5175. A complete copy of the text of that memorandum is submitted with these comments as Exhibit G [see Attachment 8]. Attachment 1 to the memorandum consisted of a DVD containing the modeling and YWA submitted a DVD to FERC and offered to provide a copy of that DVD on request. The March 7, 2022 filing is present in FERC's eLibrary at Accession Number 20220307-5273. Copies of cited excerpts of that filing are submitted with these comments as Exhibit H [see Attachment 9].] Attachment 2 to YWA's March 7, 2022 filing [see Attachment 9] included YWA's quantitative analysis of the lower Yuba River water temperatures that various potential operational scenarios would produce and what those scenarios' effects on the river's salmonids would be. The scenarios that YWA analyzed included "Scenario 2," the "Base Case with Yuba-Bear and Drum Spaulding (YB/DS) Projects Existing Conditions (Base Case)" as the basis of comparison; and "Scenario 9B," which was named "FERC FEIS Staff Alternative with WQC Condition 6 Tunnel Closures, 55% unimpaired inflows and YB/DS Projects Existing Conditions (FEIS + WQC 6 + 55% UIF YRDP)." (YWA's Technical Memorandum – Modeling Approach, pp. ES-1, 6-8, 20, submitted to FERC on December 7, 2021 as attachment to YWA letter ("2021 Technical Memorandum") [see Attachment 8]; YWA's Attachment 2 to YWA's March 7, 2022 filing with FERC, entitled Technical Memorandum – Biological Evaluations of the Various Modeled Scenarios to Support the Yuba County Water Agency's Response to FERC's Additional Information Requests ("2022 Attachment 2"), pp. ES-1, ES-13 to ES-14, 2-5. [see Attachment 9]) YWA modeled that Scenario 9B partly in response to a September 13, 2021 letter from the State Board staff, which contained the following statements: To assess the potential impacts and benefits of implementing Condition 1(D) [of the July 2020 water quality certification that	management strategy and refinement of the carryover storage target ranges. Additionally, please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, regarding Yuba River model representation and operations.

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		the State Board's Executive Director issued to YWA], State Water Board staff support modeling scenarios that represent potential outcomes of the Sacramento/Delta update to the Bay-Delta Plan . . . State Water Board staff recommend that YCWA [Yuba County Water Agency] model three scenarios to represent potential outcomes of the Sacramento/Delta update to the Bay-Delta Plan: (1) 45 percent of unimpaired flow at the mouth of the Yuba River; (2) 55 percent of unimpaired flow at the mouth of the Yuba River; and (3) YCWA's proposed voluntary agreement (State Board's September 13, 2021 letter to W. Whittlesey, YWA, p. 3.) [footnote 20: A copy of this letter is submitted with these comments as Exhibit I [see Attachment 10]. The Fresno County Superior Court invalidated the referenced 2020 water quality certification in a June 28, 2022 Order Granting The Motion For Judgement On The Petition For Writ Of Mandate And Statement Of Decision.] That Scenario 9B assumed that: (1) the YRDP would be subject to a requirement to bypass 55% of unimpaired flows; (2) YWA would be required to bypass flows at its facilities in the Middle Yuba River watershed, consistent with Condition 6 of the July 2020 water quality certification; and (3) the upstream Yuba-Bear and Drum-Spaulding projects operated by NID and PG&E, respectively, would continue to operate as they do now. (2021 Technical Memorandum, pp. 1, 3, 20.) That Scenario 9B is very similar to how the DSR's SacWAM modeling assumes YWA would operate the YRDP and how NID and PG&E would operate their projects. As discussed in the enclosed Technical Memorandum #1 by YWA's consulting hydrologist [see Attachment 4 to Attachment 1], in most cases, the DSR's SacWAM modeling does not require significant increases in bypasses of unimpaired flow by NID and PG&E at their facilities. YWA's modeling and biological evaluation of Scenario 9B contain extensive results and discussion that demonstrate that implementing a 55% of unimpaired flow requirement at the mouth of the Yuba River, while demanding little additional contribution from NID and PG&E, would significantly increase	

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		lower Yuba River water temperatures and cause severe temperature-related impacts to sensitive fish species, including spring-run Chinook salmon and steelhead that are listed under the federal Endangered Species Act. (2022 Attachment 2, pp. ES-13 to ES-14, 178-180 (summary of 55% unimpaired flow scenario impacts on spring-run Chinook salmon and steelhead).) see Attachment 13]. While those quantitative analytical results are extensive, they can be summarized briefly. Specifically, the modeling and biological evaluation of a 55% of unimpaired flow requirement for the lower Yuba River indicates that such a requirement would cause summer and fall temperatures to increase significantly and adversely impact spring-run Chinook salmon in their adult immigration, adult holding, spawning, initial incubation, post-spawning embryo incubation, juvenile rearing, downstream movement, yearling and smolt emigration lifestages; and steelhead in their adult immigration, adult holding, juvenile rearing, downstream movement, yearling and smolt emigration lifestages. (2022 Attachment 2, pp. 154-162 (spring-run Chinook salmon), 166-174 (steelhead).) For example, YWA's analysis shows that the 55% of unimpaired flow scenario would cause water temperatures to be up to 13°F warmer than the base case in the Daguerre Point Dam reach during steelhead's June-August over-summer juvenile rearing period. (2022 Attachment 2, p. 172.) Even though YWA conducted all of this analysis of a 55% of unimpaired flow requirement at the State Board staff's explicit request and as a potential representation of an update to the Bay-Delta Plan, the DSR fails to consider any of YWA's information.	
309	84	[Att. 1:] Instead, as discussed above, the DSR makes a simple, qualitative and unsupported "basic assumption that increases in flow and/or reservoir storage will cause a reduction in water temperatures at or downstream of the location." (DSR, p. 7.6.2-88.) The DSR states that the proposed Objectives' implementation would generally result in higher spring flows that more closely resemble the natural hydrologic regime, and then just assumes that native anadromous salmonids and other native species would be expected to benefit. (DSR, p. 7.6.2-93.) However, as explained in HDR's enclosed Attachment 1 [see	The Staff Report acknowledges potential temperature increases could occur in some streams under some circumstances and managing these factors to protect cold water habitat for fish is complex and challenging. The cold water habitat objective is narrative in order to provide sufficient flexibility for implementation options. The cold water habitat objective is intended to bolster existing legal protections to ensure comprehensive temperature protection over time. An analysis for the Yuba River has been added to Chapter 13,

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		Attachment 2 of Attachment 1], the higher spring flows that would result from the proposed Objectives' implementation would come at the cost of higher (and less suitable) water temperatures during the summer and fall. The DSR does not acknowledge that the proposed Objectives' implementation would result in a trade-off between lifestages affected by winter/spring changed conditions and lifestages affected by resultant adverse water temperature conditions during summer/fall. YWA's modeling submitted to FERC, however, shows that large water temperature increases at biologically meaningful levels would occur during summer and fall with implementation of the proposed Objectives' 55% of unimpaired flow requirement and that significant adverse water temperature impacts to anadromous salmonids and green sturgeon would result.	Revised Proposed Plan Amendments. A temperature model was developed for the Yuba River. The temperature model results for the Yuba River were used to assess temperature effects on all fish life stages of concern as described in Appendix H1b, Water Temperature Modeling and Fish Assessment for the Sacramento, Feather, American, and Yuba Rivers, and Section 13.7.6.2, Aquatic Biological Resources. Please refer to Appendix H1b for more information about the Yuba temperature model and results. Please see comment response 309-83 and Appendix H1b for information on the new analysis for the Yuba River.
309	85	[Att. 1:] The DSR's analysis is inadequate due to the failure to consider YWA's technical analysis of the water temperature-related impacts on fish, including special-status fish in the lower Yuba River—analysis that is the best available scientific information on the subject. The DSR therefore fails to comply with CEQA because it does not adequately analyze the proposed Inflow and Cold Water Habitat Objectives' impacts to those fish. In addition, YWA's technical analysis demonstrates that implementation of a 55% of unimpaired flow requirement, as could exist under those proposed Objectives, would likely fail to reasonably protect beneficial uses, including fish and wildlife beneficial uses, as required by Porter-Cologne.	See comment response 309-83 and Appendix H1b, Water Temperature Modeling and Fish Assessment for the Sacramento, Feather, American, and Yuba Rivers, for information on the new analysis for the Yuba River. Because implementation of the cold water habitat objective is complex, methodology for individual tributary implementation will take time. Please see Common Response 7.6.2, Aquatic Biological Resources and Cold Water Habitat, regarding implementation of the cold water habitat objective and flexibility included in the revised proposed Plan amendments related to long-term temperature management strategy and refinement of the carryover storage target ranges.
309	86	[Att. 1:] The Draft Staff Report's Energy Analysis For The Proposed Inflow And Cold Water Habitat Objectives Does Not Adequately Analyze The Local And Regional Electrical Reliability Problems That Would Result From Those Objectives' Impacts On Yuba Water Agency's Hydroelectric Generation While the DSR acknowledges that the proposed Inflow and Cold Water Habitat Objectives would adversely affect hydroelectric generation, the DSR's analysis is inadequate for several reasons: -- The DSR fails to adequately analyze how the proposed	Please see Common Response 7.8, Energy and Hydropower, regarding the analysis of local effects, effects at Colgate Powerhouse, grid reliability, peaking generation, electrical emergencies, and the future of the California electrical grid.

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		Objectives' disproportionate impacts on generation at YWA's New Colgate powerhouse will impact the already inadequate capacity in the California Independent System Operator's ("CAISO") Sierra region. -- The DSR fails to adequately analyze the extent to which the proposed Objectives' implementation will constrain peaking generation and therefore exacerbate electrical emergencies like those experienced in both 2020 and 2022.	
309	87	[Att. 1:] The DSR fails to account for the reasonably foreseeable closure of PG&E's Diablo Canyon nuclear power plant, which would significantly impact total statewide electrical generation, alter the state's mix of zero-carbon resources and make hydroelectric peaking even more critical to grid reliability.	As described in Section 7.8, Energy, the scale of reductions of hydropower under the regulatory pathway is very small and as described in Section 9.7.8, Energy, would be even smaller under the VA pathway. For example, the estimated 700 MW reduction in power generation associated with the 55 scenario represents approximately 1.5 percent of the CAISO peak energy demand during the August 14, 2020, rolling blackouts. Under the baseline condition and all flow scenarios, hydropower peaking operations would still occur in order to maximize hydropower during the daily time of peak demand. In the extremely rare instance of rotating power outages for conditions not associated with the Bay-Delta Plan, health and safety provisions would likely apply, allowing increases in reservoir releases. Section 7.8 of the Staff Report concludes that the Plan amendments would not significantly impact reliance on renewable energy sources, in part due to rapid increases in renewable electricity. Please see also Common Response 7.8, Energy and Hydropower, regarding the future of California's electrical grid. As discussed in that response, reductions in hydropower generation would be small compared to the new energy generation needed to replace electricity generated through fossil fuel consumption and meet the increasing demand for electricity. Furthermore, as indicated in a CAISO study, battery storage will likely provide a substantial portion of early evening power generation in the future (>19,000 MW in 2045). The cumulative impact analyses focus on relevant projects, programs, and categories of projects that may interact with the proposed Plan amendments in a way that could result in cumulatively significant impacts. The small scale of reductions in

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			energy production at individual hydroelectric facilities is not relevant in comparison with overall energy supply of the State and the considerations of the Diablo Canyon power plant. Consideration of the potential Diablo Canyon closure would not alter any of the Staff Report's reasoning or analysis.
309	88	[Att. 1:] The following comments concern the proposed Objectives' impacts on electrical reliability in the region where YWA is located. As the DSR and its Appendix A5 acknowledge, for purposes of electrical resource adequacy analysis, CAISO divides the state into regional areas called Local Capacity Requirement (LCR) areas. (DSR, pp. 7.8-7, 7.8-24; DSR Appendix A5, p. A5-36 to A5-40.) As the DSR and its Appendix A5 also acknowledge: -- YWA's New Colgate powerhouse is one of the four largest powerhouses that would be impacted by the implementation of the proposed Objectives' implementation and is located in the Sierra LCR area (DSR, pp., 7.8-7, 7.8-9). -- As recognized by both CAISO and the California Public Utilities Commission ("CPUC"), the electrical grid is more reliable and efficient when LCR areas generate their own electricity (DSR, p. 7.8-7; DSR Appendix A5, p. A5-36). -- The Sierra LCR area is one of three that encompass locally deficient subareas (DSR Appendix A5, p. A5-37 to A5-40). The DSR and its Appendix A5 further indicate that YWA's New Colgate powerhouse would be, by far, the hydroelectric facility most impacted by the Inflow and Cold Water Habitat Objectives' implementation. The DSR's Figure 7.8-14 (on page 7.8-26) indicates that impacts to New Colgate's generation with the Inflow Objective being set to 55% of unimpaired flow would average nearly 150 gigawatt hours (GWh) annually. (See also DSR Appendix A5, p. A5-30, Figure A5-18.) According to that figure, this projected impact is approximately 50% greater than the impact on the Hyatt powerhouse at DWR's Oroville Dam, even though Hyatt's generation capacity is over twice as large as Colgate's capacity. (See DSR Appendix A5, p. A5-4, Table A5-1; p.	Please see Common Response 7.8, Energy and Hydropower, regarding local effects (including effects at Colgate Powerhouse), the effect of the Plan amendments on grid reliability, and emergency hydropower generation. Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, regarding modeling of carryover storage targets and SacWAM reservoir buffer pools. Please also see the response to comment 309-56 for a discussion related to the New Bullards Bar carryover targets and approach used in SacWAM to model implementation of the carryover target. Yuba Water Agency would not be solely responsible for ensuring that a selected percentage of unimpaired flow would flow out of the Yuba River. There are separate compliance points for the North Fork, Middle Fork, and South Fork of the Yuba River. Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for a discussion about Yuba River model and operations. Regarding presentation of median values versus presentation of results for constrained conditions: While the text in Section 7.8, Energy, that summarizes changes in hydropower generation focuses on median values, the cumulative distribution of values are shown in multiple tables and figures, with lower baseline values representing drier conditions with less hydropower generation. In addition, the power flow modeling analyzed grid reliability under conditions of large constraints by comparing baseline grid reliability to a scenario with the greatest reduction in hydropower (the 75 scenario) during a period of peak demand (see Common Response 7.8, Energy and Hydropower). In the Sierra LCR region, the 75 scenario did not cause out-of-limit bus voltage violations or transmission line or transformer

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		A5-22, Figure A5-6.) [Footnote 21: According to that table, Hyatt's capacity is 743 megawatts and New Colgate's is 315 megawatts.] As explained in Technical Memoranda #1 and #2 from YWA's hydrology consultant that are submitted with these comments [Attachments 4 and 5 of Attachment 1, respectively], this significantly disproportionate impact on YWA and New Colgate appears to occur because the DSR's SacWAM modeling assumes that: (1) YWA will be solely responsible for ensuring that a selected percentage of unimpaired flow would flow out of the Yuba River, even though up to 34% of the Yuba River watershed's runoff is exported in dry years; and (2) YWA would be compelled to maintain, to the extent possible, 750,000 acre-feet in end-of-September storage in New Bullards Bar Reservoir for asserted temperature-control purposes. (See DSR Appendix A1, p. A1-285, Figures A1-134 to A1-135.). Impacts on New Colgate's generation at levels as projected by the DSR could have very serious impacts on electrical supplies and grid reliability in the Sierra LCR area, as documentation CAISO has submitted to the State Board shows. In 2021, under the State Board's emergency drought curtailment regulations, CAISO submitted to the State Board a November 2, 2021 letter, which stated that New Colgate had provided resource adequacy generation in the summer of 2021 and was expected to do so again in the summer of 2022. Specifically, CAISO stated: The New Colgate Powerhouse provided local Resource Adequacy during the summer months in 2021. The CAISO reasonably expects the New Colgate Powerhouse to provide this same capacity for summer 2022 and expects to rely on it to support basic grid reliability, particularly in the Sierra Local Capacity Area. In fact, as discussed in the joint hydroelectric operators' comments to which YWA is a signatory, California experienced a very severe electrical emergency in September 2022. As requested by CAISO, YWA increased its generation during that emergency in order to assist in maintaining the electrical grid's reliability. (Sept. 1, 2022 e-mail from Debi Le Vine, CAISO to Karl	thermal (megavolt-ampere) loading violations under normal system conditions. Under contingency conditions, the power flow assessment found that the 75 scenario caused no bus voltage violations but caused several thermal overloading issues across the Sierra LCR region prior to applying any redispatch of generation and with the redispatch of power from existing generators, all violations can be resolved.

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		Parker, YWA.) [Footnote 23: A copy of this e-mail is submitted with these comments as Exhibit B [see Attachment 3].] This emergency grid-reliability generation caused YWA to draw New Bullards Bar Reservoir down to approximately 635,000 acre-feet in storage by the end of September 2021. [Footnote 24: This information is available on the California Data Exchange Center.] This storage level was approximately 15,000 acre-feet below YWA's current end-of-September carryover storage target of 650,000 acre-feet and approximately 115,000 acre-feet below the 750,000 acre-feet end-of-September level that the DSR's SacWAM modeling appears to assume YWA could be compelled to attempt to maintain. The DSR, however, does not appear to address anywhere the impacts on the Sierra LCR area's electrical capacity and reliability as a result of the impacts on New Colgate's generation. This omission exists even though: (1) the DSR acknowledges the Sierra LCR area's resource-adequacy issues; (2) the DSR also depicts severe and highly disproportionate impacts on New Colgate's generation under the proposed Inflow and Cold Water Habitat Objectives; and (3) CAISO submitted to the State Board in 2021 documentation of New Colgate's real-world importance to the Sierra LCR area's reliability. The DSR's Appendix A5 states that the "Sierra Subarea is of particular interest" (DSR Appendix A5, p. A-40), but nowhere does the DSR or its Appendix A5 analyze the specific impacts on that area's capacity or reliability that the proposed Objectives' implementation would have as a result of their very large impacts on New Colgate's generation. Moreover, the DSR discusses those proposed Objectives' impacts on hydroelectric production available to the Sierra LCR area in terms of "median" monthly production, rather than in terms of the most constrained circumstances, in which that area's resources would be most strained. (DSR, p. 7.8-24; see also DSR, pp. 7.8-19 to 7.8-20.) As a result of its many flaws, the DSR's analysis of those proposed Objectives' energy impacts is inadequate.	
309	89	[Att. 1:] A copy of this CAISO letter is submitted with these comments as Exhibit J [see Attachment 11]. Resource adequacy generation is associated with ensuring that electrical supplies	The sentence in Section 7.8, Energy, regarding profits from hydroelectric generation has been edited to read "The ability to

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		can meet peak demands. The DSR states that an increased capacity to ramp generation and releases up and down to meet peak demands “allows hydroelectric facility operators to increase profits by supplying energy when demand and prices are high.” (DSR, p 7.8-14.) This statement is incorrect for public agencies like YWA that do not generate profits for themselves, shareholders or any other interest. As explained in Comments 6 and 8 below YWA using its revenues to support its project’s operations, needed flood-control measures and other water-related community benefits consistent with its mission as assigned by the Legislature when it created YWA in the 1959 Yuba County Water Agency Act. That Act is discussed in more detail in Comments 6 and 10.	ramp releases up or down allows hydropower facility operators to supply energy when demand and prices are high.”
309	90	[Att. 1:] The Draft Staff Report Fails To Adequately Analyze Flood Impacts The Proposed Inflow And Cold Water Habitat Objectives Would Have In Yuba County Because It Uses Irrelevant Risk Factors, Does Not Analyze The Impact Of Yuba Water Agency’s Reduced Flexibility And Does Not Consider The Agency’s Reduced Ability To Fund Flood-Control Projects The DSR’s analysis of the flood-risk impacts of the proposed Inflow and Cold Water Habitat Objectives’ implementation is inadequate for multiple reasons: The DSR uses irrelevant standards that do not account for peak flood flows associated with atmospheric rivers and represent less than 25% of peak flood flows on the Yuba River. The DSR does not disclose or analyze how the 750,000 acre-foot end-of-September carryover storage requirement that the SacWAM modeling hypothesizes the State Board would impose on YWA’s New Bullards Bar Reservoir would impact YWA’s ability to flexibly operate the reservoir to reduce flood risk, either now or in the future with planned forecast-informed reservoir operations (“FIRO”) and YWA’s planned Atmospheric River Control (“ARC”) spillway. The DSR does not disclose or analyze how the proposed Objectives’ implementation would impact YWA’s continued capacity to provide the sole local financial support for continued	Please see response to comment 309-13 regarding carryover storage and flood indicators. If Yuba Water Agency (YWA) income is affected by the Plan amendments, the effect on flood-control efforts would be uncertain. YWA could find other sources of income for flood-control efforts such as increases in water rates. In addition, YWA is not the only agency providing funding for flood control on the Yuba River. The State and federal governments provide substantial contributions (YWA 2025). Estimating possible increases in flooding associated with changes in funding would be speculative. Please see Common Response 8.1, Economic Analysis and Other Considerations, for a discussion of YWA economic effects, including an analysis of the economic effects on hydropower generation, which indicates an average annual revenue reduction of 2.0 to 5.3 percent for the 45 to 65 scenario for the region’s facilities combined. As described in Common Response 7.8, Energy and Hydropower, the estimated combined effect on the three major Yuba Water Agency hydropower facilities under the 55 scenario is an average annual reduction in generation of 8.6 percent, leaving Yuba Water Agency with substantial income from hydropower generation. Similarly, the SWAP analysis of agricultural impacts shown in final Staff Report Section 8.4, Agricultural Water Supply Economic Effects, indicate that substantive changes in the Sacramento/Delta are not likely in agricultural production in the

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		flood-risk reduction projects. While nothing in the DSR discusses this likelihood, the proposed Objectives' implementation probably would significantly reduce YWA's hydroelectric-generation and agricultural water sales revenues and completely eliminate YWA's revenues from Yuba River Accord transfers. For these reasons, the DSR fails to adequately analyze the flood-risk impacts of the proposed Objectives' implementation.	45 to 65 scenarios. There is no basis for concluding that agricultural water sales would be significantly reduced as the commenter states. In addition, the Plan is revised as described in Common Response 1.3, Revised Proposed Plan Amendments. The analysis in Chapter 13, Revised Proposed Plan Amendments, demonstrates that those project revisions could reduce impacts that would affect YWA sources of funding at the outset of Plan implementation.
309	91	[Att. 1:] The Draft Staff Report's Month-Based Flood-Risk Analysis Is Explicitly Uncertain, Bears No Relationship To Actual Yuba River Conditions Produced By Atmospheric Rivers And Does Not Seem To Analyze Its Modeled Carryover Storage Rules For New Bullards Bar Reservoir In order to attempt to analyze the flood risks that the proposed Inflow and Cold Water Habitat Objectives' implementation would have, the DSR relies on the SacWAM model, which produces only monthly average streamflow results. (DSR, pp. 7.12.1-104 to 7.12.104-115.) Even the DSR admits that this limit on SacWAMs specificity is a "limitation" on the DSR's analysis: A limitation on this analysis is that it analyzed only monthly average flows because SacWAM uses this time step. Higher flows would occur on an hourly or daily basis. (DSR, p. 7.12.1-104 (emphasis added).) This is no small limitation. The SacWAM model's monthly timestep essentially makes it impossible for that model—and therefore the DSR—to analyze how the proposed Objectives' implementation would impact management of the actual flood flows generated by atmospheric rivers. A December 2022 technical report that YWA produced with DWR, the National Oceanic and Atmospheric Administration ("NOAA"), the U.S. Army Corps of Engineers and the Scripps Institution of Oceanography described atmospheric rivers as follows: [A]tmospheric rivers (ARs) are the dominant drivers of extreme precipitation in California. ARs are potent flows of water vapor	Please see the response to comment 309-13.

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		that originate in the Pacific Ocean and make landfall along the U.S. West Coast. ARs provide up to half of the Yuba-Feather watersheds' annual water supply in the form of rain and snow, and they account for more than 98 percent of the surrounding counties' flood damages. (2022 Preliminary Viability Assessment, Yuba-Feather Forecast Informed Reservoir Operations (“2022 Preliminary Viability Assessment”), p. 5.) [Footnote 25: The cover, executive summary and cited pages of the group’s 2022 Preliminary Viability Assessment, Yuba-Feather Forecast Informed Reservoir Operations are submitted with these comments as Exhibit K [see Attachment 12]. The complete assessment is available online at https://cw3e.ucsd.edu/FIRO_docs/Yuba-Feather_PVA.pdf.] That technical report graphically depicted a “strong AR that impacted the Yuba-Feather watersheds on February 7, 2017” as follows [Attachment 1: Exhibit 6]: Five days after that event, on February 12, 2017, DWR altered local emergency managers that Oroville Dam was subject to an “imminent failure within 60 minutes” and 188,000 people were forced to evacuate. (June 1, 2023 Yuba Water Flood Risk Management Planning Study, p. 6.) [Footnote 26: This planning study is available online at https://www.yubawater.org/DocumentCenter/View/5760/Yuba-Water-Flood-Risk-Management-Plan-PDF. Copies of its cited pages are submitted with these comments as Exhibit L [Attachment 13].] The very large disparity between SacWAM’s modeled monthly average streamflows and the actual peak flows generated by atmospheric rivers that actually cause dangerous, and sometimes deadly, floods can be understood by comparing the monthly average levels of Yuba River flows on which the DSR bases its flood-risk analysis and the actual river flows that occurred during the four major floods that have occurred in the last 75 years. The DSR’s analysis of the flood risks of implementing the proposed Objectives would cause seeks to quantify those risks, in cubic feet per second (“cfs”) of Yuba River flow, are as follows [ATT 1: Exhibit 7]:	

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		In contrast, the DSR itself recognizes that Yuba River flood flows exceed by many times the above flow rates. The DSR states, “The Yuba River watershed is responsive to rain-on-snow events; during the January 1997 rain-on-snow event, instantaneous flow at Marysville reached 180,000 cfs.” (DSR, p. 2-53 (emphasis added).) YWA further documented the reality of historical Yuba River flood flows in its June 1, 2023 Yuba Water Flood Risk Management Planning Study. The following is excerpted from Table 1 from that planning study, which is entitled “Peak Rates of Flow for Four Significant Yuba County Flood Events in the 20th Century:” [ATT 1: Exhibit 8] In other words, actual Yuba River flood flows are over five times higher than the Yuba River flow levels on which the DSR bases its flood-risk analysis of the proposed Inflow and Cold Water Habitat Objectives’ implementation. The fact that the DSR admits that it cannot analyze such peak flows because the SacWAM model only operates at a monthly timestep demonstrates the inadequacy of the DSR’s analysis. It cites no technical information, documentation or other materials to support its contrary statement that, “A monthly analysis is sufficient because, if the monthly average flows during the wettest months and years do not increase, peak flows also should not increase at shorter time scales.” (DSR, p. 7.12.1-104.) In essence, that statement indicates that the DSR ascribes no importance to actually analyzing peak flood flows generated by atmospheric rivers. As the actual Yuba River maximum flow information above indicates, peak flood flows and monthly averages of maximum flows are entirely different. This point demonstrates that the DSR’s comparison of its modeled monthly averages of maximum flows versus river channel capacities is not a useful analysis. The DSR states: The Central Valley Flood Protection Plan’s 2022 Flood System Status Report shows channel capacities (current channel conveyance capacity and design flow) on rivers throughout the Central Valley (DWR 2022c). These channel capacities were	

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		reviewed and compared to maximum monthly flows from SacWAM. In almost all cases, the channel capacities are greater than the SacWAM output flows. (DSR, p. 7.12.1-110.) The 2022 Flood System Status Report, however, identifies the Yuba River's channel capacity at its mouth as "120,000+" cfs. (Central Valley Flood Protection Plan, Appendix B, p. B6, Table B-1.) That statement is consistent with YWA's identification of the Yuba River's peak flood flows as exceeding 120,000 cfs. Below that value, the river's channel theoretically can accommodate flood flows. Above that value, probably not. In contrast, the DSR's modeled "maximum monthly average flow" values are only roughly 20% of both the river's estimated capacity and the peak flows that have actually occurred during past floods. The DSR's modeled flow values, and the fact that those flow values are within the capacity of channels designed for peak flows, therefore are irrelevant for assessing whether the proposed Objectives would have any flood-risk impacts.	
309	92	[Attachment 1: Exhibit 6: Graphic described as a strong atmospheric river that impacted the Yuba-Feather watersheds on February 7, 2017]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Please refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	93	[ATT 1: Exhibit 7: Excerpt from Table 7.12.1-21, Flow and Storage Changes on Central Valley Rivers during High-Flow Months under the 55 Scenario as Simulated by SacWAM, from the 2023 Draft Staff Report]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Please refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	94	[ATT 1: Exhibit 8: Excerpt from Table titled Table 1. Peak Rates of Flow for Four Significant Yuba Couty Flood Events in the 20th Century]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Please refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	95	[Att. 1:] The key flood risk that the proposed Inflow and Cold Water Habitat Objectives' implementation would create would derive from the severely reduced flexibility that YWA would have in operating New Bullards Bar Reservoir. The SacWAM modeling reflected in the DSR indicates that, as hypothesized in that modeling, the State Board would require YWA to attempt to maintain 750,000 acre-feet in storage at the end of September	Please see the response to comment 309-13.

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		every year, which is an increase of 100,000 acre-feet over the modeled baseline operation. (DSR Appendix A1, p. A1-285 to A1-286, Figure A1-134, Table A1-279.) In other words, as modeled by the DSR, the proposed Objectives would require New Bullards Bar to enter each wet season on October 1 with 15% more water in the reservoir, with the top of the stored water being just below the legally-required flood control pool. (See Technical Memorandum #2, pp. 2-3 [see Attachment 5 of Attachment 1], Figure 1.) [Footnote 27: The 15% increase is calculated as 100,000 acre-feet more than the baseline end-of-September storage of 650,000 acre-feet. (DSR Appendix A1, p. A1-285 to A1-286, Figure A1-134, Table A1-279.)] There is, however, a reason that YWA does not fill New Bullards Bar all the way up to the bottom of its flood-control pool every year. One of the reasons that the Legislature created YWA was to address flood problems in Yuba County. (Cal. Statutes 1959, ch. 788, §§ 4.2, 26, pp. 2783, 2798.) West's Water Code Appendix §§ 84-4.2, 84-26.) Moreover, the historical flood flows referenced above caused deaths and economic devastation in Yuba County. YWA therefore takes many flood-control measures in addition to those legally required in order to control flood risks to Yuba County to the extent it can. One of these measures is to operate New Bullards Bar Reservoir so that, except during high-flow and flood events, storage does not reach the legally-required flood-control pool. This is because, as New Bullards Bar Dam currently stands, the only methods that YWA has to evacuate storage ahead of, or during, flood events do not allow it to release water fast enough to manage those events if its storage were to be maintained all the way to the flood-control pool. YWA's primary means of releasing water from New Bullards Bar is through the New Colgate penstock and powerhouse, which has a capacity of 3,430 cfs. (YWA Draft Environmental Impact Report, New Bullards Bar Dam, Atmospheric River Control (ARC) Spillway Project, SCH #2020110163 (June 2023) ("ARC Spillway DEIR") p. 2-31.) [Footnote 28: Cited excerpts of this DEIR are submitted with these comments as Exhibit M [Attachment 14].] Other than that, YWA would need to release water through New Bullards Bar Dam's existing spillway, which cannot release water until the	

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		reservoir reaches an elevation of 1,902 feet msl. (ARC Spillway DEIR, p. 2-35, Table 2-2.) Even then, New Bullards Bar's existing spillway cannot release incoming high flows of over 25,000 cfs until the water in the reservoir rises another 13 feet (to elevation 1,920 feet msl), or over 50,000 cfs until it rises another 28 feet (to elevation 1,930 feet msl). (ARC Spillway DEIR, p. 2-35, Table 2-2.) [footnote 29: Table 2-2's column "Maximum Primary Spillway and Powerhouse Release (cfs)" column depicts what releases are currently possible with YWA's existing facilities. As that column shows, those releases cannot exceed New Colgate's release capacity of 3,430 cfs until New Bullards Bar's elevation reaches 1,902 feet msl. That column also shows the elevations at which total existing release capacity can exceed 25,000 cfs and 50,000 cfs.] The New Bullards Bar 750,000 acre-foot carryover-storage requirement that the DSR's modeling hypothesizes that the State Board would impose on YWA under the proposed Objectives would interfere with YWA's ability to avoid problems associated with the existing constraints on the dam's release capacity. That hypothesized requirement apparently would compel YWA to maintain the reservoir so high going into the wet season that it might not be possible to evacuate storage space sufficiently ahead of incoming flood flows to significantly reduce downstream flood risks.	
309	96	[Att. 1:] The DSR attempts to capture something like this risk by comparing average monthly maximum storage in New Bullards Bar in the baseline and under the proposed Objectives. (DSR, pp. 7.12.1-107 to 7.21.1-114, esp. pp. 7.12.1-113, Table 7.12.1-21.) The problem with this analytical standard is that it is far too limited to capture the actual flood risks that the proposed Objectives' implementation would involve if it would involve requiring YWA to maintain New Bullards Bar carryover storage at 750,000 acre-feet at the end of September. Nowhere does the DSR explain how YWA would be allowed to operate its reservoir to attempt to control incoming flood flows after accumulating 750,000 acre-feet in storage by the end of September. Nowhere does the DSR attempt to explain how the State Board would allow YWA to operate its reservoir after a flood condition has passed. Would the State Board require YWA to refill the reservoir	Please see the response to comment 309-13.

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		to 750,000 acre-feet during the winter after drawing it down below that standard in the face of incoming flood flows? What would be the increased flood risks associated with such an operation? The DSR provides no analysis of these points at all. What it does say is not comforting. For example, in Chapter 7.12.1's flood-risk analysis, the DSR states, without support, that, "In real time, operators would manage reservoir storage and releases to eliminate an increase in flood risk." (DSR, p. 7.12.1-107.) It goes on to say: To reduce risk of flooding and provide minimal effects on low-lying lands, the proposed Plan amendments include provisions to ensure that flow requirements would not cause flows to exceed levels that could cause or contribute to flooding or other related public safety concerns. The flow requirements of the proposed Plan amendments would temporarily be reduced if they would cause flooding. As described in Chapter 5, Proposed Changes to the Bay-Delta Plan for the Sacramento/Delta, available flood space in reservoirs would be used to temporarily hold back flows that would cause flooding. The water held back in the reservoir to temporarily reduce downstream flood risk could be released later, when flood risk subsides, so that on a monthly basis the flow requirement could still be met. (DSR, p. 7.12.1-107.)	
309	97	[Att. 1:] In Chapter 5, however, the DSR states, relative to how compliance with an unimpaired flow-based requirement would be calculated under the proposed Inflow and Cold Water Habitat Objectives: The total volume of water provided during this time and on an annual basis would be required to be at least equal to the volume of water that would be provided by tracking the required unimpaired flow percentage on a 7-day average. Credit could not be provided from flood flows . . . Or other uncontrolled flows to reduce the required inflow level below what would have occurred by tracking the percent of unimpaired flow on a 7-day average.	Please see Common Response 1.3, Revised Proposed Plan Amendments, for a response to comments on the regulatory pathway implementation of the inflow objective.

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		(DSR, p. 5-20 (emphasis added)). The DSR thus is at best unclear about how the proposed Objectives would be implemented relative to actual flood flows, much less about how the State Board would seek to regulate reservoirs' operations before and after those flows occur.	
309	98	[Att. 1:] The DSR's flood-risk analysis simply fails to actually analyze the flood risks that the proposed Objectives would generate because that analysis uses analytical standards that bear no relationship to actual flood risks on the Yuba River. The monthly average streamflows that the SacWAM model is capable of producing are a small fraction of the actual Yuba River peak flood flows for which YWA must actually manage. The DSR's analysis of maximum average monthly reservoir storage at New Bullards Bar fails to even address what effects the DSR's hypothesized carryover storage requirement would have on YWA's ability to manage its reservoir over the rainy season to evacuate space to store flood flows as they arrive.	Please see the response to comment 309-13.
309	99	[Att. 1:] The Draft Staff Report Fails To Account For How The Proposed Inflow And Cold Water Habitat Objectives' Implementation Would Obstruct Yuba Water Agency's Efforts To Reduce Flood Risks Through Its Planned ARC Spillway And Planned Forecast-Informed Reservoir Operations In light of Yuba County's history of massive and deadly floods even after New Bullards Bar Dam's construction, YWA continues to investigate methods to reduce the County's flood risk. YWA's major effort involves pursuing and implementing facilities and methods to reduce the flood risks presented by atmospheric rivers, particularly in two ways. First, YWA is working with DWR, NOAA, the U.S. Army Corps of Engineers and the Scripps Institution of Oceanography to investigate the potential for implementing FIRO at New Bullards Bar. Second, YWA is well into the design and environmental review of its ARC spillway at New Bullards Bar, which would increase YWA's flexibility and capacity to manage incoming flood flows. The proposed Inflow and Cold Water Habitat Objectives' implementation would obstruct—and potentially prohibit—these methods of reducing Yuba County's flood risks, but the DSR [Draft Staff Report] does	The flow requirements of the Plan amendments would not obstruct Yuba Water Agency (YWA) efforts to reduce flood risks through the Atmospheric River Control (ARC) Spillway and Forecast-Informed Reservoir Operations (FIRO) projects. The cold water habitat objective would not require reservoir storage to violate flood control rules. The Staff Report does not include an evaluation of the effect of the Plan amendments on YWA's implementation of FIRO and of the ARC spillway because there is no clear mechanism of effect. Please see the responses to comments 309-13 and 309-90.

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		not analyze that impact at all. Implementation of FIRO and the ARC spillway would work together to reduce the flood risks faced by Yuba County and the state. In general, FIRO involves more flexible reservoir operations that are based forecasts of incoming storms to “release more water in advance of expected precipitation” and to “store more water when forecasts indicate low risk of flooding.” (2022 Preliminary Viability Assessment, Yuba-Feather Forecast Informed Reservoir Operations, p. 4 (discussing FIRO at Lake Mendocino).) [Footnote 30: Copies of cited excerpts of this document are submitted with these comments as Exhibit K [see Attachment 12].] The key question guiding YWA’s work with DWR and its other collaborators is: Can current and improved forecasts of landfalling atmospheric rivers and associated precipitation and runoff be used to inform reservoir operations at NBB [New Bullards Bar] and ORO [Oroville] dams to enhance flood risk management and water supply reliability while supporting environmental needs? (2022 Preliminary Viability Assessment, Yuba-Feather Forecast Informed Reservoir Operations, p. 6.) That group’s preliminary conclusion in December 2022 was, “This FIRO Preliminary Viability Assessment (PVA) indicates strong potential for FIRO to be a viable water management strategy for reducing flood risk in the Yuba and Feather River watersheds.” (2022 Preliminary Viability Assessment, Yuba-Feather Forecast Informed Reservoir Operations, Executive Summary p. 1.)	
309	100	[Att. 1:] YWA’s planned ARC spillway would integrate with FIRO’s implementation to enable more flexible management of New Bullards Bar Reservoir to better manage incoming flood flows. The ARC spillway will be a second spillway for New Bullards Bar Dam, with spillway gates located lower than the existing gates and a release capacity of 33,500 cfs when the reservoir’s elevation is approximately 1,921 ft msl and 61,100 cfs at normal maximum water surface elevation of approximately 1,958.5 msl. (ARC Spillway DEIR, p. ES-11.) The ARC spillway will allow YWA	Please see the response to comment 309-99.

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		to flexibly manage an additional 117,000 acre-feet of New Bullards Bar's storage capacity of approximately 966,000 acre-feet and release water from that 117,000 acre-feet of capacity before atmospheric rivers in order to make space for the incoming flood flows they can generate. (YWA fact sheet Atmospheric River Control (ARC) Spillway at New Bullards Bar Dam (June 2023).) [Footnote 31: A copy of this fact sheet is submitted with these comments as Exhibit N A copy of this fact sheet is submitted with these comments as Exhibit N.] In the Central Valley Flood Protection Plan Update – 2022 Update, DWR described the ARC spillway as follows: Yuba Water Agency (YWA) initiated the design of the new secondary spillway in 2019. This is a critical public safety initiative that will allow for implementation of FIRO for Lake Oroville and New Bullards Bar Reservoir, which would significantly reduce flood risk and improve climate change resilience for communities along the Yuba-Feather river systems. With the new spillway gates at a much lower elevation in the reservoir and new operational procedures in place, YWA will be able to release more water in advance of large storm events and reduce peak flood releases downstream. (DWR, Central Valley Flood Protection Plan Update – 2022 Update, p. 3-14.) [footnote 32: Copies of the cover page and the cited pages of this DWR document are submitted with these comments as Exhibit O [Attachment 16]. The full document is available online at https://cvfpb.ca.gov/wp-content/uploads/2022/12/Central_Valley_Flood_Protection_Plan_Update_2022_ADOPTED.pdf.] Similarly, the State Board has been aware of YWA's plan to implement the ARC spillway for years. On December 10, 2020, State Board staff submitted a letter commenting on YWA's notice of EIR preparation for the ARC spillway. [Footnote 33: A copy of this State Board letter is submitted with these comments as Exhibit P. [Attachment 17]] The DSR's cumulative impacts discussion identifies the ARC spillway as a project that could be implemented along with the proposed Inflow and Cold Water Habitat Objectives. (DSR, p. 7.23-21, Table 7.23-1.) [Footnote 34:	

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		The DSR identifies the ARC spillway as a component of the YRDP's pending FERC relicensing, describing it as "addition of an auxiliary flood control outlet at New Bullards Bar." (DSR, p. 7.23-21, Table 7.23-1.) Because the timing of the YRDP's relicensing and of YWA's potential readiness to implement the ARC spillway are not as aligned as they were when YWA filed its relicensing application with FERC, YWA now is pursuing the relicensing and the ARC spillway's implementation as separate projects.] The DSR, however, fails to consider at all the extent to which the proposed Objectives' implementation would obstruct and potentially prevent YWA's implementation of FIRO and of the ARC spillway and therefore the extent to which those proposed Objectives would have resulting flood-risk impacts in Yuba County.	
309	101	[Att. 1:] The SacWAM modeling reflected in the DSR indicates that, under the proposed Objectives, the State Board would seek to compel YWA to maintain end-of-September New Bullards Bar storage at 750,000 acre-feet in order to provide what the DSR says would be protection against increased lower Yuba River temperatures in the following year. Preliminarily, as Technical Memorandum #2 [see Attachment 5 of Attachment 1] submitted with these comments demonstrates and as discussed elsewhere in these comments, there is no technical basis for any such threshold. Moreover, the DSR does not explain what restrictions the State Board would impose on YWA in order to maintain such high New Bullards Bar storage after the end of September. YWA's pursuit of FIRO implementation—in conjunction with DWR, NOAA, USACE and others—and of the construction and operation of the ARC spillway is premised on the reality that, while New Bullards Bar Dam and Reservoir have significantly reduced flood risk in Yuba County, that risk can be reduced further, as the 1986 and 1997 floods demonstrate. As DWR's discussion in the Central Valley Flood Protection Plan Update – 2022 Update plainly explains, the method by which FIRO and the ARC spillway would advance this critical goal would be by enabling YWA to release significant amounts of water from New Bullards Bar ahead of incoming flood flows. YWA calculates this amount of water to be 117,000	Please see the response to comment 309-99. The carryover storage ranges specified in the revised proposed Plan amendments regulatory pathway are equal to or less than the carryover storage of 650 TAF associated with the VA pathway.

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		acre-feet. The DSR provides no explanation of how its hypothesized New Bullards Bar carryover storage requirement would function with YWA's plan to increase the flexibility of its facilities and operations to reduce flood risks in light of evolving understanding of atmospheric rivers and their effects. This is not a concern that is limited to the Yuba River. As DWR's Central Valley Flood Protection Plan Update – 2022 Update (p. 3-14) describes, flood control on the Yuba River is coordinated with Lake Oroville operations on the Feather River. As YWA's June 2023 Yuba Water Flood Risk Management Planning Study (p. 6) describes, the 2017 Oroville spillway disaster caused evacuation orders to be issued to “all Yuba County communities in leveed areas.” Without any explanation in the DSR about how the proposed Inflow and Cold Water Habitat Objectives would interact—or interfere—with the implementation of YWA's planned operations with the ARC spillway and FIRO, it is impossible to know what those proposed Objectives' flood-risk impacts would be. The DSR's flood-risk analysis therefore is inadequate [Footnote 35: The problems with the DSR's analysis of the flood risks that the proposed Objectives' implementation would cause do not indicate that there are problems with the DSR's analysis of the Voluntary Agreements in its Chapter 9. YWA's Voluntary Agreement proposal is built on YWA's existing operations of the YRDP. Given YWA's statutory flood-control mission, YWA would not advance that Voluntary Agreement proposal if it were to increase flood risks in Yuba County. Moreover, because that proposal involves YWA operating the YRDP to a lower end-of-September carryover-storage target and therefore leaving more storage space in New Bullards Bar Reservoir open going into each winter and available to impound potential flood flows, it does not increase flood risk].	
309	102	[Att. 1:] The Draft Staff Report Fails To Consider How Implementation Of The Proposed Inflow And Cold Water Habitat Objectives Would Increase Yuba County Flood Risks By Reducing Yuba Water Agency's Capacity To Finance Flood-Risk Reduction Projects	Please refer to Common Response 8.1, Economic Analysis and Other Considerations, for discussion of economic effects from reduced revenue from hydropower production and water sales, including discussion of Yuba Water Agency's flood-risk reduction projects.

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		As the enclosed January 10, 2024 letter from Kevin Mallen, the County of Yuba's County Administrator [see ATT 1 of ATT 1], explains, YWA has invested, since 2016, over \$58 million in flood risk reduction projects in Yuba County. As Mr. Mallen's letter also states, "To the best of [his] knowledge as the County Administrator, there is no source of funding in Yuba County, other than Yuba Water, to provide the local financial support for major projects" like those flood-risk reduction projects.	
309	103	[Att. 1:] YWA's funding sources include hydroelectric revenues; Yuba Accord water transfer revenues; and agricultural water sales to its member units. Implementation of the proposed Inflow and Cold Water Habitat Objectives likely would significantly reduce, if not eliminate, all of these revenue sources. As discussed elsewhere in these comments, YWA's New Colgate powerhouse, which is YWA's largest powerhouse and which provides very valuable peaking generation, would be the powerhouse most significantly impacted by the proposed Objectives' implementation, with those impacts being very disproportionate relative to all other powerhouses analyzed by the DSR (DSR, p. 7.8-26, Figure 7.8-14; DSR Appendix A5, pp. A5-29 to A5-31, Figures A5-16 to A5-20). YWA's hydroelectric revenues therefore would be reduced significantly.	Please see Common Response 8.1, Economic Analysis and Other Considerations, for a discussion of the economic effects from reduced revenue from hydropower production and water sales and Yuba Water Agency. Also see Common Response 7.8, Energy and Hydropower, for a detailed discussion on Colgate Powerhouse and Yuba Water Agency.
309	104	[Att. 1:] YWA's [Yuba Water Agency's] funding sources include hydroelectric revenues; Yuba Accord water transfer revenues; and agricultural water sales to its member units. Implementation of the proposed Inflow and Cold Water Habitat Objectives likely would significantly reduce, if not eliminate, all of these revenue sources. As discussed elsewhere in these comments: As the enclosed Technical Memorandum #2 [see Att. 5 of ATT 1] explains, the proposed Objectives' implementation would eliminate Yuba Accord transfers and therefore the resulting revenues to YWA.	Please see response to Comment 309-103.
309	105	[Att. 1:] YWA's funding sources include hydroelectric revenues; Yuba Accord water transfer revenues; and agricultural water sales to its member units. Implementation of the proposed Inflow and Cold Water Habitat Objectives likely would	Please see response to Comment 309-103 regarding potential effect on YWA's revenues from agricultural water sales to its member units.

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		significantly reduce, if not eliminate, all of these revenue sources. As discussed elsewhere in these comments: As the enclosed Technical Memorandum #2 [see Att. 5 of ATT 1] also explains, the proposed Objectives' implementation also would compel YWA to impose significantly increased shortages on its agricultural deliveries to its member units. This would reduce YWA's revenues from those deliveries.	
309	106	[Att. 1:] As a result of each of these impacts [see previous 3 comments] of the proposed Objectives' implementation on YWA and its operations, YWA's capacity to continue to be the sole local financial support for flood-risk reduction projects in Yuba County would be significantly reduced. The DSR does not analyze the financial impacts of the proposed Objectives' implementation on YWA at all, much less on YWA's ability to fund local flood-risk reduction measures. (See, e.g., DSR, pp. 8-110 to 8-111 (DSR's complete discussion of proposed Objectives' economic impact on hydroelectric generation statewide).) Economic changes, however, must be addressed under CEQA if they will cause changes in the physical environment. (CEQA Guidelines § 15131.) That is the case here, but the DSR does not address the proposed Objectives' indirect generation of significant flood risks through the likely reductions in YWA's revenues that they would case. For the many reasons discussed above, the DSR's analysis of the impacts of the proposed Objectives' implementation on flood risks in Yuba County therefore is inadequate.	The Staff Report includes an extensive environmental and economic analysis. The Staff Report's analysis of environmental impacts and economic effects is appropriate for the large scope of the project and wide range of possible response actions. Chapter 8, Economic Analysis and Other Considerations, analyzes the economic effects of changes in hydrology and water supply under the proposed Plan amendments on agricultural and municipal use. In addition, Chapter 8, Economic Analysis and Other Considerations, considers other economic effects that could occur as a result of the Sacramento/Delta update to the Bay-Delta Plan, including to energy production. Section 8.6.5, Energy, in the 2023 draft Staff Report appropriately discloses that changes in the timing of hydropower generation, including an increase of hydropower generation in the spring and a decrease in summer, could affect hydropower generation revenues. Evaluation of environmental impact arising from the reduction in funding would require inappropriate speculation. Please see Common Response 8.1, Economic Analysis and Other Considerations, for a discussion of economic effects from reduced revenue from hydropower production and water sales, including discussion of Yuba Water Agency's sources of revenue and funding for flood risk reduction projects. Also see Common Response 8.1 for regulatory context including a discussion of the level and scope of the analysis.
309	107	[Att. 1:] The Draft Staff Report Fails To Adequately Analyze The Proposed Inflow And Cold Water Habitat Objectives' Impacts To Yuba County Agriculture Because It Combines The County With Nearby Areas That Use Very Different Water Supplies And Fails To Consider Yuba County's Distinct History Of Groundwater	The Staff Report uses a reasonable and conservative approach to evaluating the potential agricultural impacts and agricultural economic effects, including effect on rice production, of the flow scenarios. The analysis of potential changes in crop acreage presented in Section 7.4, Agriculture and Forest Resources, and

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		Usage As NCWA states in its comments, which YWA incorporates, the DSR fails to adequately analyze the proposed Inflow and Cold Water Habitat Objectives' impacts on agriculture in the Sacramento River watershed because: The DSR combines its analysis of agricultural impacts in the watershed with other areas where rice is not the dominant crop. The SWAP model on which the DSR relies does not consider reductions in water supplies for rice decomposition. The SWAP model fails to consider impacts in multi-year droughts or even specifically in critical water years.	potential changes in crop revenue presented in Chapter 8, Economic Analysis and Other Considerations, include estimates obtained from the SWAP model. SWAP is currently the best available tool for modeling agricultural economic responses to water supply shortage. It has been peer-reviewed and applied to numerous policy analyses and impact assessments over the last two decades. Section 7.4.2, Environmental Setting, discusses that within the Sacramento Valley, rice is the leading crop in terms of acreage. Rice is strongly associated with the Sacramento River watershed. The SWAP results presented in Staff Report Section 7.4, Agriculture and Forest Resources, and Chapter 8, Economic Analysis and Other Considerations, estimate that if groundwater is not used to offset Sacramento/Delta surface water supply reductions, crop acres primarily decline in alfalfa and pasture and rice in the Sacramento/Delta watershed. The effects on rice production are adequately evaluated and disclosed in the Staff Report, and the presentation of SWAP model results at the Sacramento/Delta watershed level within Section 7.4 and Chapter 8 sufficiently captures the potential impacts and economic effects. In addition, Appendix A3, Agricultural Economic Analysis: SWAP Methodology and Modeling Results, presents SWAP modeling results at a finer level of detail, and provides results for the SWAP production regions within the Sacramento/Delta and San Joaquin Valley. Please see Common Response 7.4, Agricultural Resources, for discussion related to water supply for rice straw decomposition. Please see the response to comment 309-77 for a discussion on supplemental SWAP results that were conducted for: (1) critically dry water years; and (2) the driest water year (1977) intended to represent the last year of a multi-year drought.
309	108	[Att. 1:] The DSR's analysis of the proposed Inflow and Cold Water Habitat Objectives' agricultural impacts also is inadequate for at least the following reasons specific to Yuba County: The SWAP mode improperly combines Yuba County, which relies primarily on surface-water supplies delivered by YWA, with	The Staff Report appropriately evaluates agricultural impacts that would occur under the flow scenarios, and provides estimates of changes in crop acreage using the best available information. The analysis provided in the Staff Report is appropriately detailed for the scope of the project. SWAP is currently the best available tool for modeling agricultural

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		nearby areas served by other water supplies that may be affected quite differently by the proposed Objectives, including areas served under the State Water Project's ("SWP") Feather River settlement contracts. Yuba County's distinct history of groundwater use causes the DSR's analysis of a "maximum replacement" water-supply scenario to bear no relationship to what may happen in the county under the proposed Objectives.	economic responses to water supply shortage. It has been peer-reviewed and applied to numerous policy analyses and impact assessments over the last two decades. As discussed in Section 7.4, Agriculture and Forest Resources, SWAP is a regional agricultural and economic optimization model that estimates growers' responses to changes in water supply by determining the cropping pattern that maximizes the net returns to agricultural production for 27 production regions within the Central Valley. Estimates of surface water deliveries to growers within the Sacramento/Delta are provided by SacWAM in sufficient detail that the output can be directly mapped into the SWAP production regions. Regions 1 through 9 are in the Sacramento/Delta, and Regions 10 through 21C are in the San Joaquin Valley. Detailed SWAP results for all 27 production regions within the Sacramento/Delta watershed and San Joaquin Valley are provided in Appendix A3, Agricultural Economic Analysis: SWAP Methodology and Modeling Results, including for SWAP production region 5 that contains YWA's service area. Please see Common Response 7.1, General CEQA and Approach to the Analysis, for further discussion of the level and scope of the analysis. See the response to comment 309-77 for discussion on the groundwater pumping bookends included in the SWAP analysis.
309	109	[Att. 1:] The SWAP model's problems in depicting the impacts that implementing the proposed Inflow and Cold Water Habitat Objectives would have on Yuba County agriculture do not result in the DSR's Chapter 9 analysis of the proposed Voluntary Agreements being inadequate. YWA's Voluntary Agreement proposal is built on YWA's existing operations of the YRDP and therefore YWA's existing level of agricultural water supply deliveries. That proposal involves a proposed contribution to Bay-Delta flows that YWA can make in some water-year types consistent with existing levels of agricultural demands in Yuba County. The SWAP model's issues therefore do not cause any of its results on which the DSR's Chapter 9 relies to understate, or misstate, the impacts of the Voluntary Agreements on Yuba County agriculture.	Chapter 9, Proposed Voluntary Agreements, utilizes the same conservative approach to the analysis, however, the cold water habitat objective and numeric inflow requirements would not apply to water rights listed in Appendix B.1 of the revised proposed Plan amendments, for the term of the VA pathway; therefore, the reduction to Sacramento/Delta surface water supply would be much less. Please see the response to comment 309-108 for further discussion on the approach used in the SWAP analysis.

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309	110	[Att. 1:] The SWAP Model Improperly Analyzes YWA's Yuba County Service Area Together With Nearby Areas Served From The Feather River, Mostly By The State Water Project The DSR's agricultural analysis relies on the SWAP model to analyze the proposed Inflow and Cold Water Habitat Objectives' impacts on agriculture on the Central Valley floor. (DSR, p. 7.4-34.) The SWAP model breaks the Central Valley into "28 production regions," with "Regions 1 through 9 [being] in the Sacramento/Delta." (DSR, p. 7.4-35.) The DSR itself does not describe those separate production regions. For example, the DSR's page 7.4-35 refers to "Figure 7.4-5" as depicting "the geographic extent of the SWAP model production region boundaries," but that figure just depicts the outer boundaries of the combined SWAP-model area and does not depict the boundaries of each "production region." The DSR's Appendix A3, however, does provide somewhat more detailed information. Appendix A3 states that the "SWAP production region boundaries" were aligned with the SacWAM hydrologic model's "water budget areas" (or "WBAs") so that SacWAM hydrology results could feed into the SWAP model's agricultural analysis. (DSR Appendix A3, pp. A3-5 to A3-6.) The problem, however, is that even Appendix A3 does not clearly describe where Yuba County fits within the "production region boundaries" or the "water budget areas." Appendix A3, Table A3-2 just describes, by number, which "SacWAM water budget areas" are within which "SWAP production region." (DSR Appendix A3, p. A3-6.) Table A3-3 lists "Water User Examples" by "SWAP Production Regions," but nothing in that table indicates where water users who receive water from YWA are located. The only useful information along these lines appears to be in the State Board's September 2023 SacWAM documentation, which does not appear to actually be a part of the DSR. That documentation's Table 4-2 indicates that the water districts to which YWA delivers water are in the SacWAM model's "water budget areas" 14_15N and 15S. (SacWAM documentation, p. 4-7.) That table also indicates, however, that those water budget areas also include water users who are in the "Feather River Service Area" served by DWR via Lake Oroville and the Feather River	Please see the response to comment 309-108. In addition, the Staff Report provides sufficient description of the geographic location of each of the SWAP production regions, and includes additional description beyond the information provided in Table A3-3. For example, Figure A3-2 in Appendix A3, Agricultural Economic Analysis: SWAP Methodology and Modeling Results, is a map of the study area that depicts the boundaries of each SWAP production region.

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		under SWP settlement agreements. (SacWAM document, pp. xxii, 3-17; 4-2; 4-7, Table 4-2.) Based on the identification of YWA's service area as being within water budget areas 14_15N and 15S, however, it appears to be possible to identify that service area as being in the SWAP model's production region 5, along with production regions 10, 11, 12, 13, 16, 17N and 17S. (See DSR Appendix A3, p. A3-5, Table A3-2.) A critical problem with this complex structure for analyzing the proposed Inflow and Cold Water Habitat Objectives' agricultural impacts is that the structure makes it impossible to understand how those objectives would impact agriculture within YWA's service area. [footnote 37: The fact that it is necessary to sort through what is essentially an appendix to an appendix to the DSR to piece together the relevant information in itself causes the DSR to violate CEQA. (See Vineyard, supra, 40 Cal. 4th, at p. 442 (a CEQA document may not scatter key information here and there and bury it in appendices).)]	
309	111a	[Att. 1:] As the State Board has recognized, the areas served with Yuba River water have unique histories of water use. To the north of the Yuba River, areas within YWA's service area have had such reliable surface-water supplies historically that there has been relatively little groundwater pumping. (State Board Revised Decision 1644, p. 10 (2003) ("Because of sufficient surface water supplies, significant groundwater pumping capacity has not been developed to meet irrigation demands in the Yuba-North Basin").) To the south of the Yuba River, a lack of access to Yuba River water historically led to significant groundwater declines before YWA began delivering that surface water in the mid-1980s, after which groundwater levels rebounded. (State Board Revised Decision 1644, pp. 10-12 (2003).) YWA's 2019 groundwater sustainability plan, as approved by DWR, also documents these unique trends within Yuba County. (Yuba Subbasins Water Management Plan: A Groundwater Sustainability Plan, pp. 2-91 to 2-95 (Dec. 2019).) [footnote 38: Referenced excerpts of YWA's GSP are submitted with these comments as Exhibit F [see Attachment 7].] In contrast, as the SacWAM documentation states, DWR has signed settlement agreements with districts in "the Feather River Service Area (FRSA) associated with the operation of Lake	The analysis provided in the Staff Report is appropriately detailed for the scope of the project. Please see the response to comment 309-108 for an explanation on appropriateness of the geographic scope and level analyzed using the SWAP model. Impacts on groundwater levels are appropriately evaluated in Section 7.12.2, Groundwater. Please see the response to comment 309-77 for a discussion of the analysis of groundwater impacts, and information on the two groundwater pumping bookends (maximum replacement groundwater pumping and no replacement groundwater pumping) evaluated in the SWAP analysis.

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		Oroville” and also makes water available to other diverters who “hold water rights senior to the SWP for Feather River water.” (SacWAM documentation, p. 3-17.) That documentation states that those areas are “represented in SacWAM by portions of WBAs [water budget areas] 11, 12, and 16.” (SacWAM documentation, p. 3-17.) That means that, per Table A3-2 in the DSR’s Appendix A3, those places in the FRSA are combined with YWA’s service area in the SWAP model, even though their water supplies are very different. It therefore does not appear to possible to tease from anything associated with the DSR what the proposed Inflow and Cold Water Habitat Objectives’ impacts on Yuba County agriculture would be as a function of those Objectives’ impacts on YWA’s agricultural water supplies. The information that is present in the DSR, however, suggests that impacts on YWA’s agricultural water supplies will be very different than the water supplies that the SWP can provide under the proposed Objectives. Preliminarily, the DSR suggests that one of the purposes of the proposed Objectives is to require water users other than the SWP and the Central Valley Project to contribute to maintaining Delta outflows. (DSR, pp. 5-13 to 5-14, 5-57.) [footnote 39: On page 5-57, the DSR states, “The proposed Plan amendments would broaden the responsibility for meeting the proposed Plan amendments beyond the SWP and CVP based on water right priorities.”] That suggests that the proposed Objectives are intended to have different effects on the SWP’s supplies and YWA’s supplies. Such disproportionate impacts to YWA’s agricultural water supplies would have disproportionate impacts to Yuba County agriculture relative to nearby areas served with other surface-water supplies. However, because the SWAP model aggregates areas in Yuba County that YWA serves with Yuba River water together with areas served by other supplies, it is impossible to understand from the DSR how the proposed Inflow and Cold Water Habitat Objectives would impact Yuba County agriculture. As a result, the DSR’s analysis of those proposed Objectives’ agricultural impacts is inadequate.	
309	111b	Preliminarily, the DSR suggests that one of the purposes of the proposed Objectives is to require water users other than the	Please see Common Response 7.8, Energy and Hydropower, regarding effects of changes in hydrology on hydropower

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		SWP and the Central Valley Project to contribute to maintaining Delta outflows. (DSR, pp. 5-13 to 5-14, 5-57.) [footnote 39: On page 5-57, the DSR states, “The proposed Plan amendments would broaden the responsibility for meeting the proposed Plan amendments beyond the SWP and CVP based on water right priorities.”] That suggests that the proposed Objectives are intended to have different effects on the SWP’s supplies and YWA’s supplies. Moreover, the DSR’s energy analysis clearly shows that YWA’s New Colgate powerhouse would be—by far—the most impacted of any “Sacramento/Delta” powerhouse in terms of hydroelectric generation. (DSR, p. 7.8-26, Figure 7.8-14; see also DSR Appendix A5, pp. A5-30, Figures A5-18.) New Colgate’s generation would be much more impacted than DWR’s generation at the SWP’s Hyatt powerhouse at Lake Oroville, even though Hyatt is much larger. As the DSR states, the reservoir releases that generate hydroelectricity often are incidental to releases for water supplies. (DSR, pp. 7.8-8, 7.8-11.) The highly disproportionate impacts that New Colgate generation would suffer under the proposed Inflow and Cold Water Habitat Objectives thus appear to indicate that YWA’s agricultural water supplies also would be disproportionately impacted, particularly relative to the SWP’s Feather River supplies.	generation at Colgate Powerhouse. Please also see the response to comment 309-74 regarding the evaluation of agricultural water supply.
309	112	[Att. 1:] The DSR’s Agricultural-Impact Analysis Is Inadequate Because The “Maximum Replacement” Scenario Analyzed By The SWAP Model Does Not Reflect The Unique History Of Groundwater Use In Yuba County The DSR’s analysis produces asserted bookends of the proposed Inflow and Cold Water Habitat Objectives’ agricultural impacts by analyzing them in a “no replacement” scenario with no increases in groundwater pumping to substitute for reductions in surface-water supplies and a “maximum replacement” scenario that does involve such pumping. (DSR, p. 7.4-37.) The DSR describes the “maximum replacement” scenario as follows: Under maximum replacement groundwater pumping, it was assumed that growers could use groundwater in addition to local water supplies to offset some or all Sacramento/Delta supply	Impacts on groundwater levels resulting from changes in Sacramento/Delta surface water supplies are appropriately evaluated in Section 7.12.2, Groundwater. As discussed in Section 7.12.2 and in Section 7.4, Agriculture and Forest Resources, the analysis considers the potential for some water users to choose to replace Sacramento/Delta surface water supply reductions with groundwater. As described in Section 7.4.3, Impact Analysis, of the 2023 draft Staff Report, due to uncertainties about groundwater availability and individual grower’s response to the reductions in surface water, two bookends of groundwater pumping level are evaluated: maximum replacement groundwater pumping, and no replacement groundwater pumping. Under maximum replacement groundwater pumping, it is assumed that groundwater would replace Sacramento/Delta surface water

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		reductions. Importantly, this is not a directive that farmers and ranchers should or would replace Sacramento/ Delta reductions with groundwater pumping, especially in light of requirements to achieve sustainability in basins subject to SGMA, but a good faith attempt to capture the potential maximum impacts on the groundwater basin from replacement pumping. (DSR, p. 7.4-37.) The DSR, however, caps groundwater pumping under the “maximum replacement” scenario: The maximum amount of groundwater pumping allowed for the maximum replacement groundwater bookend was capped at the highest annual pumping levels within each SWAP region as estimated by SacWAM over the 1923 through 2015 SacWAM hydrologic period (DSR, p. 7.4-37.) This cap causes the DSR’s “maximum replacement” scenario to bear little relationship to the groundwater pumping that could occur under the proposed Inflow and Cold Water Habitat Objectives in Yuba County or, more broadly, in the SWAP model’s production region 5. That cap is not justifiable for Yuba County because, as the State Board recognized in Revised Decision 1644, northern Yuba County’s historically sufficient Yuba River supplies have not necessitated significant groundwater pumping for agriculture. (State Board Revised Decision 1644, p. 10 (2003).) Implementation of the proposed Objectives therefore very likely would cause Yuba County farmers to seek to pump levels of groundwater that are higher than anything that occurred during the SacWAM model’s 1923-2015 period of record. Similarly, in the rest of the SWAP model’s production region 5 and as the State Board’s SacWAM documentation explains,	supply reductions when economically feasible to do so, and subject to existing groundwater infrastructure limits. This is an appropriate upper bound assumption for the analysis, and it would be highly speculative to use a different groundwater limit for the maximum replacement groundwater pumping bookend. The commenter did not suggest a specific alternative groundwater pumping level under the maximum replacement pumping bookend. The analysis in Section 7.12.2, Groundwater, conservatively concludes that impacts to groundwater could be potentially significant. Please see the response to comment 309-108 for an explanation of the appropriateness of the geographic scope and level analyzed using the SWAP model.

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		numerous Feather River diverters hold water rights or settlement agreements with DWR that are based on historically sufficient surface-water diversions. (SacWAM documentation, p. 3-17.) As with northern Yuba County, there presumably has been relatively little need for groundwater pumping historically in these areas. The levels of groundwater pumping that implementation of the proposed Objectives could trigger throughout SWAP production region 5 therefore may bear little, if any, relationship to historical groundwater pumping. The DSR's use of a historically-based cap on groundwater pumping in those areas may have little justification. Other areas in the Sacramento River watershed, including the service areas of the Sacramento River settlement contractors, may present similar conditions that make the DSR's cap on groundwater pumping in the "maximum replacement" scenario untenable in those areas, too. The fact that the DSR caps pumping in the "maximum replacement" scenario at modeled historical maximums causes that scenario to be unsupported by evidence and not sufficient to disclose the proposed Objectives' impacts on Yuba County agriculture. That cap also may be, for similar reasons, unsupported by evidence for agriculture in the SWAP model's production region 5 and other large areas of the Sacramento River watershed.	
309	113	[Att. 1:] The Draft Staff Report Inadequately Analyzes The Impacts That The Proposed Inflow And Cold Water Habitat Objectives' Implementation Would Have On Yuba County's Disadvantaged Communities As the DSR recognizes, "Economically disadvantaged communities account for more than 50 percent of all communities in . . . Yuba Count[y]." (DSR, p. 2-127.) In its June 1, 2023 Yuba Water Flood Risk Management Planning Study, YWA documented the disadvantaged status of Yuba County's communities in more detail: Median household income is \$58,054, less than 80 percent of the State level. As of 2019, the County's poverty rate and unemployment rate were both more than two points higher than the State level. These indicators qualify the County as both a	The Staff Report adequately evaluates impacts related to flood risk and specifically includes a flood risk analysis in Section 7.12.1, Hydrology and Water Quality - Surface Water. As discussed in Section 7.12.1, flood risk would increase only if flows or storage levels increased in the highest flow months, or if flows in other months increased above the levels in the highest flow months. On the Yuba River, the SacWAM results show that any increases in the top 10 percent of monthly flows under the 45 and 55 scenarios would be relatively minor, and no increase in flood risk is expected in the Yuba River. Please see Table 7.12.1-21 to see flow and storage changes during high-flow months under the 55 scenario as simulated by SacWAM. In addition, under the revised proposed Plan amendments, the required percentage of unimpaired flow does not apply to an individual tributary during periods when flows from that tributary could cause or contribute to flooding or other related

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		disadvantaged community and an economically distressed area . The California Department of Water Resources uses the definition of disadvantaged community (DAC) (found in Water Code Section 79505.5(a), that is, a community with a median household income (MHI) less than 80 percent of the statewide MHI to determine eligibility for certain types of funding. A severely disadvantaged community (SDAC) is one with an annual MHI less than 60 percent of the statewide MHI . . . Marysville, Linda, Olivehurst, and Beale Air Force Base meet the DAC/SDAC threshold at both spatial scales [tract scale and place scale]. (Yuba Water Flood Risk Management Planning Study (June 2023), pp. 18-20.) [footnote 40: Copies of cited pages of this study are submitted with these comments as Exhibit L [Attachment 13].] Many of these communities either flooded, or have been significantly impacted, during past floods. In 1986: [T]he Yuba River south levee failed east of the E Street bridge and inundated the communities of Linda and Olivehurst forcing 24,000 people to evacuate (hundreds of people who could not evacuate in time had to be rescued from rooftops by boat and helicopter). One died as a result of the flooding . . . 11,000 people were unable to return to their homes due to the number of homes damaged or destroyed by the flood. (Yuba Water Flood Risk Management Planning Study (June 2023), p. 5.) In 1997: The Feather River east levee failed near Arboga inundating approximately 16,000 acres and forcing the evacuation of 15,000 people from Linda and Olivehurst. More than 800 homes were flooded and three people died. Nearby residents of Yuba City, Marysville, and surrounding communities were evacuated due to fears of additional levee breaks.	public safety concerns, as determined by the State Water Board or Executive Director through consultation with federal, state, and local agencies and other entities with expertise in flood management. Please see Common Response 10.1, Economically Disadvantaged Communities, for responses to water provider comments and DACs. Also see Common Response 8.1, Economic Analysis and Other Considerations, for discussion of economic effects to Yuba Water Agency from reduced revenue from hydropower production and water sales.

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		(Yuba Water Flood Risk Management Planning Study, p. 5 (June 2023).) During the 2017 Oroville spillway disaster: Evacuation orders were issued for all downstream communities along the Feather River, including all Yuba County communities in leveed areas. In total, evacuation of 188,000 downstream residents was ordered. (Yuba Water Flood Risk Management Planning Study, p. 6 (June 2023).) Despite the clear linkage between these risks and realities of floods in Yuba County, and the economic disadvantages faced by the County's communities, the DSR's chapter that addresses the impacts of the Inflow and Cold Water Habitat Objectives on economically disadvantaged communities—Chapter 10—does not even discuss impacts from flood risks that those Objectives' implementation would generate. The DSR's chapter on the proposed Objectives' economic impacts—Chapter 8—also does not discuss such impacts. The proposed Objectives' implementation would increase flood risks in Yuba County by both significantly constraining YWA's operations of New Bullards Bar Dam and Reservoir and by significantly reducing the revenues that YWA can use as the sole local sponsor for flood risk reduction projects.	
309	114	[Att. 1:] The proposed Objectives' impacts on YWA's [Yuba Water Agency] revenues also would impact Yuba County's economically disadvantaged communities because YWA's ability to continue to support local water-related projects would be at least reduced. As the enclosed letter from Kevin Mallen [see ATT 1 of ATT 1], the County of Yuba's County Administrator describes, YWA has provided tens of millions of dollars in grants and low-cost loans to support projects in the County's communities and is the only local source for such funding. This reduction in local funding would directly and adversely impact the County's economically	Please see Common Response 10.1, Economically Disadvantaged Communities, for responses to water provider comments and DACs. Also see Common Response 8.1, Economic Analysis and Other Considerations, for discussion of economic effects to Yuba Water Agency from reduced revenue from hydropower production and water sales.

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		disadvantaged communities, but the DSR does not analyze this impact at all.	
309	115	[Att. 1:] Finally, the proposed Objectives' implementation would further impact those communities because it would impact agriculture, the most significant driver of Yuba County's economy. Implementation of the proposed Objectives would reduce the surface-water supplies that YWA can deliver to Yuba County farmers, who likely would pump more groundwater as a result. To the extent that this shift would impact Yuba County farmers' costs and their production, that would impact the economic yield of the County's farms and therefore the economic base of the County's already disadvantaged and severely disadvantaged communities. The DSR's discussion of the proposed Objectives' impacts on such communities, in its Chapter 10, does not discuss such impacts at all. While the DSR's economics chapter, Chapter 8, does discuss the impacts on economically disadvantaged communities of reduced agricultural production driven by the proposed Objectives' implementation, that discussion consumes all of three pages and only generally discusses the impacts across all regions whose water supplies would be reduced. (DSR, pp. 8-87 to 8-89.) Moreover, that discussion is based on inputs from the SWAP model. (DSR, p. 8-88.) [footnote 41: At page 8-88, the DSR states, "IMPLAN model results from the California Statewide Economy analysis are presented below and provide employment information relevant to agricultural economic effects on DACs. The SWAP agricultural model results are used as input to IMPLAN. Results for changes in number of agriculture related jobs are presented below.] As discussed in NCWA's comments, the SWAP model's analysis of the proposed Objectives' agricultural impacts is inadequate, especially for the Sacramento River watershed and Yuba County. That model does not adequately account for rice's dominant role in the Sacramento River watershed, explicitly ignores the impacts of reduced supplies for rice decomposition and groups Yuba County together with nearby areas that have very different water supplies. In summary, the DSR does not adequately analyze the proposed	The Staff Report's analysis of environmental impacts and economic effects is appropriate for the large scope of the project and wide range of possible response actions. See Common Response 7.1, General CEQA and Approach to the Analysis, for additional information on the level and scope of the analysis. The Staff Report uses a reasonable and conservative approach to evaluating the potential agricultural impacts and agricultural economic effects of the flow scenarios, including to rice production. The analysis of potential changes in crop acreage presented in Section 7.4, Agriculture and Forest Resources, and potential changes in crop revenue presented in Chapter 8, Economic Analysis and Other Considerations, include estimates obtained from the SWAP model. SWAP is currently the best available tool for modeling agricultural economic responses to water supply shortage. It has been peer-reviewed and applied to numerous policy analyses and impact assessments over the last two decades. Section 7.4.2.6, Sacramento River Watershed, discusses the timing of water delivery for crops in the Sacramento River watershed, including flooding in the spring so that rice straw can decompose, and the timing of those water deliveries reflected in the model output. Please see Common Response 7.4, Agricultural Resources, for information on water supply for rice straw decomposition and additional techniques available to farmers for straw removal. See Chapter 8, Economic Analysis and Other Considerations, and Appendix A4, Regional Economic Analysis Modeling Procedure, for a description of the IMPLAN model and results of the IMPLAN modeling for the Sacramento/Delta watershed. See Chapter 8 and Appendix A3, Agricultural Economic Analysis: SWAP Methodology and Modeling Results, for a detailed description of the SWAP model.

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		Objectives' impacts on Yuba County's economically disadvantaged communities.	
309	116	[Att. 1:] Based On Its Experience As A Transferor, Yuba Water Agency's Review Of The Draft Staff Report's Supporting Modeling Indicates That There Is No Support For The Idea That Water Transfers Would Mitigate The Proposed Inflow And Cold Water Habitat Objectives' Impacts In the DSR's discussions of water-supply impacts and of several resource categories, it states that water transfers will be a mitigation measure that will reduce adverse impacts that the proposed Inflow and Cold Water Habitat Objectives' implementation would have. (DSR, pp. 6-82 to 6-90, 7.4-98 (agriculture), 7.6.1-89 (terrestrial biology), 7.6.2-106 (aquatic biology), 7.8-41 (energy), 7.12.1-118 (surface-water hydrology), 7.12.2-67 (groundwater hydrology), 7.20-5 (utilities [municipal water supplies]), 8-61 (economics: "[O]ther water management actions could also be used to offset surface water supply reductions including . . . water transfers . . .").) Based on YWA's experience as a transferor of water, and YWA's review of the SacWAM modeling reflected in the DSR, there is no support for the idea that water transfers will be a feasible means of mitigating any impacts of the proposed Objectives' implementation.	Please refer to the response to comment 309-9.
309	117	[Att. 1:] The Draft Staff Report's Water-Supply Mitigation Measures Are Inadequate Because They Are Inappropriately Vague And State No Performance Standards Preliminarily, the DSR's above-referenced mitigation measures stated in several resource categories do not satisfy CEQA, which shows that the DSR does not provide adequate CEQA coverage for the State Board to adopt the proposed Inflow and Cold Water Habitat Objectives. A CEQA document does not have to fully define mitigation measures, but, if that document cannot fully define mitigation measures due to, for example, a lack of available information, those measures must at least state "specific performance criteria" for their implementation. (Endangered Habitats League, Inc. v. County of Orange (2005) 131 Cal.App.4th 777, 793.) Mitigation measures are not meant to be "mere expressions of hope." (Golden Door Properties, LLC v.	Please see Common Response 7.1, General CEQA and Approach to the Analysis, regarding the adequacy of the mitigation measures. To the extent this comment incorporates other comments by reference, please refer to the responses to those comment letters.

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		County of San Diego (2020) 50 Cal. App. 5th 467, 506.) Nowhere in the DSR's proposed mitigation measures for the proposed Inflow and Cold Water Habitat Objectives' water-supply impacts does the DSR provide any definition to those measures or even any estimate of the amount of replacement water supply that those measures would produce. (DSR, pp. 7.4-54, 7.4-75, 7.4-89 to 7.4-92, 7.4-98, 7.6.1-89, 7.6.2-99, to 7.6.2-100, 7.6.2-106, 7.8-40 to 7.8-41, 7.12.1-118, 7.12.2-45, 7.12.2-48, 7.12.2-50, 7.12.2-63, 7.12.2-67, 7.20-5, 7.20-30, 7.20-46, 8-32, 8-61.) For example, the DSR's rote recitation of "Diversify Water Portfolios" as a mitigation measure in multiple resource categories does little more than generally describe what those measures might be. (DSR, pp. 6-82, 6-96, 7.4-98, 7.6.1-89, 7.6.2-106, 7.8-41, 7.12.1-118, 7.12.2-67, 7.20-5.) The DSR's mitigation measures for the proposed Inflow and Cold Water Habitat Objectives' water supply impacts therefore do not comply with CEQA and the DSR in turn cannot provide adequate CEQA coverage for the State Board to adopt those proposed Objectives. YWA also incorporates by reference the more detailed comments on this point submitted by NCWA.	
309	118	[Att. 1:] YWA's Review Of The Draft Staff Report, And Experience As A Transferor Of Water, Indicates That There Is No Support For The Draft Staff Report's Identification Of Water Transfers As An Effective Mitigation Measure For The Proposed Inflow And Cold Water Habitat Objectives' Impacts CEQA mitigation measures must be feasible and an agency's finding that they are feasible must be supported by at least substantial evidence. (Public Resources Code § 21002; CEQA Guidelines § 15126.4, subd. (a)(1); King & Gardiner Farms, LLC v. County of Kern (2020) 45 Cal.App.5th 814, 866.) CEQA defines "feasible" as meaning "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors." (Public Resources Code § 21061.1.) An agency's certification of a CEQA document constitutes an improper deferral of mitigation if the document's asserted mitigation measures just state "a generalized goal" for mitigation. (POET, LLC v. State Air Resources Bd. (2013) 218 Cal.App.4th 681, 738	Contrary to the commenter's assertion, the 2023 draft Staff Report does not explicitly categorize water transfers as a mitigation measure for impacts attributable to implementation of the proposed inflow and cold water habitat objectives. Rather, water transfers are identified in Chapter 6, Changes in Hydrology and Water Supply, as one of a diversified suite of other feasible water management actions that may be used to offset reductions in Sacramento/Delta surface water supply. Many such water management actions are already being implemented in response to increasing water scarcity. Section 6.6, Other Water Management Actions, of the 2023 draft Staff Report also includes a discussion of information from water management plans regarding future use of other supplies in each of the geographic regions that would be affected by the proposed Plan amendments and provides general information on how each region may respond to reduced Sacramento/Delta surface water supplies, including the use of water transfers. Water transfers may be utilized to offset reductions in Sacramento/Delta surface supply because, in many cases, they are feasible. However, the

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		(Air Resources Board’s adoption of inadequate mitigation for low carbon fuel standards regulation); King & Gardiner Farms, supra, 45 Cal.App.5th, at pp. 856-858.) Based on YWA’s review of the DSR, and its extensive experience with water transfers, nothing supports the DSR’s repeated assertions that water transfers will mitigate impacts of the proposed Inflow and Cold Water Habitat Objectives. YWA’s extensive experience as a transferor is well-documented, including by materials on which the DSR relies. The DSR cites the Public Policy Institute of California’s (“PPIC”) 2012 report California’s Water Market, by the Numbers: Update 2012 for much of the background information it cites concerning water transfers. (DSR, pp. 6-87 to 6-89, 6-110.) For example, the DSR relies on that 2012 PPIC report for its statement that “water transfer volumes” of “both temporary and permanent transfers” have “grown . . . In recent decades.” (DSR, p. 6-87.) That 2012 PPIC report identifies the fact that YWA’s Yuba River Accord is one of the two long-term transfers that, during the 2003-2011 period identified by the DSR, account for the growth of such transfers relative to “short term” transfers lasting less than one year. (2012 PPIC report, pp. 22-24; DSR, p. 6-87.) [footnote 42: The other relevant long-term transfer during that term was a transfer by Imperial Irrigation District. The 2012 PPIC report is available online at https://www.ppic.org/wp-content/uploads/content/pubs/report/R_1112EHR.pdf. Copies of its cited pages are submitted with these comments as Exhibit Q [see Attachment 18].] As the 2012 PPIC report and state reports have recognized, YWA also has been one of California’s most active transferors since the beginning of the 1987-1992 drought. (2012 PPIC report, p. 20.) As YWA’s 2021 agricultural water management plan details, in the 32-year period from 1987 to 2019, YWA transferred water in 24 years, with the transfers totaling more than 2.7 million acre-feet, including Yuba Accord transfer water. (Yuba Water Agency, Agricultural Water Management Plan, pp. 3-1 to 3-6, Table 3-1.) [footnote 43: The plan is available online at https://www.yubawater.org/DocumentCenter/View/4949/2020-Agriculture-Water-Management-Plan. Copies of cited pages of the plan are submitted with these comments as Exhibit E [see	impact conclusions made in the draft Staff Report do not rely on the implementation of other water management actions, and the availability of replacement supplies may be limited. California water resource management involves a myriad of individual and collective decisions, and the range of foreseeable compliance actions and potential responses to the project is wide reaching and inherently cumulative in many regards. In response to reduced Sacramento/Delta surface water supplies, water users may choose to modify their water supply portfolios by increasing the use of other sources of water and maximizing the use of existing water supplies. Other water management actions, including groundwater storage and recovery, water transfers, water recycling, and water conservation affect the overall analysis in two ways. First, environmental impacts and economic effects from reduced Sacramento/Delta surface water supplies likely would be less given these efforts. Second, other water management actions may result in their own environmental impacts that must be disclosed and analyzed. Environmental impact conclusions from reduced Sacramento/Delta supply do not rely on implementation of other water management actions even though these actions could reduce supply impacts at certain times and locations. It is not possible to quantify exactly how the various water users that may experience reduced Sacramento/Delta supplies will manage their water supply portfolios in response to reduced supplies, and this type of quantification is beyond the scope of detail required in this planning process. Please see the response to comment 309-150 for a discussion of refinements to SacWAM modeling and buffer pool storage in New Bullards Bar Reservoir made in response to comments received on the 2023 draft Staff Report. Additionally, please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for more discussion on the relationship between carryover storage targets and SacWAM reservoir buffer pools.

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		Attachment 6].] YWA's extensive experience with formulating and implementing water transfers, including the precedent-setting Yuba River Accord, have informed its review of the DSR. For the reasons discussed in more detail in the enclosed Technical Memorandum #2 [See Attachment 5 of Attachment 1] by YWA's hydrology consultant, there is no evidence to support the DSR's statements that water transfers will mitigate for the proposed Inflow and Cold Water Habitat Objectives' impacts, primarily for two key reasons. First, those proposed Objectives' implementation would effectively terminate any transfers under the Yuba River Accord, which accounted for 53% of transfers from the Sacramento River watershed to other areas of the state during the period the DSR uses for analysis. As Technical Memorandum #2 that YWA's hydrology consultant prepared and that is submitted with these comments discusses in more detail: •The DSR uses the 2007-2016 period as the basis for its discussion of recent volumes of water transfers (citing DSR, Table 6.6.1, on p. 6-86)). •Yuba River Accord transfers constituted 44% of all transfers from the "Sacramento River watershed," and 53% of transfers from that watershed to other areas of the state, during that 2007-2016 period. • Transfers of Yuba River Accord water from storage in YWA's New Bullards Bar Reservoir are calculated as releases from the reservoir's storage that cause it to be drawn below the pre-Accord end-of-September baseline storage of 705,000 acre-feet, under the Accord water purchase agreement between YWA and DWR.) [footnote 44: The original water purchase agreement was Exhibit 11a to the State Board's 2007-2008 proceeding in which it considered and approved the Yuba River Accord. (See State Board Corrected Order WR 2008-0014, pp. 9, 13, 37, 61 (citing "YCWA-11a").) The relevant accounting principles, including the definition of "Baseline Storage Target" that includes an end-of-September volume of 705,000 acre-feet in New Bullards Bar	

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		storage, are stated in that agreement's Exhibit 1. Technical Memorandum #2 also includes the relevant "Scheduling and Accounting Principles" as its Exhibit 1. The definition of "Baseline Storage Target" is stated in integrated terms on that Exhibit 1's pages 35 through 37. A copy of that water purchase agreement is submitted with these comments. While that agreement has been amended several times, its definition of "Baseline Storage Target" has not been amended and remains in place.] • The SacWAM modeling of a minimum streamflow requirement of 55% of unimpaired flow under the proposed Objectives seeks to hold end-of-September storage in New Bullards Bar Reservoir at 750,000 acre-feet. • By prohibiting such a drawdown, that modeled operation of New Bullards Bar Reservoir eliminates the increment of Yuba River Accord transfer water that YWA now generates by drawing the reservoir below 705,000 acre-feet at the end of September. • The SacWAM modeling's end-of-September 750,000 acre-foot carryover storage target also eliminates a non-transfer increment of 45,000 acre-feet of Yuba River water that otherwise would be available to the Central Valley Project and the State Water Project at their Delta diversions as a result of YWA's drawdown of New Bullards Bar Reservoir to the pre-Accord baseline storage of 705,000 acre-feet.	
309	119	[Att. 1:] Second, as Technical Memorandum #2 [See Att. 5 of ATT 1] also explains, the proposed Objectives' implementation would eliminate groundwater-substitution transfers under the Yuba River Accord by reducing surface-water supplies that YWA can deliver to Yuba County farmers. Shortages in YWA's surface-water deliveries to the public and private entities that serve Yuba County's farmers—known as YWA's "member units"—rise significantly in the SacWAM modeling reflected in the DSR's [Draft Staff Report's] analysis. The results extracted from that modeling and described in Technical Memorandum #2 indicate that, with a 55% of unimpaired flow requirement under the proposed Objectives:	The Staff Report acknowledges that changes in hydrology may result in less water supply available for water transfers, including transfers using groundwater substitution. As mentioned in Section 7.4 Agriculture and Forest Resources, changes in water supply could result in farmland conversion and lowered groundwater levels, which could, in turn, adversely affect water districts that rely on conjunctive groundwater use to manage their water supply resources. However, changes to the Bay-Delta Plan could also incentivize transfers if the value of transfer water increases, as discussed in Section 6.6.1.2, Water Transfers. Therefore, the elimination of the groundwater substitution elements of the Lower Yuba River Accord is speculative.

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		• Shortages to Yuba County farmers would increase in about 40% of years. • The increase in shortages exceeds 50,000 acre-feet in about 27% of years and goes as high as 70,000 acre-feet. For context, as Table 3-7 in YWA's April 2021 Agricultural Water Management Plan states, YWA's water supply contracts with the member units total 259,325 acre-feet per year (191,655 acre-feet in "irrigation season" supplies and 67,670 acre-feet in "offseason" supplies). (Pp. 3-29 to 3-30.) In other words, just the increase in shortages associated with a 55% of unimpaired flow requirement under the proposed Objectives would be 27% of YWA's water-supply contracts with its member units and would exceed 19% of those contracts in 27% of years. [Footnote 45: The relevant calculations are as follows: 70,000 acre-feet of shortage ÷ 259,325 acre-feet of contracts = 0.2699; 50,000 acre-feet of shortage ÷ 259,325 acre-feet of contracts = 0.1928.] The implementation of a 55% of unimpaired flow requirement probably would cause even greater water-supply shortages in Yuba County overall, because such a requirement also presumably would limit the supplies that three of YWA's member units exercise under their own water rights. As YWA's Table 3-7 shows, those member units' water-right supplies total approximately 162,500 acre-feet per year. These large shortages in YWA's historically reliable supplies to its member units almost certainly would cause Yuba County farmers to pump more groundwater, which would eliminate the groundwater-substitution element of Yuba River Accord transfers. As Technical Memorandum #2 discusses in more detail: • In the 17-year history of Yuba River Accord transfers—which began as a pilot program in 2006—groundwater-substitution transfers of Yuba River water made available by Yuba County farmers pumping groundwater, and forgoing otherwise available supplies from YWA, have averaged just over 30,000 acre-feet a year. • The annual average increase in YWA water-supply shortages to its member units under a 55% unimpaired flow requirement would be 24,000 acre-feet, with that increase in shortages being	For more discussion on water transfers, please see Common Response 6.3, Water Supply and Other Water Management Actions, and Common Response 8.1, Economic Analysis and Other Considerations, including the general description of Yuba Water Agency's operations in the discussion of economic effects from reduced revenue of hydropower production and water sales.

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		multiple times higher in the worst years. • Those increases in shortages likely underestimate the actual increases in shortages that would occur under a 55% unimpaired flow requirement because the SacWAM modeling reflected in the DSR oversimplifies YWA's operations by ignoring real-world regulatory requirements like FERC and State Board flow-fluctuation criteria that would require yet more releases. • The water-supply shortages to Yuba County farmers, through YWA's shortages under its contracts with the member units, likely would cause those farmers to pump more groundwater and that increase in groundwater pumping effectively would consume at least the volume of groundwater those farmers have pumped to support groundwater-substitution transfers under the Yuba River Accord. In essence, as Technical Memorandum #2 [Attachment 5 of ATT 1] explains, increased groundwater in Yuba County that the proposed Objectives' implementation would induce would consume the groundwater that Yuba County farmers otherwise would be able to sustainably pump to support groundwater-substitution transfers. The proposed Objectives' implementation therefore would eliminate that longstanding source of transfer supply.	
309	120	[Att. 1:] Because YWA's transfers to other areas of the state have been such a large portion of the total of such transfers, YWA's analysis that the proposed Objectives' implementation would effectively eliminate both YWA's transfers and the groundwater-substitution transfers Yuba County farmers conduct indicates that it is highly unlikely that transfers generally could mitigate any impacts of the proposed Objectives' implementation. Instead, YWA's experience and analysis indicate that transfers would be significantly reduced with the proposed Objectives. YWA's transfers—which were 53% of transfers to the Sacramento River watershed to other parts of the state in the DSR's study period—would disappear and it is highly unlikely any other sources could fill the gap, given the likely impacts that the proposed Objectives' implementation would have on other sources of transfer water in the watershed. The DSR provides no	Please see the response to comment 309-118. The impact conclusions made in the draft Staff Report do not rely on the implementation of other water management actions. The Staff Report recognizes that the availability of replacement supplies may be limited.

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		particular evidence to support its suggestion otherwise. There accordingly is no substantial evidence to support the DSR's statement that water transfers would mitigate the water-supply impacts of the proposed Objectives' implementation. The State Board therefore cannot adopt those proposed Objectives in reliance on such transfers as a mitigation measure.	
309	121	[Att. 1:] Implementation Of The Proposed Inflow And Cold Water Habitat Objectives, As Proposed In The Draft Staff Report, Would Violate The State Constitution And Multiple Statutes, Be Preempted By The Federal Power Act And Cause Unconstitutional Takings Implementation of the proposed Inflow and Cold Water Habitat Objectives, as described in the DSR, would involve radical changes to water operations throughout the Bay-Delta watershed and especially to YWA's operation of the YRDP. As discussed in NCWA's comments, and elsewhere in these comments, it is not even possible to determine exactly what all of those impacts would be because of the very broad discretion that the DSR proposes that the State Board staff would have under the proposed Objectives. It is clear, however, that the State Board, and especially its staff, would have ongoing supervision and control over the operations of the YRDP and other water projects. These terms, as proposed by the DSR, would violate Article X, section 2 of the state constitution and multiple statutes. Moreover, because the proposed Objectives' implementation would involve the State Board and its staff directing YWA in how to operate its facilities in ways that would reduce YWA's ability to apply water to its authorized beneficial uses, those proposed Objectives would involve an uncompensated, and therefore unconstitutional, taking under the federal and state constitutions. The Implementation Of The Proposed Inflow And Cold Water Habitat Objectives, As Proposed By The Draft Staff Report, Would Violate Article X, Section 2 Of The State Constitution By Invading Diversifiers' Exclusive Ability To Use And Operate Their Water Rights And Associated Facilities	The Plan amendments are broad but not unbounded. As described in Chapter 5, Proposed Changes to the Bay-Delta Plan for the Sacramento/Delta, and elsewhere, the Plan amendments are intended to be complementary to FERC and water quality certification requirements to provide sufficient flow for instream beneficial uses within the area of a hydroelectric project and also downstream and through the Delta. Provisions for adaptive implementation of the numeric inflow requirements are provided to optimize flows to benefit native fish and wildlife while also minimizing water supply impacts, and for the numeric inflow requirements to be implemented in a coordinated fashion with the cold water habitat and inflow-based Delta outflow requirements. Adaptive implementation may be allowed on a seasonal, annual, or long-term basis as part of local cooperative solutions or may be required by the Executive Director or State Water Board. Adaptive implementation may also be used to integrate, as appropriate, Bay-Delta Plan requirements with water quality certification requirements, water right orders, or other existing environmental requirements. The environmental analyses evaluate a complete range of impacts in the event that water users do not utilize adaptive implementation, as well as the potential impacts from implementation of adaptive implementation. A full range of flow scenarios with cold water storage targets are analyzed in Section 7.3, Aesthetics, through Section 7.20, Utilities and Service Systems, as well as physical habitat restoration and other ecosystem projects that may be pursued in Section 7.21, Habitat Restoration and Other Ecosystem Projects. Protecting the San Francisco Bay/Sacramento-San Joaquin Delta (Bay-Delta) watershed and its many beneficial uses is one of the State Water Board's primary responsibilities and top priorities. The State Water Board is responsible for adopting and updating

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		As discussed in more detail in NCWA's comments, the DSR proposes that the State Board would implement the proposed Inflow and Cold Water Habitat Objectives through many future discretionary decisions that would be delegated to State Board staff. (DSR, pp. 5-10 to 5-13, 5-18 to 5-20, 5-23 to 5-25.) For example, the DSR proposes that reservoir operators would be required to submit annual operations plans to the State Board's Executive Director for his or her "approval and potential modification." (DSR, pp. 5-24 to 5-25.) In other words, under the proposed Objectives, the owners of water rights could not operate their facilities, apply water to beneficial use or deliver water for consumptive use without ongoing involvement of—and potential direction by—State Board staff. Such a legal regime would violate the legal status of water rights as recognized by the people of California in enacting Article X, section 2 of the state constitution in 1928. [footnote 46: The voters initially enacted Article X, section 2 as Article XIV, section 3 of the state constitution, but renumbered it in 1976 without substantive modification. (See <i>Capistrano Taxpayers Assn., Inc. v. City of San Juan Capistrano</i> (2015) 235 Cal.App.4th 1493, 1509.)) Article X, section 2 "establishes state water policy." (National Audubon Society v. Superior Court (1983) 33 Cal.3d 419, 443.) It sets the legal foundation of all water rights in California as the ability to apply the water reasonably needed by the beneficial uses associated with those rights. (See <i>Capistrano Taxpayers Assn., Inc. v. City of San Juan Capistrano</i> (2015) 235 Cal.App.4th 1493, 1508-1510 (discussing events resulting in Art. X, § 2's enactment and interpretations of it).) Article X, section 2's text explicitly recognized, and therefore conferred constitutional recognition to, riparian and appropriative water rights: The right to water or to the use or flow of water in or from any natural stream or water course in this State is and shall be limited to such water as shall be reasonably required for the beneficial use to be served . . . Riparian rights in a stream or water course attach to, but to no more than so much of the flow thereof as may be required or used consistently with this section . . . In view of such reasonable and beneficial uses; provided, however, that nothing herein contained shall be construed as depriving any riparian owner of the reasonable use of water of	the Bay-Delta Water Quality Control Plan (Bay-Delta Plan), which establishes water quality control measures and flow requirements needed to provide reasonable protection of beneficial uses in the watershed. The revised proposed Plan amendments were developed to improve flow and water quality conditions over a large geographic area, and particularly for fish and wildlife beneficial uses in the Sacramento River watershed, Delta eastside tributaries, and Delta regions (Sacramento/Delta). Implementation of the revised proposed Plan amendments is expected to improve watershed functions and to provide associated benefits to the aquatic ecosystem and biological resources within the tributaries, the Delta, and the Bay. Please see Common Response 1.2, Water Quality Control Planning Process, for discussion of the relationship between water quality control planning and water right administration.

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		the stream to which the owner’s land is riparian under reasonable methods of diversion and use, or as depriving any appropriator of water to which the appropriator is lawfully entitled (Cal. Const., art. X, § 2 (emphasis added).) Article X, section 2 thus establishes the ability to apply water to beneficial use as the property interest that is at the core of water rights in California. As the U.S. Supreme Court has stated, what Article X, section 2 did was “serve the general welfare of the State by preserving and limiting both riparian and appropriative rights while curbing either from being exercised unreasonably or wastefully.” (United States v. Gerlach Live Stock Co. (1950) 339 U.S. 725, 751; see also Casitas Mun. Water Dist. V. United States (Fed. Cir. 2013) 708 F.3d 1340, 1354-1358 (citing Art. X, § 2 and Gerlach Live Stock).) The California Supreme Court similarly recognized how Article X, section 2 preserves water rights in a 2000 decision in which it rejected the concept that section 2 authorized a judgment in a groundwater adjudication that dispensed with water-right priorities. (City of Barstow v. Mojave Water Agency (2000) 23 Cal.4th 1224, 1249-1251 (“Mojave”).) The Court stated: The constitutional amendment therefore dictates the basic principles defining water rights: that no one can have a protectible interest in the unreasonable use of water, and that holders of water rights must use water reasonably and beneficially. Crucial to our own determination here is the fact that the amendment carefully preserves riparian and overlying rights, while abolishing that aspect of the common law doctrine which entitled a riparian, as against an upstream appropriator, to enforce his right to the entire natural flow of a stream (Mojave, supra, 23 Cal.4th, at p. 1242 (emphasis added).) The 1928 ballot argument in favor of Article X, section 2’s enactment plainly explained how section 2 would recognize, but limit, the property right inherent in a California water right: While this amendment protects all water rights to the full extent	

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		to which they can be put to reasonable beneficial use in some reasonable way, and this includes the riparian owner as well as others, nevertheless it is an effort on the part of the state in the interest of all of the people of the state, to conserve our waters. It will change the present theory of the law that now permits the unused, unrestrained and undiminished flow of our streams to the sea to be interpreted as a beneficial use of the water in this semiarid state, where all lands, including riparian lands, need artificial irrigation in summer and fall, and all our cities need stored water for domestic use. (Ballot pamphlet for Nov. 6, 1928 general election, p. 14 (Argument in Favor of Assembly Constitutional Amendment No. 27)(emphasis added).) [footnote 47: A copy of this ballot argument is submitted with these comments as Exhibit R [Attachment 19].] “It is . . . Axiomatic that once rights to use water are acquired, they become vested property rights.” (United States v. State Water Resources Control Bd. (1986) 182 Cal.App.3d 82, 101.) According to the U.S. Supreme Court, “one of the most essential sticks in the bundle of rights that are commonly characterized as property [is] the right to exclude others.” (Kaiser Aetna v. United States (1979) 444 U.S. 164, 176.) The state Court of Appeal has identified that right to exclude as one of the key characteristics that divide the State of California’s generalized “ownership” of the state’s waters from the “proprietary” rights that a diverter—and even the State itself—acquires through California law’s procedures and rules for applying water to beneficial use. (State of California v. Superior Court (2000) 78 Cal.App.4th 1019, 1025-1028.) The Court of Appeal relied on, among many authorities, Civil Code section 654, which describes property as follows: “The ownership of a thing is the right of one or more persons to possess and use it to the exclusion of others. In this Code, the thing of which there may be ownership is called property.” (State of California v. Superior Court, supra, 78 Cal.App.4th, at p. 1027.)	
309	122	[Att. 1:] The U.S. Supreme Court’s 2021 Cedar Point Nursery v. Hassid decision demonstrates how the State of California’s pursuit of its own interests through a rule negating of a property owner’s right to exclude others violates the essence of property	The commenter misses a fundamental and important distinction between the labor organizing regulation at issue in Cedar Point and the water quality control plan update being considered by the Board: the rights available to the landowner in Cedar Point

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		rights. In Cedar Point Nursery, the Court considered the Agricultural Labor Relations Board's ("ALRB") regulation that required agricultural employers to allow labor organizations to access their property, for unionization purposes, for up to three hours a day, 120 days a year. (Cedar Point Nursery v. Hassid (2021) __ U.S. __, 141 S.Ct. 2063, 2069-2070.) The Court held that the ALRB's regulation unconstitutionally appropriated "for the enjoyment of third parties the owners' right to exclude," which the Court called "a fundamental element of the property right." (Cedar Point Nursery, supra, 141 S.Ct., at p. 2072.) As the DSR describes how the State Board would implement the proposed Inflow and Cold Water Habitat Objectives, they would constitute an appropriation of diverters' property—their water rights—that would be almost identical to the ALRB regulation that the U.S. Supreme Court found to be unconstitutional. In both cases, a California state agency would have adopted a binding rule that requires a property owner to operate its property to achieve the agency's preferred policy outcome. For example, as noted above, the DSR states that reservoir owners would have to submit "annual operations plans" to the State Board, with those plans being "subject to approval and potential modification by the Executive Director." (DSR, pp. 5-24 to 5-25.) In other words, reservoir owners would not be able to operate their reservoirs—created through their investments based on water rights recognized by the State of California—without the approval and potential direction of the State Board's Executive Director. As described in the DSR, the State Board's ongoing and indefinite discretionary authority over all reservoirs and diversions in the Bay-Delta watershed would strip those diverters of their rights to exclude others from the property interest at the core of their water rights, namely their ability to apply water to the beneficial uses that they serve. The extent to which the State Board would invade diverters' right to exclude others from the use of their water rights is demonstrated vividly by the SacWAM modeling results for YWA's New Bullards Bar Reservoir. Those results indicate that the State Board effectively would commandeer nearly all usable storage space in the reservoir to advance its implementation of the proposed Objectives by requiring YWA to maintain end-of-	and a water rights holder are not the same. At issue in Cedar Point was, among other things, the property owner's "right to exclude" others from the owner's real property, a plot of land used for agriculture. The right to exclude is a traditional part of the "bundle of sticks" inherent in a property right to land. Ownership of a water right is not the same as ownership of land; the two property rights do not contain the same "bundle of sticks," or rights. A water right is a right to use water, also known as a usufructuary right, and a water right holder does not own the corpus or body of the water, itself, unless and until the water is separated from real property (i.e. if it were bottled and sold in bottled water). (See Eddy v. Simpson (1853) 3 Cal. 249, 252.) Instead, ownership of water is vested in the State of California, to be held in trust for its people. An owner of land, on the other hand, does own the corpus of the land (i.e. the dirt and anything on it). While a landowner has the right to exclude, because a landowner owns the soil, a water right holder does not have the same right to exclude, which is evident when looking at the realities of California water law. First, all water use in California is subject to the waste and unreasonable use provisions of Article X, Section 2. The State Water Board is empowered to enforce Article X, Section 2, and does so to prevent waste of water. If a water rights holder has a paramount right to exclude, as claimed by the commenter, then it could waste water with no recourse against it, which is contrary to the California Constitution. Second, should a water right holder possess a paramount right to exclude then a downstream senior water rights holder could, in theory, require an upstream dam operator not to store that rights holder's water, defeating the dam operator's ability to store water for use later in the season, generation of power, recreation, and more. A paramount right to exclude, as discussed in Cedar Point with respect to ownership of land, does not exist within the context of a California water right.

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		September carryover storage of 750,000 acre-feet, which would nearly reach the reservoir's legally-required flood-control pool. (DSR Appendix A1, p. A1-285 to A1-286, Figure A1-134, Table A1-279.) Even leaving aside the question of whether the proposed Objectives, as the DSR proposes they would be implemented, would be an unconstitutional taking without compensation, those proposed Objectives would violate the state constitution's Article X, section 2 by effectively negating water rights as a form of property.	
309	123	[Att. 1:] As Described In The Draft Staff Report, the Proposed Inflow And Cold Water Habitat Objectives' Implementation Would Significantly Interfere With Yuba Water Agency's Statutory Missions And Therefore Would Be Inconsistent With Porter-Cologne's Overarching Policies In late December 1955, a large storm generated a flood on the Yuba and Feather Rivers simultaneously. Levees failed, with the results including 40 deaths, the evacuation of 30,000 people, the flooding of 95% of Yuba City and of 3,300 homes, the inundation of approximately 100,000 acres and estimated damage of \$50.5 million in 1955 dollars. (Yuba Water Flood Risk Management Planning Study (June 2023), p. 4.) [footnote 48: Copies of cited pages of this study are submitted with these comments as Exhibit L Copies of cited pages of this study are submitted with these comments as Exhibit L.] In response to this catastrophe and the need for comprehensive water management in Yuba County, in 1959, the Legislature created YWA by enacting the Yuba County Water Agency Act. (Cal. Statutes 1959, ch. 788, p. 2780.) In section 1 of that Act, the Legislature declared: A district hereinafter called an agency is hereby created for the purpose of accomplishing a function of statewide importance. Said agency shall be known as the Yuba County Water Agency . . . (Cal. Statutes 1959, ch. 788, § 1, p. 2780 (emphasis added); West's Water Code Appendix § 84-1 (1959 statute remains in place).)	The Bay-Delta Plan does not interfere with Yuba Water Agency's statutory missions and falls within the bounds of the State Water Board's authorities and obligations established under the Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The Porter-Cologne Act requires "that activities and factors which may affect the quality of the waters of the state shall be regulated to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible." (Wat. Code, § 13000.) In carrying out its water quality control planning duties, the State Water Board is "invested with wide authority" to attain the highest reasonable water quality. (United States v. State Water Resources Control Bd. (1986) 182 Cal.App.3d 82, 109.) When establishing water quality objectives, the State Water Board is required to consider the factors identified in Water Code section 13241. Analyses examining these factors are included throughout the Staff Report, as discussed in final Staff Report Section 13.6.2, Water Code Section 13241 Analysis. In addition to the proposed Plan amendments, which remain part of the project as the regulatory pathway, the project has also been revised in response to comments received expressing concerns over potential water supply and carryover storage impacts. The inflow requirements contained in the revised proposed Plan amendments include water supply adjustments for existing water right holders at the outset of plan implementation to reduce water supply impacts and allow more water to be stored in reservoirs. Please see Common Response

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		In the Act, the Legislature made findings to explain why it was creating YWA: The Legislature hereby finds that water problems in the County of Yuba require countywide water conservation, flood control and development of water resources; . . . That the solution of these problems lies within and is peculiar to the area to be included in the Yuba County Water Agency; . . . That county water districts, municipalities, irrigation districts and reclamation districts now exist within portions of the county, have acquired property and works, developed a limited water supply, and have incurred indebtedness, but have been and are unable alone to economically develop an adequate water supply and control the floods of said county, and for such reason it is necessary to have a political entity at least coextensive with the geographical limits of the entire county. It is therefore hereby declared that a general law cannot be made applicable to said county, and that the enactment of this special law is necessary for the conservation, development, control and use of said water for the public good and for the protection of life and property therein. (Cal. Statutes. 1959, ch. 788, § 26, p. 2798; see also West's Water Code Appendix, § 84-26 (1959 finding remains in place).) In these explicit terms, the Legislature assigned YWA the conjoined statutory missions of seeking to control floods in Yuba County and developing the County's water resources for the public good. Nothing in Porter-Cologne grants the State Board authority to override YWA's statutory missions. In contrast, Porter-Cologne's overarching policies are consistent with YWA's accomplishment of these missions: The Legislature finds and declares that the people of the state have a primary interest in the conservation, control, and utilization of the water resources of the state, and that the quality of all the waters of the state shall be protected for use and enjoyment by the people of the state. The Legislature further finds and declares that activities and factors which may affect the quality of the waters of the state	1.3, Revised Proposed Plan Amendments, for a discussion of the revised proposed Plan amendments' inflow objective and its associated water supply adjustments. In response to comments asserting that the initial carryover storage requirements were too restrictive, the revised proposed Plan amendments allow reservoir owner/operators, as part of their development of long-term temperature management strategies, to propose their own carryover storage levels within an appropriate range tailored to each reservoir (including New Bullards Bar Reservoir). The revised proposed Plan amendments also provide for a VA pathway for an initial eight-year term that reduces flow contributions required from VA water rights, including those held by Yuba Water Agency. Finally, the program of implementation also contains numerous flexible provisions allowing for adaptive management to minimize water supply impacts (e.g., the ability to manage numeric flow requirements as a total volume of water to shape flows) and also contains provisions allowing the State Water Board to develop and implement curtailment exceptions for human health and safety needs and other appropriate purposes.

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		shall be regulated to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible. The Legislature further finds and declares that the health, safety and welfare of the people of the state requires that there be a statewide program for the control of the quality of all the waters of the state; that the state must be prepared to exercise its full power and jurisdiction to protect the quality of waters in the state from degradation originating inside or outside the boundaries of the state; that the waters of the state are increasingly influenced by interbasin water development projects and other statewide considerations; that factors of precipitation, topography, population, recreation, agriculture, industry and economic development vary from region to region within the state; and that the statewide program for water quality control can be most effectively administered regionally, within a framework of statewide coordination and policy. (Water Code § 13000 (emphasis added).)	
309	124	[Att. 1:] Porter-Cologne requires that the State Board, “in exercising any power granted” by Porter-Cologne, “shall conform to and implement the policies of this chapter [which includes Water Code § 13000].” (Water Code § 13001.) Contrary to the Legislature’s direction in the Yuba County Water Agency Act, and in Porter-Cologne’s overarching policies, the proposed Inflow and Cold Water Habitat Objectives’ implementation would significantly impact YWA’s ability to implement both its flood-control mission and its water-supply mission. As discussed elsewhere in these comments, the proposed Objectives’ implementation, as described in the DSR, would: • Effectively commandeer nearly all of New Bullards Bar Reservoir’s operable storage space by compelling YWA to operate the reservoir to meet, to the extent possible, an end-of-September carryover storage requirement of 750,000 acre-feet.	Please see the response to comment 309-123 for a discussion of the State Water Board’s obligations under the Porter-Cologne Water Quality Control Act and changes made through the revised proposed Plan amendments to address comments expressing concerns about water supply and reservoir storage impacts. As noted in the response to comment 309-123, in response to comments asserting that the initial carryover storage requirements were too restrictive, the revised proposed Plan amendments allow reservoir owner/operators to propose their own carryover storage levels within an appropriate range tailored to each reservoir (including New Bullards Bar Reservoir). The suggested carryover storage range for New Bullards Bar Reservoir is 400-600 TAF. As noted in the response to comment 309-99, the flow requirements of the Plan amendments would not obstruct Yuba Water Agency (YWA) efforts to reduce flood risks through the ARC Spillway and Forecast-Informed Reservoir Operations

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		• Significantly constrain YWA's flexibility in operating its New Bullards Bar Dam and Reservoir to manage incoming flood flows. That constraint would exist both under current conditions and under reasonably foreseeable future conditions in which YWA has constructed its proposed ARC spillway and is implementing FIRO in conjunction with DWR's operation of Oroville Dam. • Significantly reduce the revenues that YWA generates through its operations under the Yuba County Water Agency Act to support flood-risk reduction projects in Yuba County. [footnote 49: Section 4.2 of the Yuba County Water Agency Act authorizes YWA to control "flood and storm waters" as follows: "The agency shall have the power to control the flood and storm water of the agency and the flood and storm waters of streams that have their sources outside of the agency, which streams and floodwaters flow into the agency. . . And protect from damage from such flood or storm waters the watercourses, watersheds, public highways, life and property in said agency." (Cal. Statutes 1959, ch. 788, §4.2, p. 2783; see also West's Water Code Appendix § 84-4.2 (1959 statute still in place).)] • Significantly increase shortages in YWA's agricultural-supply deliveries, which effectively would compel Yuba County farmers to increase groundwater pumping in previously overdrafted south Yuba County and in north Yuba County, where such sustained pumping would be an unprecedented experiment given that area's historically sufficient surface-water supplies.	(FIRO) projects. The cold water habitat objective would not require reservoir storage to violate flood control rules. The Staff Report does not include an evaluation of the effect of the Plan amendments on YWA's implementation of FIRO and of the ARC spillway because there is no clear mechanism of effect. If YWA income is affected by the Plan amendments, the effect on flood-control efforts would be uncertain. YWA could find other sources of income for flood-control efforts such as increases in water rates. In addition, YWA is not the only agency providing funding for flood control on the Yuba River. The state and federal governments provide substantial contributions (YWA 2025). Estimating possible increases in flooding associated with changes in funding would be speculative. Please also see Common Response 8.1, Economic Analysis and Other Considerations, for a discussion of grants and loans associated with water-related projects, including for service to disadvantaged communities; and for a discussion of the Plan's potential effects on hydropower revenues. The 2023 draft Staff Report acknowledges that the water users' response to changes in water supply may have impacts on groundwater (discussed in Section 7.12.2, Groundwater). Subbasins designated as a medium or high priority basin were required to form Groundwater Sustainability Agencies (GSAs) and develop their subbasins' Groundwater Sustainability Plan (GSP). This included North Yuba and South Yuba subbasins. While North and South Yuba subbasins' GSP have been approved by the Department of Water Resources, they still require regular maintenance. GSPs are not static and should be updated regularly to reflect sustainable management under dynamic circumstances, such as changes to regulatory requirements. Actions taken in response to reduced surface water supplies because of Sacramento/Bay-Delta Plan implementation will have varying degrees of impact to groundwater levels depending on the mitigation measure used. Pumping additional groundwater to make up for decreased surface water is one response and the Staff Report concludes that the subsequent adverse effect on groundwater levels could be a potentially significant (Impact GW-b). Other mitigation measures, however, have less of a

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			groundwater impact. It is not possible for the State Water Board to predict regional impacts to groundwater because the assumptions used to model such impacts depend on the mitigation measures used, the actions of well owners in response to reduced surface water supplies, and how GSAs respond and adapt to changes in surface water supply in their GSP implementation. Please see Common Response, 7.12.2, Groundwater and Sustainable Groundwater Management Act, for more information on the non-static nature of SGMA implementation, State Water Board roles, GSA roles, and discussion of SGMA overlap with the Sacramento/Delta Bay Delta plan update. Please also see Common Response 7.1, General CEQA and Approach to the Analysis, for more information on how this Staff Report is not required to provide region-specific impact analyses and is part of a larger planning process that meets CEQA requirements.
309	125	[Att. 1:] Statutes must be harmonized, where reasonably possible, so that they can be regarded as blending together to form a single statute. (Pacific Palisades Bowl Mobile Estates, LLC v. City of Los Angeles (2012) 55 Cal.4th 783, 805.) The State Board's authority under Porter-Cologne therefore must be harmonized with the missions that the Legislature assigned to YWA in the Yuba County Water Agency Act. In absence of some explicit term in Porter-Cologne that allows the State Board to override other statutes, it cannot do so. (See State Water Resources Control Bd. V. Office of Admin. Law (1993) 12 Cal.App.4th 697, 702-706.) The proposed Inflow and Cold Water Habitat Objectives' implementation would involve the State Board effectively operating YWA's major facility through the State Board staff's discretionary decision making, with resulting significant impacts on YWA's ability to achieve its missions as assigned by the Legislature. Those proposed Objectives therefore are inconsistent with the Yuba County Water Agency Act and are not consistent with Porter-Cologne's overarching policies, with which the State Board must comply here.	Please see the responses to comments 309-123 and 309-124 above. As discussed in those two comment responses, the regulatory requirements contained in the Bay-Delta Plan do not render it impossible for Yuba Water Agency to carry out the missions assigned to it in the Yuba County Water Agency Act; the requirements can be harmonized.
309	126	[Att. 1:] The State Board's Implementation Of The Proposed Inflow And Cold Water Habitat Objectives, As Proposed By The Draft Staff Report, Would Be Preempted By The Federal Power	Hydroelectric facilities are regulated under the Federal Power Act through a federal license issued by the Federal Energy Regulatory Commission (FERC). It is settled law that for single-

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		Act In the past, the State Board attempted to establish that it, through its authority over California water rights, could regulate hydroelectric projects licensed under the Federal Power Act (the “FPA”) in parallel with FERC. In a 1990 decision, the U.S. Supreme Court held that the State Board could not do so because the FPA preempted the State Board’s independent water-right authority over those projects. (California v. FERC (1990) 495 U.S. 490, 506.) The State Board then attempted to require that an applicant for an FPA license produce studies not required by FERC, but the federal Ninth Circuit Court of Appeals rejected that attempt in a 1993 decision that also stated that the attempt approached sanctionable behavior. (Sayles Hydro Assn. v. Maughan (9th Cir. 1993) 985 F.3d 451, 453, 455-456.) In a case resulting in a 2010 California Court of Appeal decision, the State Board informed the Court that it had accepted the preceding results. (Karuk Tribe of Northern California v. California Regional Water Quality Control Bd., North Coast Region (2010) 183 Cal. App. 4th 330, 352-355.) The Court of Appeal accordingly stated that the U.S. Supreme Court and the Ninth Decision have “in the most expansive terms, validated expansive federal authority over the conditions governing operation of hydroelectric projects.” (Id. At p. 350.) In a 2022 decision, the California Supreme Court extended this preemption logic from the State Board’s water-right authority to the elements of CEQA that theoretically could impose substantive requirements on hydroelectric projects’ operations that would be inconsistent with FERC’s license terms. (County of Butte v. Department of Water Resources (2022) 13 Cal. 5th 612, 633-634.) Notwithstanding these clear authorities under which the FPA preempts the State Board from regulating hydroelectric projects, the DSR proposes that, under the proposed Inflow and Cold Water Habitat Objectives, the State Board—and especially its staff—would exercise ongoing discretionary authority over such projects’ operations. NCWA’s comment letter describes the many terms along this line that the DSR proposes and YWA incorporates NCWA’s comment. (See DSR, pp. 5-10 to 5-13, 5-18 to 5-20, 5-23 to 5-25 (proposing various exercises of discretionary authority by State Board staff).)	purpose hydroelectric facilities, the Federal Power Act preempts state law, except for proprietary rights to water. (First Iowa Hydro-Electric Cooperative v. FPC (1946) 328 U.S. 152; California v. FERC (1990) 495 U.S. 490; Sayles Hydro Associates v. Maughan (9th Cir. 1993) 985 F.2d 451.) Water quality standards and other appropriate requirements of state law can be implemented through a water quality certification order under section 401 of the Clean Water Act. (PUD No. 1 of Jefferson County v. Washington Department of Ecology (1994) 511 U.S. 700; S.D. Warren Co. v. Maine Board of Env’l. Protection (2006) 126 S.Ct. 1843.) The fact that FERC has hydropower jurisdiction over a project does not prevent the State from exercising its independent jurisdiction to regulate diversions of water for non-power production purposes. Section 27 of the Federal Power Act specifies that state authority over irrigation, municipal use, or other similar consumptive uses is not preempted. (16 U.S.C. § 821; see California v. F.E.R.C. (Rock Creek) (1990) 495 U.S. 490, 498 [holding that this section preserves state authority to regulate irrigation, municipal use, and other uses of the same nature, and does not preserve state authority to regulate use for hydropower generation].) In County of Amador v. El Dorado County Water Agency (1999) 76 Cal.App.4th 931, the Court of Appeal held that the Federal Power Act does not preempt state laws concerning environmental impacts of operation of FERC licensed multiple purpose water development projects to the extent that those laws are applied to use of the project for consumptive use purposes such as irrigation or municipal use. Protecting the San Francisco Bay/Sacramento-San Joaquin Delta (Bay-Delta) watershed and its many beneficial uses is one of the State Water Board’s primary responsibilities and top priorities. The State Water Board is responsible for adopting and updating the Bay-Delta Water Quality Control Plan (Bay-Delta Plan), which establishes water quality control measures and flow requirements needed to provide reasonable protection of beneficial uses in the watershed. The revised proposed Plan amendments were developed to improve flow and water quality conditions over a large geographic area, and particularly for fish and wildlife beneficial uses in the Sacramento River watershed,

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		The example of reservoir operators’ “annual operations plans” that the State Board staff could require, approve and potentially modify especially demonstrates how the proposed Inflow and Cold Water Habitat Objectives’ implementation would be preempted by the FPA. (DSR, pp. 5-23 to 5-25.) Under the general terms described in the DSR, the State Board’s Executive Director presumably would exercise discretion over hydroelectric projects’ operations every single year and even to the extent of directing those operations by ordering modifications to operations plans. If, as the U.S. Supreme Court ruled in 1990 in <i>California v. FERC</i>, the State Board is preempted from regulating hydroelectric projects’ operations through a permit issued one time, the FPA certainly preempts the State Board from exercising discretionary control over such projects’ operations in every individual year. It further is indicative that even the State Board’s somewhat more expansive authority over hydroelectric projects’ licenses under water quality certifications issued under section 401 of the Clean Water Act do not include the sort of rolling discretionary authority over those projects that the DSR proposes under the proposed Inflow and Cold Water Habitat Objectives. The U.S. Environmental Protection Agency (“USEPA”) promulgated regulations to govern the states’ issuance of water quality certifications for federally-licensed projects in 2023. In its preamble to those regulations, the USEPA stated that, even in those certifications authorized by federal law itself, state agencies like the State Board cannot “bootstrap” themselves into ongoing authority over federally-licensed projects by including “reopener” terms in those certifications. (USEPA, Clean Water Act Section 401 Water Quality Certification Improvement Rule, 88 Fed. Reg. 66558, 66615, 66632 (Sept. 27, 2023).) It is plain that the proposed Objectives’ implementation would adversely impact hydroelectric projects’ operations and the operations of YWA’s New Colgate powerhouse in particular. The DSR acknowledges that the proposed Objectives’ implementation would cause large changes in hydropower generation due to the “changes in operations at these reservoirs.” (DSR, p. 7.8-8.) The DSR further acknowledges that the proposed	Delta eastside tributaries, and Delta regions (Sacramento/Delta). Implementation of the revised proposed Plan amendments is expected to improve watershed functions and to provide associated benefits to the aquatic ecosystem and biological resources within the tributaries, the Delta, and the Bay. The Plan amendments are intended to be complementary to FERC and water quality certification requirements to provide sufficient flow for instream beneficial uses. Provisions for adaptive implementation of the numeric inflow requirements are provided to optimize flows to benefit native fish and wildlife while also minimizing water supply impacts, and for the numeric inflow requirements to be implemented in a coordinated fashion with the cold water habitat and inflow-based Delta outflow requirements. Adaptive implementation may be allowed on a seasonal, annual, or long-term basis as part of local cooperative solutions or may be required by the Executive Director or State Water Board. Adaptive implementation may also be used to integrate, as appropriate, Bay-Delta Plan requirements with water quality certification requirements, water right orders, or other existing environmental requirements. In addition, please see Common Response 7.8, Energy and Hydropower, regarding hydropower generation at Colgate Powerhouse.

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		Objectives would cause a 15% reduction in hydroelectric generation in “the Sacramento River Watershed and Delta Eastside Tributaries Regions” during the summer months, when demand for electricity is high. (DSR, pp. 7.8-18 to 7.8-21.) Finally, the proposed Objectives’ implementation would cause a very disproportionate impact on generation at YWA’s New Colgate powerhouse, which would be the single most impacted powerhouse. (DSR, p. 7.8-26, Figure 7.8-14.) These sorts of impacts on generation demonstrate why the FPA preempts the State Board from exercising its state-law authority as a means for controlling hydroelectric projects’ operations in parallel with FERC.	
309	127	[Att. 1:] The Proposed Broad Delegations Of Authority To State Board Staff Under The Proposed Inflow And Cold Water Habitat Objectives Would Be Illegal As A Breach Of The Public Trust Dedicated To The State Board Members Themselves As discussed in NCWA’s comments and elsewhere in these comments, the DSR proposes that, under the proposed Inflow and Cold Water Habitat Objectives, State Board staff would exercise broad and ongoing discretionary authority over how reservoir operators and other diverters would be required to behave under those proposed Objectives. (See DSR, pp. 5-10 to 5-13, 5-18 to 5-20, 5-23 to 5-25.) The California Supreme Court, however, has declared that those who hold public offices to exercise their judgment are clothed with a public trust that cannot be delegated: As a general rule, powers conferred upon public agencies and officers which involve the exercise of judgment or discretion are in the nature of public trusts and cannot be surrendered or delegated to subordinates in the absence of statutory authorization . . . [¶] On the other hand, public agencies may delegate the performance of ministerial tasks, including the investigation and determination of facts preliminary to agency action. (California School Employees Assn. v. Personnel Com. Of Pajaro Valley Unified School Dist. (1970) 3 Cal. 3d 139, 144.)	The proposed Plan amendments do not constitute an unlawful delegation of the Board’s authority. Water Code section 7 provides: Whenever a power is granted to, or a duty is imposed upon, a public officer, the power may be exercised or the duty may be performed by a deputy of the officer or by a person authorized, pursuant to law, by the officer, unless this code expressly provides otherwise. The Plan amendments are broad but not unbounded. The delegation of certain authorities to the executive director is related to the flexibilities provided in the Plan itself. Provisions for adaptive implementation of the numeric inflow requirements are provided to optimize flows to benefit native fish and wildlife while also minimizing water supply impacts, and for the numeric inflow requirements to be implemented in a coordinated fashion with the cold water habitat and inflow-based Delta outflow requirements. Adaptive implementation may be allowed on a seasonal, annual, or long-term basis as part of local cooperative solutions or may be required by the Executive Director or State Water Board. These flexibilities are provided primarily for the water diverter to best tailor its operations to fit the unique circumstances but oversight is needed. The environmental analyses evaluate a complete range of impacts in the event that water users do not utilize adaptive implementation, as well as the potential impacts from implementation of adaptive implementation. A full range of flow scenarios with cold water storage targets are analyzed in Section 7.3, Aesthetics, through Section 7.20, Utilities and Service Systems, as well as physical

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		Ministerial tasks are those that do not involve discretion or the exercise of judgment. (See <i>Glendale City Employees' Assn. v. City of Glendale</i> (1975) 15 Cal.3d 328, 344.) The principle that the exercise of judgment or discretion is a public trust that cannot be delegated applies especially to the State Board as a board. Water Code section 174 describes the trust invested in the State Board's members as follows: (a) The Legislature hereby finds and declares that in order to provide for the orderly and efficient administration of the water resources of the state, it is necessary to establish a control board that shall exercise the adjudicatory and regulatory functions of the state in the field of water resources. (b) It is also the intention of the Legislature to combine the water rights, water quality, and drinking water functions of the state government to provide for coordinated consideration of water rights, water quality, and safe and reliable drinking water. Water Code section 175 reflects this trust by requiring that members of the State Board have specific qualifications and be confirmed by the state Senate. Water Code section 183 states that "the board" possesses "the powers conferred upon heads of departments of the state" and "may hold any hearings and conduct any investigations in any part of the state necessary to carry out the powers vested in it." Water Code section 181, in turn, states "[t]hree members of the board shall constitute a quorum for the purpose of transacting any business of the board." (Emphasis added.) These sections reaffirm that the State Board, as a whole, is the entity entrusted by the state to make decisions about water resources. The DSR does not appear to identify any statutory authority for its proposed delegations to State Board staff to determine what the proposed Objectives' very broad and vague terms mean in reality. There does not appear to be any such statutory authority. For example, while Water Code section 13223 allows a regional board to delegate many actions to its executive officer, it prohibits the delegation of a "modification" of "any water quality control plan [or] water quality objectives . . ." (Water Code §	habitat restoration and other ecosystem projects that may be pursued in Section 7.21, Habitat Restoration and Other Ecosystem Projects. Adaptive implementation proposed outside of the parameters of the Plan would require additional documentation, environmental review, and approval by the Board.

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		13223, subd. (a).) A delegation of authority to modify “the terms of the permitted action” is not valid under that statute. (Malaga County Water Dist. V. Central Valley Regional Water Quality Control Bd. (2020) 58 Cal.App.5th 396, 414-416 (effective modification of waste discharge requirement).) More generally, as the Attorney General stated in a 2007 opinion that concerning the Native American Heritage Commission: Examples of permissible delegations include most personnel decisions, supervision of the agency's staff, and general day-to-day administration of the agency's operations. [¶] On the other hand, matters that call for an exercise of the board's or commission's special discretion or judgment may not lawfully be delegated to an executive officer or other body because such authority is exclusively reserved, as a public trust, for the public agency to which that authority has been conferred by law. If this were not so, the board or commission would itself have little purpose. (90 Ops. Cal. Atty. Gen. 89, 95-96 (2007) (emphasis added).) Finally, the delegation of discretion to make future decisions concerning the implementation of the project to staff violates CEQA. CEQA does not allow the project approval to be divorced from the consideration of the environmental effects. (POET, LLC v. State Air Resources Bd. (2013) 218 Cal.App.4th 681, 731.) Yet that is precisely what the DSR's proposed implementation terms would do by subjecting reservoir operators' long-term strategies and annual plans to the State Board staff's review and approval. (DSR, pp. 5-23 to 5-24.) By proposing to delegate to State Board staff the ongoing authority to approve or disapprove reservoir operators' long-term strategies and plans, the DSR essentially proposes to allow the staff to decide what the proposed Objectives actually will require in reality without the decisionmakers themselves—the State Board members—considering the environmental impacts of those decisions. The DSR's proposed terms for the proposed Objectives' implementation would illegally delegate extensive discretion to	

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		State Board staff to determine what those proposed Objectives actually would require in practice.	
309	128	[Att. 1:] The Proposed Inflow And Cold Water Habitat Objectives' Implementation Would Constitute An Uncompensated, And Therefore Unconstitutional, Taking Of Yuba Water Agency's Water Rights And Reservoir-Storage Space As discussed above, in the 2021 Cedar Point Nursery decision, the U.S. Supreme Court held that a California administrative rule that required a property owner to allow access to its property to third parties in order to advance the relevant state agency's own policies was an unconstitutional taking under the Fifth Amendment to the U.S. Constitution. (Cedar Point Nursery, supra, 141 S.Ct., at pp. 2069-2072.) In the context of California water rights, the Federal Circuit Court of Appeals held in a combination of two pre-Cedar Point Nursery decisions that administrative rules that require the holder of a California water right to direct water subject to that right in specific ways can constitute an unconstitutional taking where the rule ultimately reduces the water rightholder's ability to apply water to beneficial use. (Casitas Mun. Water Dist. V. United States (2008) 543 F.3d 1276, 1289-1290; Casitas Mun. Water Dist., supra, 708 F.3d 1340, at pp. 1354-1358.) The California Constitution's Takings Clause applies similarly to the similar clause in the U.S. Constitution's Fifth Amendment, but may be somewhat broader because it includes "damage" to property. (San Remo Hotel v. City and County of San Francisco (2002) 27 Cal.4th 643, 664.) At least if the proposed Inflow and Cold Water Habitat Objectives were to be applied in any way similar to the way in which they were modeled in the SacWAM modeling reflected in the DSR, those proposed Objectives would cause an unconstitutional taking of YWA's water rights.⁵⁰ As discussed in more detail elsewhere in these comments and in the enclosed Technical Memorandum #2 [see Att. 5 of ATT 1], as modeled in SacWAM, the proposed Objectives' implementation would involve the State Board compelling YWA to use almost its entire reservoir capacity to implement those proposed Objectives for the benefit of the State Board's preferred fish and wildlife beneficial uses.	Please see Common Response 1.2, Water Quality Control Planning Process, for discussion of the relationship between water quality control planning and water right administration, including a discussion of due process and compensable taking of private property. Please also see response to comment 309-122.

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		The volume of water that YWA could put to its beneficial uses as stated on its water-right permits and licenses—and the benefits that YWA could generate through that application of water—would be at least significantly reduced. This point is made most obviously by the very large reduction in YWA's hydroelectric generation at its New Colgate powerhouse, which would be—by far—the most impacted hydroelectric facility analyzed in the DSR. (See DSR, p. 7.8-26, Figure 7.8-14.) As the enclosed Technical Memorandum #2 also explains, the proposed Objectives' implementation, as modeled, would cause significant reductions in the volumes of water YWA could deliver for irrigation beneficial use by farmers within its member units and would completely eliminate YWA's Yuba River Accord water transfer program, which has supported beneficial use by many water and generated millions of dollars of revenue that YWA has been able to use to support water-related projects in Yuba County's disadvantaged communities. It has long been recognized as a taking for a government agency to "requisition" the water subject to a water right for that agency's own use. In 1931, the U.S. Supreme Court held that a taking occurred when the United States requisitioned the water in a canal to which a paper company was entitled to instead generate electricity to support the United States' war efforts during World War I. (<i>Int'l Paper Co. v. United States</i> (1931) 282 U.S. 399, 404-407.) As Justice Oliver Wendell Holmes wrote for the Court: The petitioner's right was to the use of the water; and when all the water that it used was withdrawn from the petitioner's mill and turned elsewhere by government requisition for the production of power it is hard to see what more the Government could do to take the use. (<i>Int'l Paper Co.</i>, supra, 282 U.S., at p. 407.) At least as modeled in the SacWAM modeling reflected in the DSR, the proposed Objectives' implementation would have a similar effect on YWA's water rights. (See also <i>Kaiser Aetna</i>, supra, 444 U.S., at pp. 167-168, 178-180 (taking for federal agency to order public access to private pond created with prior	

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		federal acquiescence).) The State Board effectively would requisition the use of the water YWA can storage and use under its water rights and direct that water away from YWA's authorized beneficial uses and to the beneficial uses that the State Board would prefer. Such a result, however, would be unconstitutional.	
309	129	[Att. 1:] YWA can assert federal constitutional claims against the State Board for multiple reasons, First, in its role as assigned by the Legislature in the Yuba County Water Agency Act, YWA is asserting the interests of Yuba County's people in managing the water of their local river to be less of a source of destructive floods and more of a water supply, for the purpose of serving not only local demands, but also generating revenue to support the county's communities, including its disadvantaged communities. (See Sanchez v. City of Modesto (2006) 145 Cal.App.4th 660, 675-677; Central Delta Water Agency v. State Water Resources Control Bd. (1993) 17 Cal.App.4th 621, 630.) Second, it is the primary entity that can assert those interests because YWA alone holds the relevant water rights and FERC license. (See Sanchez, supra, 145 Cal.App.4th, at pp. 675-677.)	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project.
309	130	[Attachment 1 of Attachment 1: Letter from The County of Yuba to Yuba Water Agency dated January 10, 2024]	This attachment was included with the comment letter. The attachment does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing attachments to comments.
309	131	[Att 1: Att 2:] Implementation of the Draft Staff Report's proposed Inflow and Cold Water Habitat Objectives would result in significant adverse water temperature impacts to anadromous salmonids, including listed species. The Draft Staff Report (pg. 7.6.2-93) states that the proposed Inflow and Cold Water Habitat Objectives, which incorporate proposed minimum streamflow requirements that are based on percentages of unimpaired flows, would generally result in higher spring flows compared with baseline conditions on regulated tributaries, and that higher spring flows could also result in reduced reservoir storage at the end of spring and a smaller cold water pool volume in summer and fall months. The Draft Staff Report (pg. 7.6.2-57) goes on to state that low storage in late summer and fall months (i.e., August through November)	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project. Please see Common Response 7.6.2, Aquatic Biological Resources and Cold Water Habitat, regarding implementation of the cold water habitat objective.

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		can cause reservoir release and downstream water temperatures to become too warm for cold water fish such as Chinook salmon and steelhead. The Draft Staff Report (pg. 7.6.2-93) acknowledges that increases in water temperatures associated with the proposed Inflow and Cold Water Habitat Objectives represents a potentially significant adverse impact to native fish species. Examination of water temperature modeling results (Appendix A6 to the Draft Staff Report, pg. A6-505 through A6-510) demonstrates that adverse water temperature impacts are particularly evident during the summer and fall months under the 55% (and greater) UIF scenarios. The Draft Staff Report (pg. 7.6.2-95) acknowledges that adverse water temperature impacts could occur even with mitigation, and water temperature impacts on special-status fish species associated with the proposed Inflow and Cold Water Habitat Objectives remain potentially significant.	
309	132	[Att 1: Att 2:] The Draft Staff Report does not acknowledge that implementation of the proposed Inflow and Cold Water Habitat Objectives would result in a trade-off between lifestages affected by winter/spring changed conditions, and lifestages affected by resultant adverse water temperature conditions during summer/fall. The Draft Staff Report (pg. 7.6.2-93) concludes that the proposed Inflow and Cold Water Habitat Objectives would generally result in higher spring flows and assumes that native anadromous salmonids and other native species would thereby be expected to benefit. However, the higher spring flows that would result from implementation of the proposed Objectives would come at the cost of higher (and less suitable) water temperatures during the summer and fall. For example, spring conditions may be expected to benefit fall-run Chinook salmon juvenile rearing and emigration in the lower American River, but adult immigration during the summer and fall would experience significant adverse water temperature impacts (pg. 7.6.2-75, Table 7.6.2-27). Likewise, steelhead in the lower American River may be expected to benefit from late	The Staff Report acknowledges that while higher spring flows that more closely resemble the natural hydrologic regime would benefit native anadromous salmonids and other native species, higher spring flows also could result in a reduction in reservoir storage at the end of spring and a smaller cold water pool volume in summer and fall months. The Staff Report acknowledges potential temperature increases could occur in some streams under some circumstances and managing these factors to protect cold water habitat for fish is complex and challenging. However, the implementation of the narrative cold water habitat objective and the flexibility provided in the inflow requirements would be expected to improve water temperature conditions for native cold water fish. The cold water habitat objective is intended to bolster existing legal protections to ensure comprehensive temperature protection over time. Please see Common Response 7.6.2, Aquatic Biological Resources and Cold Water Habitat, regarding implementation of the cold water habitat objective.

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		winter/spring conditions during the spawning and embryo incubation periods, but adverse water temperature impacts would occur during the juvenile over-summer rearing period (pg. 7.6.2-77, Table 7.6.2-29). The Draft Staff Report's water temperature modeling results show that this trend in trading-off increased spring flows at the expense of adverse water temperature conditions during the summer and fall under the proposed Objectives is also realized for the Sacramento and Feather rivers. In the Sacramento River at Clear Creek during drier year types, water temperatures resulting from implementation of the proposed Objectives would adversely and significantly impact the endangered winter-run Chinook salmon during the peak spawning and embryo incubation period of June-July (Appendix A6, pg. A6-74). Similarly, in the Low Flow Channel section of the Feather River, water temperatures resulting from implementation of the proposed Objectives would adversely and significantly impact the threatened spring-run Chinook salmon adult holding lifestage during July-September in drier year types (Appendix A6, pg. A6-422 and A6-423), and the spawning and embryo incubation lifestages during September in most water year types (Appendix A6, pg. A6-412).	
309	133	[Att 1: Att 2:] Further, the Draft Staff Report contains no modeling to estimate the impacts on Yuba River water temperatures that would result from implementation of the proposed Objectives (pg. 7.6.2-88). The Draft Staff Report states, however, that its water temperature modeling for the American, Feather and Sacramento rivers is "indicative" of the results that the proposed Objectives would produce for other "Sacramento/Delta" tributaries (pgs. 7.6.2-88 and 7.12.1-67). Those modeling results demonstrate that the proposed Objectives likely would cause adverse water temperature impacts on special-status fish species in the lower Yuba River.	Please see the response to comment 309-11 for information on the new analysis for the Yuba River in Appendix H1b, Water Temperature Modeling and Fish Assessment for the Sacramento, Feather, American, and Yuba Rivers.
309	134	[Att 1: Att 2:] The Draft Staff Report does not provide information to support its conclusion that the Voluntary Agreements would result in potentially significant adverse water temperature impacts. The Draft Staff Report overstates potential adverse water	See comment response 309-11 for information on the new analysis for the Yuba River in Appendix H1b, Water Temperature Modeling and Fish Assessment for the Sacramento, Feather, American, and Yuba Rivers. Please see temperature result tables in Appendix H1b, Water

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		temperature impacts associated with implementation of the Voluntary Agreements (VAs), particularly regarding application to the lower Yuba River. The Draft Staff Report conclusion (pg. 9-111) regarding potentially significant water temperature impacts to aquatic species resulting from the VAs do not appear to be supported by quantitative data and are not supported by the modeling or impact analyses presented in the Draft Staff Report. Moreover, this conclusion contradicts the statement (pg. 9-107) that most of the effects on aquatic biological resources including fish, with a focus on native fish, resulting from implementation of the VAs would be expected to be beneficial, and any impacts less than significant. However, the Draft Staff Report also states that water temperature changes due to implementation of the VAs are “conservatively considered potentially significant” (pg. 9-111) due to the uncertainty in the timing and location of VA flow assets and possible changes in water temperatures. This conclusion is unsupported by the analyses presented in the Draft Staff Report.	Temperature Modeling and Fish Assessment for the Sacramento, Feather, American, and Yuba Rivers, including the new tables for the Yuba River, which show changes in temperature for the VA pathway. The temperature analysis in Chapter 9, Proposed Voluntary Agreements, page 9-142 in the 2023 draft Staff Report, explains why the temperature effects could be greater than what was modeled for the VAs.
309	135	[Att 1: Att 2:] The Draft Staff Report provides a broad characterization of the effects of dams and reservoirs on riverine processes that generally are not applicable to the Yuba River. The Draft Staff Report (pg. 3-2 through 3-6 and pg. 3-35 and 3-36) provides a generalized characterization of the effects of dams and reservoirs on flow regimes and sediment transport, including a loss of geomorphic processes related to the movement of water and sediment. Consideration of the effects of dams on flow regimes and riverine habitat should be river-specific. The information summarized below demonstrates why the Draft Staff Report’s characterizations are not appropriately applied to the lower Yuba River. • The U.S. Army Corps of Engineers’ (USACE) Englebright Dam represents the rim dam in the Yuba River Watershed. YWA’s New Bullards Bar Dam is not a rim dam and is located several miles upstream of Englebright Dam and Reservoir. • The Draft Staff Report (pg. 3-35) states “Dams also disrupt the	Englebright Dam and New Bullards Bar Dam can both be classified as “rim dams”. As outlined in Chapter 6, Changes in Hydrology and Water Supply, Section 6.2.2, Unimpaired Flow Scenario Assumptions, “Rim reservoirs are the large water supply reservoirs that “rim” the valley floor and provide water supply, flood control, hydropower and recreation on tributaries in the Sacramento River watershed and Delta eastside tributaries.” There is still a reservoir present behind New Bullards Bar Dam, and it meets this description. Englebright is still also a rim dam and represents the most upstream barrier to anadromous fish migration. The US Army Corps of Engineers was authorized by Congress to construct Englebright for the purpose of retaining hydraulic mining debris pursuant to the California Debris Act. Therefore, in this case Englebright’s very purpose is to “disrupt the natural transport of sediment” downstream. Although there may be adequate substrate for spawning in the lower river, the recommendations for increased unimpaired flow

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		natural transport of sediment (e.g., spawning gravel) and other materials (e.g., large woody material) that maintain spawning and rearing habitat in these lower reaches." The Draft Staff Report (pg. 3-35 to 3-36) references the NMFS (2014) Recovery Plan that identified the need for spawning habitat rehabilitation in rivers below dams, including the lower Yuba River. Studies have demonstrated that extensive amounts of substrate suitable for anadromous salmonid spawning are available in the lower Yuba River, capable of supporting up to an estimated 55,000 redds (RMT 2013), or 71,000 – 82,000 redds (YSF 2013). The only area in the lower Yuba River where spawning substrate is lacking is the bedrock-dominated uppermost 0.89 mile long Englebright Dam Reach, where the USACE has injected substantial amounts of spawning-sized gravel on an annual basis since 2007 (YCWA 2017). USACE has conducted annual salmonid redd surveys within and downstream of the gravel augmentation reach that demonstrates consistent utilization by spawning Chinook salmon (Campos and Massa 2012; Campos et al. 2013; Campos et al. 2014; Stearman and Massa 2015; Stearman and Massa 2016; Stearman et al. 2017; Stearman et al. 2018; Kowalik et al. 2019; Kowalik and Massa 2020; Laubach et al. 2021; Laubach and Nichols 2022). • The Draft Staff Report (pg. 3-5) suggests that altered flow regimes associated with dams and reservoirs tend to result in a loss of longitudinal and lateral connectivity, and that more natural flow regimes can increase the frequency and duration of lateral connectivity to riparian and floodplain habitats. For many dammed rivers, the downstream bankfull channels incise and become disconnected from their floodplains. However, due to the extensive amount of hydraulic mining alluvium present on the valley floor (Gilbert 1917; James et al. 2009), the lower Yuba River floodplain is overall net erosional and its large floods effectively evacuate sediment from the full width of the river corridor (Pasternack and Wyrick 2016). Over the entire lower Yuba River, topographic change detection analyses based on digital elevation model (DEM) differencing demonstrated that the bankfull channel was net depositional for all 3 survey epochs	on the Yuba are still appropriate. See Common Response 3.1, Fish Protection, on habitat benefit analysis. The statement on altered flow regimes limiting longitudinal and lateral connectivity was included in the 2017 Scientific Basis Report which underwent external scientific peer review. See Common Response 3.1, Fish Protection, on the 2017 Scientific Basis Report. Please see the response to comment 309-25.

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		(1999-2008, 2008-2014, 2014-2017), while the overbank area was net erosional (Gervasi and Pasternack 2019). These results indicate that the bankfull channel exhibits connectivity to its floodplain (Gervasi and Pasternack 2019). The active river valley overall is downcutting due to various processes that allow preferential scour of floodplains and terraces instead of the channel (Gervasi and Pasternack 2019).	
309	136	[Att 1: Att 2:] The Draft Staff Report states that altered water temperature regimes associated with dams and reservoirs have detrimental effects to coldwater species that generally are not applicable to the lower Yuba River. The Draft Staff Report (pg. 3-5) states that “Dams and reservoirs, and their associated operations, alter the temperature regime of rivers, often to the detriment of cold water species such as salmonids...”. Consideration of the effects of dams on thermal suitability conditions should be river-specific. The information summarized below demonstrates why the Draft Staff Report’s characterization of thermal suitability below dams and reservoirs is not appropriately applied to the lower Yuba River. The lower Yuba River is one of the few Central Valley tributaries that consistently has suitable water temperatures for salmonids throughout the year (RMT 2013; YCWA 2017). As referenced by NMFS (2017), YCWA (2010) describes specific physical and hydrologic factors that would result in the lower Yuba River continuing to provide the most suitable water temperature conditions for anadromous salmonids of all Central Valley floor rivers, despite potential long-term climate changes. This is primarily because New Bullards Bar Reservoir is a deep, steep-sloped reservoir with substantial coldwater pool reserves. New Bullards Bar Dam was constructed and became operational in 1969. With completion of New Bullards Bar Dam and Reservoir, operation of the Yuba River Development Project (YRDP) has resulted in dramatically lower water temperatures during summer and fall, and lower water temperatures when temperatures are relatively high during spring. YRDP operations result in dramatically significant beneficial effects to anadromous fish in the lower Yuba River, and provide water	Please see Common Response 7.6.2, Aquatic Biological Resources and Cold Water Habitat, for a discussion the Water Temperature Evaluation in the Staff Report, including for the Yuba River. Please also see the response to comment 309-25.

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		temperatures that otherwise would be extremely unsuitable and, in fact, lethal to spring-run Chinook salmon, fall-run Chinook salmon, steelhead and green sturgeon lifestages that occur during summer and fall in the lower Yuba River (YCWA 2022). Throughout the period of operations of New Bullards Bar Reservoir (1969 through present), which encompasses the most extreme critically dry year on record (1977) as well as the 2012-2016 drought, the cold water pool in New Bullards Bar Reservoir was not depleted, although changes were observed in the vertical water temperature profile in New Bullards Bar Reservoir (YCWA 2020). Even with future climate changes, New Bullards Bar Reservoir is expected to continue to provide sustained, relatively cold water into the lower Yuba River during the late spring, summer and fall of most years (YCWA 2010).	
309	1371	[ATT 1: ATT 3:] The Final Draft SBRS, pg. 5-8: "...allowable cover features include cobble (3 to 12 inches), which has uncertain suitability for rearing salmonids (it is not included as suitable cover in the San Joaquin River Restoration Program (2012) report)." This statement is misleading because it clearly intimates that there is uncertainty regarding cobble as suitable cover because it was not included in the San Joaquin River Restoration Program (2012) report. However, that report (pg. 46) states... "Gravel and Cobble/Boulder categories were not used because there are not significant areas of these features in Reaches 1B through 5." Clearly, cobble was not included because it was lacking in the study area, not because its utility as suitable cover was uncertain. Cramer and Ackerman (2009) concluded that, during the winter, Chinook salmon fry have a strong tendency to enter interstitial space among cobble and boulder substrates. Newly-emerged fry can occupy the voids of substrate comprised of 2-5 cm (0.8-2 in) diameter rocks, and larger juveniles utilize cobble or larger-sized substrates (greater than 7.5-cm (3 in) diameter) (Bjornn and Reiser 1991). Additionally, WDFW (2004) identified substrate elements with diameters greater than 3" (7.5 cm) as having preference values (HIS) greater than or equal to 0.5 as cover. Finally, cobble cover elements are common features in rearing areas of several tributaries to the Sacramento River (e.g.,	This section has been revised to reflect the updated VA habitat accounting requirements, which are described in Common Response 1.3, Revised Proposed Plan Amendments. Cobble may provide cover for small fish, but it is uncertain whether cobble provides benefits for larger juveniles, or any population-level benefits for juvenile rearing. Studies have found that juvenile salmon do not prefer cobble over no cover (Hampton 1988; Gard 2006) or do not include cobble in lists of suitable cover features (San Joaquin River Restoration Program 2012; Whipple et al. 2019). Beecher and Caldwell 2022, the updated version of the Washington Department of Fish and Wildlife 2004 report cited by the commenter only includes cobble as a substrate that juvenile salmon can be found near when no cover is available. It also includes a statement that this report should not be used without written agreement of Department of Fish and Wildlife or Ecology instream flow biologists.

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		Yuba River, Feather River, American River). To be clear, the inclusion of cobble and larger substrate as suitable cover feature types for rearing habitat in the VA habitat accounting protocols does not mean that VA rearing habitat would be constructed using cobble as a main cover feature type, but rather that the VA habitat accounting process would not ignore the documented utility of this feature type as suitable cover for rearing salmonids.	
309	137a	[ATT 1: ATT 3:] The Final Draft SBRS Analyses More Accurately Estimate Baseline Habitat Conditions in the Lower Yuba River than the Draft SBRS. Relative to the Draft SBRS, the Final Draft SBRS more accurately estimates the amount of existing instream rearing and floodplain rearing habitat. The Final Draft SBRS (pg. ES-5, Figure ES-2, Table ES-3) concludes that the combination of instream rearing and floodplain habitat needed to support 25 percent of the doubling goal population is projected to be met in the lower Yuba River in both the reference condition and VA scenario. However, the estimation methodology still overestimates the amount of juvenile rearing habitat needed in the lower Yuba River to meet the salmon doubling objective (or portion thereof), as described in Comment 2 [137b].	Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project. Please see Common Response 3.1, Fish Protection, for information on interpreting the habitat analyses. Please also see the response to comment 309-137b.
309	137b	[ATT 1: ATT 3:] The Final Draft SBRS Analysis Overstates the Habitat Needed to Support the Salmon Doubling Objective for the Lower Yuba River. The Final Draft SBRS states that 305 acres of rearing habitat are necessary in the lower Yuba River to achieve the salmon doubling objective (p. 5-5, Table 5-2). However, the methodology employed in the Final Draft SBRS significantly overestimates the amount of salmon rearing habitat needed to support the salmon doubling goal, or fractions thereof. The Final Draft SBRS (pg. 5-5) states: “The individual fry-rearing territory size requirement (Table 5-2) applies to all fry produced by the doubled number of adults before any growth, movement, or juvenile mortality.” [underline emphasis added].	The habitat need was estimated conservatively. Additional analyses included in the Scientific Basis Report Supplement demonstrate that the habitat needs for a larger number of younger fish are equivalent to those of fewer larger fish (i.e., accounting for growth and mortality) so growth and mortality would be unlikely to significantly influence the results. The ESHE model assumes that fish are continually moving downstream but in reality fish could be gathering together in the same habitat areas and holding there for some period of time. In addition, the ESHE model represents the habitat need for the average number of spawners that would achieve the doubling goal, but in some years there would be more or less spawners than the average, resulting in potentially higher or lower habitat needs. Thus, the conservative parameterization used to estimate the doubling goal habitat area ensures that adequate habitat would be available.

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		Excluding the parameters of growth, movement, and juvenile mortality results in an implicit assumption that all of the juveniles produced over the course of an entire annual spawning season are present to rear in the river at one time (or on any single day) over the February through June period. It has been very well documented that not all spawning occurs on one day, not all juveniles emerge from the gravel to take up residence in the river on one day, and not all rearing juveniles are present on one day (Moyle 2002; Quinn 2005; RMT 2013). This dynamism incorporated into the Emigrating Salmonid Habitat Estimation (ESHE) model was accounted for and included in the assessment of juvenile rearing habitat necessary to meet Chinook salmon targets for the San Joaquin River Restoration Program (SJRRP 2012). In reality, juveniles are emerging from the gravel over time, and because juveniles are continuously emigrating from the river over time, specifying that habitat is needed for the total number of juveniles produced during an entire year on a single day is unrealistic and significantly overestimates the amount of habitat necessary to support achievement of the salmon doubling objective. Elimination of the variability inherent in multiple biological processes results in an estimate that is several times greater than the amount of habitat that actually would be needed to support achievement of the salmon doubling goal objective, or fractions thereof. The Final Draft SBRS (pg. 5-5) stated that they did not include the critical components of growth of individuals, emigration from the river, or juvenile mortality factors because they vary significantly in quality and availability across the VA watersheds. Although it is recognized that there is variability in these factors across VA watersheds, that should not preclude inclusion of them in the estimation procedures for “habitat needed”. Consequently, using the parametrization for growth of individuals, emigration from the river, or juvenile mortality factors included in the ESHE model would provide equitable treatment among watersheds and would provide a much more realistic methodology.	The Scientific Basis Report Supplement now includes an estimate of the uncertainty in the doubling goal habitat estimates, which quantifies the variability in biological processes referred to by the commenter. Please also see the response to comment 309-2.

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309	137c	[ATT 1: ATT 3:] The Final Draft SBRS Analysis Understates the Habitat Expected to be Realized with Implementation of YWA's VA Habitat Enhancement Measures. The Final Draft SBRS has interpreted that YWA's VA commitment of 150 (footprint) acres only counts if it is "suitable" habitat, as defined in the Final Draft SBRS. The Final Draft SBRS estimates (through a series of assumptions) that YWA's commitment would only produce about 93 acres for in-channel and floodplain habitat measures combined. In other words, according to the Final Draft SBRS, about 57 of the 150 acre footprint would not be "suitable", and therefore not fully contribute to the estimated amount of habitat necessary to meet the salmon doubling objective (or fractions thereof). It is difficult to tell from the information provided (or not provided) in the Final Draft SBRS how the discounting of habitat is allocated between in-channel versus floodplain habitat. The only relevant quantity that the Final Draft SBRS provides is over the entire period of simulation for the combined in-channel and floodplain habitat (Table ES-3, pg. ES-8). However, examination of Figure 6-3 (pg. 6-7) in the Final Draft SBRS indicates that, after applying the specified habitat suitability criteria, the 50 acres of VA in-channel habitat "footprint" results in about 25 acres of "suitable" in-channel habitat. If the total of in-channel and floodplain habitat that YWA's VA would produce is 93 acres, as the Final Draft SBRS states, then the application of the specified habitat suitability criteria results in a reduction of the 100 floodplain habitat "footprint" to about 68 acres of "suitable" floodplain habitat ($93-25=68$). This significant discounting of VA habitat enhancement footprints as "suitable" habitat is not adequately explained. Nonetheless, the habitat-discharge relationships used in the discounting of in-channel rearing habitat (see Comment 4 [137d]), and the assumptions applied to estimation of the frequency of occurrence of Meaningful Floodplain Events (MFE) (see Comment 5 [137e]), result in underestimation of the amounts of in-channel rearing habitat and floodplain rearing habitat contributed by YWA's VA.	The Scientific Basis Report Supplement habitat analyses estimate the amount of suitable habitat because fish are only able to benefit from suitable habitat that provides the conditions necessary for their growth and survival. As described in Chapter 5, Analytical Approach to Evaluating Assets, of the final Draft Scientific Basis Report Supplement, the habitat analyses relied on the flow-habitat relationships provided by the commenter (Yuba Water Agency), SacWAM modeling of the flows expected to result from the reference condition and VA scenarios, and estimates of water temperature provided by the commenter. The habitat commitment from YWA is not "discounted;" rather, the results indicate the amount of suitable habitat expected to occur under the VAs based on the information used in the modeling, which was primarily provided by the commenter. In the final Draft Scientific Basis Report Supplement, the methods are explained in Chapter 5 and the results are presented in Chapter 6, Anticipated Biological and Environmental Outcomes, including subdivisions for in-channel and floodplain habitat. It is unclear what information the commenter believes is missing. Please see the responses to comments 309-137d and 309-137e.
309	137d	[Attachment 3 of Attachment 1: Document titled Attachment 2 Technical Comments on the September 2023 Final Draft	The benefit analysis in the final Draft Scientific Basis Report Supplement does not differentiate the relative contributions of

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		Scientific Basis Report Supplement] YWA's commitment in the Term Sheet to the March 2023 MOU specified a VA Non-Flow measure habitat enhancement of 50 acres of in-channel Chinook salmon rearing habitat. The Final Draft SBRS (pg. 6-7) states that: "Figure 6-4 shows the median annual in-channel habitat area (acres) for the reference condition and VA scenario by watershed and water year type. Across most water year types, the VAs offer more in-channel rearing habitat than the reference condition in the American, Sacramento, and Yuba Rivers..." The Final Draft SBRS (pg. 6-7) goes on to state that the Yuba River VA provides 3 to 11 percent more (7–25 acres) in-channel rearing habitat in the lower Yuba River. In the subsequent description of the discounting of habitat suitability, it is unclear what resulted in this significant reduction in estimated habitat contributed by the Yuba River rearing habitat enhancement measures. What proportion of the suitability discount was due to the suitable habitat-flow relationship applied to the period of simulation, and what proportion of the suitability discount was due to thermal suitability is not specified. First, the flow-specific habitat suitability values used in the Final Draft SBRS (Table 5-6, pg. 5-12 and 5-13) do not appear to be consistent with that which was provided to FlowWest (see Comment 8 [137h] under Specific Comments, below). Second, it is not clear how the discounting procedure associated with water temperature suitability is applied to estimate the amount of habitat potentially provided by the VA non-flow habitat enhancement measures. The manner in which the Final Draft SBRS applied the habitat-discharge relationships and water temperature suitability criteria results in a substantial underestimate of the amount of rearing habitat that would result from YWA's VA habitat measures.	each contributing factor to the resulting suitable habitat estimates. Please see the response to comment 309-137h. The application of temperature to the habitat analysis is explained in Section 5.1.4, Application of Temperature Criteria for Spawning and Rearing Habitat, of the final Draft Scientific Basis Report Supplement. The commenter has not provided information on how exactly the methods in the Final Draft Scientific Basis Report Supplement have underestimated the Yuba River VA habitat commitments.
309	137e	[ATT 1: ATT 3:] The Final Draft SBRS Analysis Understates the Frequency that the Yuba River VA Floodplain Rearing Habitat Commitment Meets the MFE criteria.	Please see the response to comment 309-2.

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		The Final Draft SBRS (pg. 6-10) states that, on the lower Yuba River, the reference condition MFEs meet 25% of the estimated amount of floodplain rearing habitat necessary to support the salmon doubling objective in 11% of the years, by contrast to the VA MFEs which meet 25% of the salmon doubling objective floodplain rearing habitat in 72% of the years. While the results in the Final Draft SBRS (pg. 6-10) demonstrate that the Yuba River VA MFEs meet 25% of the salmon doubling objective for floodplain rearing habitat significantly more often than the reference condition, the Final Draft SBRS MFE methodology assumes that inundation of at least 30 days is necessary to meet MFE criteria because SacWAM is modeled on a monthly timestep. However, the Draft SBRS acknowledges that at least 7 days of inundation are needed to provide meaningful floodplain productivity and that minimal additional gain in productivity is achieved after 21 days of inundation, based on best available scientific information. The Final Draft SBRS underestimates the frequency that the MFEs could be met under the Yuba River VA because hydrologic models with a higher resolution than a monthly timestep are available for the river. The MFE calculation methodology used in the Final Draft SBRS does not consider YWA's Operations Model for the Yuba River Development Project. However, the Draft VA Strategic Plan (Appendix G1 to the Draft Staff Report; pg. 53) states... "For instances where daily data or tributary-specific high-resolution models are available, a range of combined duration and frequency targets may adhere to the rationale of the MFE and provide opportunities for adaptive management", and identifies the following options for design criteria associated with inundation regimes for VA floodplain habitat: "If modeled duration of inundation is between seven and 18 days, floodplain projects should target at least two distinct inundation events in the February through June rearing period. Grosholz and Gallo (2006) recommend repeated flood pulses at intervals of 2- to 3-weeks to best support native fish." "If floodplain projects are designed for duration of inundation greater than 18 days, a single inundation occurrence during the	

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		February through June rearing period will satisfy the intention of the MFE criteria.” Consequently, the Final Draft SBRS MFE estimation of the frequency of MFE occurrence for the Yuba River VA habitat enhancement measures could be improved by utilizing the higher resolution (daily) YWA Operations Model for its Yuba River Development Project.	
309	137f	[ATT 1: ATT 3:] The Final Draft SBRS (pg. 2-7) provides one sentence acknowledging that the Yuba River was heavily affected by hydraulic mining in the nineteenth century. However, it does not address the fact that hydraulic mining during the gold rush era, more than 100 years before development of the Yuba River Development Project, fundamentally altered the landscape of the Yuba River Watershed, depositing hundreds of millions of cubic yards of debris across tens of thousands of acres of instream, side channel, riparian and floodplain habitat in and along the Yuba River. The impacts of hydraulic mining continue to affect the availability and suitability of fisheries habitat in the lower Yuba River and its floodplain today. The proposed Yuba River VA's habitat restoration components are designed to ameliorate the impacts of hydraulic mining and restore ecosystem functions that are otherwise unavailable due to anthropogenic disturbances that preceded the Yuba River Development Project.	The final Draft Scientific Basis Report Supplement already acknowledges the impacts of hydraulic mining so no further edits are necessary. Please see Common Response 1.1, General Comments, for responses to comments that make general comments, do not raise specific environmental impacts of the project, or do not raise specific economic effects of the project.
309	137g	[ATT 1: ATT 3:] The Final Draft SBRS, pg. 2-8: “The current flow regime on the Yuba River does not allow for floodplain inundation during the winter and spring juvenile growth periods.” This statement is an oversimplification and is factually incorrect. Although the lower Yuba River floodplain is defined by functionality and not necessarily by a geospatial boundary, 5,000 cfs is a very general characterization of bankfull flow. Some locations along the lower Yuba River exhibit overbank flow well below 5,000 cfs, while other locations exhibit overbank flow at flows higher than 5,000 cfs. During any given year, there is an 82% chance the lower Yuba River will spill out of its bankfull	The commenter has not provided any information on floodplain inundation during the winter and spring juvenile growth periods that would refute the quoted statement in the final Draft Scientific Basis Report Supplement.

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		channel and a 40% chance that the floodway will be fully inundated (Wyrick and Pasternack 2012).	
309	137h	[ATT 1: ATT 3:] The Final Draft SBRS, pg. 5-8: "VA proponents provided estimates of how depth and velocity habitat suitability is expected to change with flow, and the analyses in this report reproduced those flow-suitable habitat relationships (described in Table 5-5 through Table 5-7)." Examination of the Final Draft SBRS's Table 5-6, which displays the habitat-flow relationships that were used to estimate VA instream rearing habitat, demonstrates that what was used in the Final Draft SBRS analysis is not consistent with the information that YWA provided to FlowWest. Table 5-6 states that "The additional number of suitable VA acres at three flow levels are as follows: minimum (10% of proposed acres suitable at 880 cfs), maximum (55% of proposed acres suitable at 5,000 cfs), and target (90% of proposed acres suitable at 2,500 cfs) flow." However, YWA provided FlowWest habitat-flow relationships that showed that, in the lower Yuba River, the instream rearing habitat provided by YWA's VA would be, according to the State Team's depth and velocity criteria, at least: (1) 50% suitable, on an areal extent basis at baseflow (730 cfs above Daguerre Point Dam, and 560 cfs below Daguerre Point Dam); and (2) 80% suitable at 2,000 cfs, and would remain at least 70% suitable up to bankfull flows (for assessment purposes, 5,000 cfs) [Footnote 1: For these purposes, the referenced flows were at Smartsville for above Daguerre Point Dam and Marysville for below Daguerre Point Dam locations.]. The amount of instream rearing habitat provided by YWA's VA should be estimated using the flow-habitat relationships provided by YWA, which would demonstrate greater amounts of resultant instream rearing habitat.	The Yuba River flow-habitat curves in the Scientific Basis Report Supplement have been replaced with new data provided by Yuba Water Agency.
309	138	[Att 1: Att. 4:] This technical memorandum has been prepared at the request of the Yuba Water Agency (YWA). This technical memorandum analyzes the methods and results of the SWRCB staff's SACWAM model simulations of unimpaired flow alternatives described in the Draft Staff Report (DSR). The DSR makes statements about the intended approach proposed to be used to implement the numerical objectives of the proposed plan amendments to the Bay-Delta Plan. The DSR states at Page 5-17	Please see the response to comment 309-51. Also see Common Response 1.3, Revised Proposed Plan Amendments, for a response to comments on the regulatory pathway and implementation methodology.

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		“all water users on these tributaries, except those with a de minimis effect on flows (e.g., 10 AF/yr or less), would have responsibility for contributing to achievement of the objective” and “The compliance points for the inflow objectives would be the confluence of the tributaries with the Sacramento or Feather Rivers or the Delta” and at DSR Page 5-12, 13 “Immediately upon adoption of the proposed Plan amendments, the State Water Board would undertake and expedite efforts to develop initial implementation tools followed by refined tools as needed for determining streamflows and accounting methodologies to administer the water right priority system to achieve the new flow objectives.” Other than these and other general statements about the “default implementation,” little information is given about what conditions the SWRCB would require for implementation plans intended to meet the numerical objectives for unimpaired flow. The only other information provided to inform water users is the SACWAM model. The DSR at Page 1-16 states “The environmental analyses use both quantitative and qualitative approaches to compare the potential impacts to baseline conditions. For the quantitative evaluation, SacWAM was used to simulate changes in hydrology and water supply that could result from the proposed Plan amendments, proposed VAs, and other flow alternatives (including a Low Flow Alternative and a High Flow Alternative) discussed further below.” SACWAM simulates the Sacramento River watershed and Bay-Delta and includes numerous locations for compliance with the inflow objectives. In the Yuba River watershed, there are six instream flow requirement (IFR) locations. Since the SAWAM model includes implementation details, and since the SACWAM model results are used as the basis for the DSR analysis of impacts of requiring compliance with the unimpaired flow objectives, the SACWAM results are the best information available to determine the contribution of flow each major water right holder in the Yuba River watershed would be required to make in meeting the unimpaired flow objectives. All of the modeling results discussed in this technical memorandum were extracted from the SACWAM modeling results that the SWRCB has made available in association with the DSR and do not reflect	

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		any original technical work. For reference, Exhibit 1 [Att. 1: Att. 4: Att. 1] to this report shows the Yuba River watershed and major facilities.	
309	139	[Att 1: Att. 4:] SACWAM Results of Flow Releases and Bypass Of the six Yuba River watershed IFR locations included in the SACWAM model, YWA's facilities are required to operate for five of these locations, the Nevada Irrigation District (NID) is required to operate for two locations, PG&E is required to operate for one location. And South Feather Water and Power Agency (SFWPA) is required to operate to one location. Table 1 [Att.1: Att 4: Exhibit 1] lists the IFR locations in the Yuba River watershed and the entities operating for those locations in the model. Summary of Results for Compliance Locations The SACWAM model includes an existing condition simulation and simulations for 35, 45, 55, 65 and 75 percent of unimpaired flow requirements. Because the DSR states the proposed plan amendments numerical objectives would target the 55% unimpaired flow requirement, that simulation is used to illustrate the relative contribution each water user would provide. The two IFR locations on the lower Yuba River (Englebright outflow and the Yuba River outflow requirement), Middle Yuba River and South Yuba River are the four locations that effect the facilities of YWA, NID and PG&E. Because the SACWAM model is coded so that SFWPA's diversion are prioritized over YWA's diversions at New Bullards Bar Reservoir, and because the volume of unimpaired flow to the New Bullards Bar Reservoir IFR location is always greater than 55% of total unimpaired flow even with SFWPA's diversions, SFWPA's operations at their Slate Creek diversion are not affected by the imposition of the IFR for New Bullards Bar Reservoir inflow and this requirement results in no increase in bypasses at any time by SFWPA for the 94 year simulation in SACWAM. For the lower Yuba River, YWA facilities are operating for both Englebright outflow and Yuba River outflow as either of these requirements can control releases from YWA's New Bullards Bar Reservoir,	Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, regarding Yuba River model representation and operations.

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		with the Englebright outflow location controlling in the winter and early spring. It is unclear why the Englebright outflow requirement is included in the model, as it results in YWA releasing water that results in a Yuba River outflow greater than 55% of unimpaired flow. To meet all five locations with controlling IFRs, the SACWAM model requires YWA to release and bypass water at four different locations it controls: (1) New Bullards Bar Reservoir on the North Yuba River; (2) the Log Cabin Diversion Dam on Oregon Creek, which is a tributary of the Middle Yuba River; (3) Our House Diversion Dam on the Middle Yuba River; and (4) forgo diversions irrigation deliveries on the lower Yuba River at Daguerre Point Dam. YWA, however, does not have unimpaired flow available to it at three of these locations. First, SFWPA's diversions from Slate Creek into the Feather River watershed impair inflows to New Bullards Bar Reservoir. Second, NID's diversions impair Middle Yuba River flows to Our House Diversion Dam. Third, PG&E's and NID's facilities impair South Yuba River flows to Englebright Reservoir and therefore the lower Yuba River. The water available to YWA's facilities therefore is not close to the full unimpaired flow above those facilities. NID, PG&E and SFWPA, however, do receive unimpaired flow from the watersheds above their facilities. Moreover, as explained below, because the SACWAM model's compliance points in the Middle and South Yuba Rivers are located many river miles below NID's and PG&E's facilities, those entities—unlike YWA—essentially are allowed to take advantage of unimpaired accretions downstream of their facilities to avoid releasing anything like any percentage of unimpaired flow under the Inflow and Cold Water Habitat Objectives proposed by the DSR. Table 2 [Att.1: Att 4: Exhibit 2] below summarizes the bypasses of flow by YWA, NID and PG&E's respective storage and diversion facilities as a percentage of the water available to each of them at their facilities for periods when the DSR's SACWAM modeling requires releases from YWA facilities to satisfy a 55% of unimpaired flow requirement at either the Englebright-outflow or Yuba River-outflow IFR. The months of November through the following June of water years are listed. In the following July-	

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		October period, YWA releases to satisfy the existing Yuba Accord streamflow requirements are always greater than the required unimpaired flow. The results of table 2 demonstrate how the SACWAM modeling of the asserted 55% of unimpaired flow IFR results in widely disparate actual requirements among the Yuba watershed facilities operated by YWA, NID and PG&E. The modeling shows that YWA would be required to release significant more than 55% of inflow much of the time in most years, with the percentage of inflow YWA being required to release usually exceeding 70%. In contrast, in the SACWAM modeling, the asserted 55% unimpaired flow IFR never requires: (1) NID to bypass on average more than 15% of unimpaired flow at its Milton facility, with the percentage dropping as low as 2%; and (2) NID and PG&E to bypass more than an average of 46% of unimpaired flow at their coordinated Bowman and Spaulding facilities, with that percentage dropping as low as 16%. The very large difference between the percentage of required inflow to be released or bypassed between YWA at its facilities and NID's and PG&E's upstream facilities is most evident in the Middle Yuba River. On that river, in April and May, YWA releases over 70% of available inflow, while, at Milton Diversion Dam, NID is releasing only 2% to 6% of unimpaired flow and only 36% and 44% is released to the South Yuba River in the months of April and May. Although as modeled, YWA's, NID's, PG&E's and SFWPA's facilities in the Yuba River watershed are included in the SACWAM's modeling priorities to operate to the IFR compliance locations, because the model's approach significantly limits the amount of water NID, PG&E and SFWPA are required to release to meet required flows, while YWA is required to bypass significantly higher percentages of inflow. This is a result of the SACWAM model's IFR compliance point on the North Yuba River being located well below SFWPA's diversion on Slate Creek, which is tributary to the North Yuba; and the IFR compliance points on the Middle Yuba and South Yuba Rivers being located many river miles downstream of NID's and PG&E's facilities and actually near the confluence with the Yuba River. In fact, the	

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		South Yuba River's confluence with the Yuba River is just upstream of Englebright Reservoir. Substantial unimpaired accretions to the North Yuba, Middle Yuba and South Yuba Rivers between SFWPA's, NID's and PG&E's respective facilities and the IFR compliance points closest to them. The SACWAM model therefore allows SFWPA, NID and PG&E to take advantage of substantial unimpaired flows that reach the river system downstream of their facilities even though those diverters have no water rights to those intervening flows. This is why the SACWAM modeling allows those entities to release very substantially less than the asserted 55% of unimpaired flow requirement.	
309	140	[Att.1: Att. 4: Exhibit 1: Table titled Table 1: Instream Flow Requirement Locations and Entities Operations Required for Compliance as modeled]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	141	[Att.1: Att. 4: Exhibit 2: Table titled Table 2: Average monthly resulting percent of years YWA operating to 55% unimpaired flow requirement at Englebright IFR or Yuba Outflow IFR]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	142	[Att. 1: Att. 4:] Middle Yuba River Instream Flow Requirement Effects on Facility Operations Examination of the resulting changes compared to existing conditions in operating to the 55% of unimpaired flow requirement on the Middle Yuba River illustrates the impacts of the approach taken in the SACWAM modeling to implement a water right priority for these requirements. The Milton Diversion Dam is located 42.2 river miles above the Middle Yuba River confluence with the North Yuba River and sits just below Jackson Meadows Reservoir, which is NID's major storage reservoir on the Middle Yuba River. The SACWAM model's Middle Yuba River IFR compliance point, however, is located just above that confluence. YWA has two diversion dams, Our House Diversion Dam at river mile 12 on the Middle Yuba River and Log Cabin Diversion Dam on Oregon Creek, tributary to the Middle Yuba River.	Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply for a response to comments regarding the Yuba River model representation and operations.

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		SACWAM results for the asserted 55% unimpaired flow scenario were used to calculate, for each month, the number of years additional releases above other flow requirements are made at NID's Milton Diversion Dam and at YWA's two diversion dams. Those other flow requirements exist under, among other things, FERC licenses and water-right permits. Table 3 [Att.1: Att. 4: Exhibit 3] lists for each month the number of years and percentage of years NID and YWA are bypassing water to meet the 55% of Middle Fork River IFR compliance point. Table 3 [Att.1: Att. 4: Exhibit 3] shows that, in the months of January to June in almost all years, the SACWAM model requires YWA to bypass additional flows above all other requirements, while, in the January-April period, the model requires NID to make similar additional release in only in 5 months of the total 372 months, and to only bypass flows about 40% of the time in May and June. To further examine the proportion of available water supplies that YWA and NID facilities bypass under the asserted 55% unimpaired flow scenario, the volumes of additional release were calculated from the SACWAM results. Because YWA's facilities route water to New Bullards Bar Reservoir through the Camptonville tunnel, and NID's Milton facilities similarly route water to other facilities, the amount of water diverted under existing conditions and under the asserted 55% unimpaired flow scenario were also calculated from the SACWAM results. For reference, the average annual unimpaired inflow to Milton Diversion Dam calculated from the SACWAM unimpaired flow scenario is 75,202 AF and the unimpaired flow of the Middle Yuba River is 330,946 AF. Of this amount, in the existing condition, the SACWAM model indicates that NID releases only 3,536 AF to the Middle Yuba River below the Milton Diversion Dam, but diverts 71,667 AF out of the watershed. Table shows that, under the asserted 55% unimpaired flow scenario, NID would bypass only an additional 1,127 AF below Milton Diversion Dam on average each year. That would reduce NID's average annual diversion by only 1.6%.	

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		In contrast, Table 4 [Att.1: Att. 4: Exhibit 4] shows that, in the asserted 55% unimpaired flow scenario, the SACWAM model requires YWA to bypass, at its facilities lower in the Middle Yuba watershed, an average of 128,877 AF per year more than it is requires in the existing condition. The further result is that the SACWAM model, in the asserted 55% unimpaired flow scenario, reduces YWA's diversions to New Bullards Bar Reservoir through the Camptonville Tunnel from 200,144 AF in the existing condition to an average of 72,519 AF. This is an average annual diversion of 64%.	
309	143	[Att.1: Att. 4: Exhibit 3: Table titled Table 3: Number and Percentage of Years YWA and NID Releasing water to meet the SWRCB Middle Yuba IFR 55% of Unimpaired Flow]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	144	[Att.1: Att. 4: Exhibit 4: Table titled Table 4: Monthly Average Change in Bypass Flow Volume from Existing Condition to 55% UIF scenario at YWA and NID facilities on the Middle Yuba River and Existing Condition and 55% UIF monthly average flow volumes]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	145	[Att 1: Att. 4:] Limited Utility of the Middle Yuba River Unimpaired Flow Requirement The DSR's Appendix A1, states at page 1-7, "Multiple IFRs were added on each tributary to represent the assumption that all users in the watershed, whether upstream or downstream, would be responsible for contributing to the new modeled instream flow requirement. However, proposed Plan amendments may include a requirement only at the bottom of each watershed that could require upstream users to contribute more or less than downstream users based on specific water rights priorities." Even though the DSR states that implementation plans under the proposed water quality objectives that include the asserted 55% of unimpaired flow requirement may not follow the SACWAM modeling, the model's application of an IFR compliance location at the mouth of the Middle Yuba River provides an example of how the IFRs as modeled cause impacts with little to no increase in contribution to Delta inflows.	Please see Common Response 7.8, Energy and Hydropower, regarding Colgate Powerhouse and Yuba Water Agency. Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for a response to comments about Yuba River model representation and operations.

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		The requirement for 55% of unimpaired flow at the Middle Yuba River compliance point results in an average of 128,877 AF of water bypass YWA's facilities to divert water through the Camptonville Tunnel into New Bullards Bar Reservoir, which makes it available to the New Colgate Powerhouse. Although SACWAM does not include power generation results, the long-term average amount of power generation per acre-ft of release through the powerhouse is 1.2 MWh/AF (the DSR at Appendix A5 at Page A5-20 states 1.16). Therefore, the Middle Yuba IFR results in an average reduction in more than 154,000 MWh of lost generation. Because, in the existing condition, YWA's releases of water from New Bullards Bar Reservoir contribute to Delta inflows just as much as flows that reach the Middle Yuba IFR compliance point, requiring that the water flow to that compliance point, rather than be diverted to New Bullards Bar, results in no additional contribution to Delta inflows, but reduces YWA's hydroelectric generation by approximately 154,000 MWh annually—for no particular reason. In this scenario, the SACWAM model nonetheless allows NID to divert on average 22% of the unimpaired flow of the river annually.	
309	146	[Att.1: Att. 4: Attachment 1: Graph titled Exhibit 1- Map of the Yuba River Watershed and Major Facilities]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	147	[Att. 1: Att. 5:] SACWAM Simulation of Unimpaired Flow Scenarios Under the Proposed Objectives Fundamentally Biases the Operations and Priorities for Beneficial Use of Water from the Yuba River Development Project, and is not a Realistic Representation of how the Project Would, or Even Could, Be Operated The SACWAM simulation of operations produced with the SWRCB's Draft Staff Report of the Yuba Water Agency's (YWA) Yuba River Development Project (YRDP) uses a set of operating rules to simulate the unimpaired flow scenarios (UIF) under the Draft Staff Report's proposed Inflow and Cold Water Habitat Objectives which significantly alter the operations of New Bullards Bar Reservoir compared to the Existing Condition and VA simulations and is much different from how the project is	Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for a response to comments about detailed operations of specific projects, carryover storage targets and SacWAM reservoir buffer pools, and regarding Yuba River model representation and operations.

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		actually operated. The YRDP is operated to achieve multiple objectives and beneficial uses of water, which include operations for the conditions of the SWRCB's order implementing the Yuba Accord instream flows to benefit listed salmonids in the lower Yuba River, to facilitate water transfers to other areas of the state, local water supply, power generation and flood control. Some of the most significant benefits from these operations are the release of storage through the summer and early fall to deliver irrigation supplies to local farmers, achieve cooler water in the lower Yuba River, facilitate the Accord transfers and provide power generation during the critical summertime peak demand. Under the proposed Inflow and Cold Water Habitat Objectives, the SACWAM modeling is based on different percentages of unimpaired flows (UIF) being applied as minimum streamflow requirements (the UIF scenarios). The SACWAM modeling of the UIF scenarios includes a carryover storage metric that results in the release of water from New Bullards Bar's storage only down to 750,000 acre-ft for the end of September, if runoff is sufficient to meet this target. This target of 750,000 acre-ft is 100,000 acre-ft higher than the target storage that YWA uses in actual operations and as modeled for the existing conditions in SACWAM. That 750,000 acre-ft target also is 150,000 acre-ft higher than the end of September target of 600,000 acre-ft that is the basis for Yuba Water Agency's proposed voluntary agreement. The DSR's Appendix A1 states, at Page A1-16, the purpose of this change from existing conditions is an attempt to limit the drawdown of storage to maintain the cold water pool in an attempt to avoid higher summer and early fall water temperatures in the lower Yuba River under the greater operational burden of springtime releases for the unimpaired flow objective. The result of this scenario's criteria to maintain higher storage levels is to change the focus of YRDP operations for the multiple objectives discussed above to a single overarching objective of implementing the UIF requirements under the proposed Inflow and Cold Water Habitat Objectives. These effects of this change, as shown in the SACWAM results for	

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		New Bullards Bar Reservoir outflow and lower Yuba River flow, include significantly reducing summertime power generation flows through New Colgate Powerhouse, the release point for power generation from the reservoir; and eliminating Yuba Accord transfers. Figure 1 is a plot of the monthly storage volumes in thousand acre-ft (TAF) for the top of the reservoir-storage buffer zone as modeled in SACWAM for the existing condition and the 55% UIF scenario. As seen in the figure, the 55% UIF scenario's significantly higher top of buffer zone is very close to the flood reservation pool in the winter months, which is the top of conservation zone in the model and this buffer zone is so high that it consumes nearly all New Bullards Bar's available discretionary storage space below the flood-control reservation. This restriction on discretionary storage required by the UIF scenario's buffer pool results in constraints on New Bullards Bar Reservoir releases for all purposes. In addition, holding storage at higher volumes throughout the year would have unintended consequences.	
309	148	[Att. 1: Att. 5:] If, however, all the real-world regulatory constraints that apply to the YRDP were implemented in the SACWAM modeling, that modeling's wholesale revisions to the multi-purpose operations of the YRDP, and more specifically New Bullards Bar Reservoir storage management and releases, under a 55% UIF scenario would show very different—and unmodeled—results. One key example of the real-world requirements that the SACWAM modeling does not consider are the FERC license and SWRCB water right conditions for the YRDP that regulate flow fluctuations in releases from YRDP facilities. This set of license and permit requirements requires YWA to maintain flows at higher than instream requirements when the previous period five day running average releases have been at higher levels and these restrictions only allows for limited reductions in flow releases. If the SACWAM modeling could (as it is a monthly model) and actually did consider the flow fluctuation requirements that FERC and the SWRCB itself apply to YRDP operations in the modeled UIF scenarios, the modeling for the proposed Inflow and Cold Water Habitat Objectives reflected in the Draft Staff Report would show much greater reductions in	Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply, for a response to comments about carryover storage targets and SacWAM reservoir buffer pools, and comments about Yuba River model representation and operations, including regarding flow fluctuation.

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		storage, and much greater shortages in YWA's irrigation deliveries, because FERC's and the SWRCB's flow fluctuation limits would require greater releases of water after a period of higher flows.	
309	149	[Att. 1: Att. 5: Exhibit 1: Graph titled Figure 1: SacWAM Monthly Storage Volumes in TAF for the Top of Buffer Zone for the Existing Condition and 55% UIF Scenarios]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	150	[Att. 1: Att. 5:] The SACWAM Modeled Operation of the YRDP for the 55% UIF scenario Would Eliminate Yuba Accord Transfers, a Significant Source of Statewide Supply in Droughts Under YWA's water purchase agreement with the Department of Water Resources (DWR) under which DWR purchases Yuba Accord transfer water, releases of stored water from New Bullards Reservoir are accounted for as transfer water only when storage is reduced below 705,000 acre-ft at the end of September, which is the baseline storage established through many years of operation of the YRDP prior to the Yuba Accord. [footnote 1: This end-of-September storage level is part of the definition of the "Baseline Storage Target Line" contained in Exhibit 1 [Att. 1: Att. 5: Att. 1] to the Water Purchase Agreement. Copies of the relevant pages of that Agreement's Exhibit 1, are included with this Technical Memorandum #2.] Using a target storage of 750,000 acre-ft not only eliminates stored water transfers, but also reduces by 45,000 acre-ft the amount of water that, under baseline conditions, would have been released from New Bullards Bar Reservoir, and potentially diverted from the Delta by the State Water Project (SWP) and the Central Valley Project (CVP) in the summertime. Under the Accord operations, this 45,000 acre-ft increment of water is not held in storage but is released to the Delta and is available for SWP and CVP project exports. In other words, using a 750,000 acre-ft end of September target storage not only eliminates Accord stored water transfers, but also eliminates additional, non-transfer water that flows from the Yuba River to the Delta, where it is available for statewide water supply to the CVP and SWP in baseline conditions. Because the shift of releases under the UIF	The Staff Report discloses that reduced Sacramento/Delta supply can result in reduced supply to agricultural and municipal use, and potentially less water available for transfers and groundwater recharge. The impact conclusions do not rely on the implementation of other water management actions and the availability of replacement supplies may be limited. Note that the Sacramento Water Allocation Model (SacWAM) has been updated since release of 2023 draft Staff Report to incorporate input from stakeholders and other refinements. These refinements as well as updated SacWAM simulations conducted in support of Chapter 13, Revised Proposed Plan Amendments, of the Staff Report are described in Section 13.4.2.1, Sacramento Water Allocation Model (SacWAM) General Updates. As described, the updated version of SacWAM (SacWAM version 2025.08.28) was used to simulate the starting point for the regulatory pathway (55 w/WSAs scenario) and the VA pathway (VA scenario) described under the revised proposed Plan amendments. To enable comparison of the 55 w/WSAs scenario to the flow scenarios analyzed in Chapter 6, Changes in Hydrology and Water Supply, and Chapter 7, Environmental Analysis, of the Staff Report, SacWAM version 2025.08.28 was also used to simulate baseline and the 35, 45, 55, and 65 scenarios. Please see the response to comment 309-56 for a discussion related to the New Bullards Bar end of September carryover storage targets and the approach used in SacWAM to model implementation of the carryover target that uses buffer pools of 750 TAF and 650 TAF to meet the carryover target. Updated reservoir storage and elevation information for New

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		scenarios is from the summertime to the springtime, and the springtime is typically when the CVP and SWP export facilities are constrained, the increased springtime releases do not replace the lost water supply of the summertime releases from the Yuba River to the Delta for potential export. Table 6.3-8 at the Draft Staff Report's page 6-41 ("Average Carryover Storage (thousand acre-feet) and Percent Differences from Baseline in Rim Reservoirs in the Scenarios for All Years") shows New Bullards Bar Reservoir carryover storage at the end of September for the 35, 45 and 55% UIF scenarios averaging higher than under baseline conditions. This comparison may be correct for the modeling results but is only a result of a wholesale revision to the operations of the YRDP, which are only achievable using the simplified operational rules implemented in SACWAM. Even with the operational changes of the UIF scenarios, Table 6.3-9 at the Draft Staff Report's page 6-41 ("Average Carryover Storage (thousand acre-feet) and Percent Differences from Baseline in Rim Reservoirs in the Scenarios for Critical Years") shows New Bullards Bar carryover storage reduced, in the 55% UIF scenario, by an average of 57 TAF below baseline conditions in critical years. That reduction in storage causes shortages in Yuba Water Agency's irrigation deliveries in those critical years. Under the 55% UIF scenario (and the 65% and 75% UIF scenarios), irrigation delivery shortages would be much greater than under existing conditions. Figure 2 [Att.1: Att. 5: Exhibit 2] is an exceedance probability plot of the change in annual volume (i.e., increased annual shortage as a positive value) from existing conditions compared to the five UIF scenarios for Yuba River irrigation diversions. This information is taken directly from SACWAM results for lower Yuba River diversions. For the 55% UIF scenario, Figure 2 shows that a minimum streamflow requirement of 55% UIF, as implemented in the SACWAM modeling, would increase shortages over the existing condition scenario in about 40 percent of years, with the increase in shortages exceeding 50,000 acre-ft for about 27% of years. For the 55% UIF scenario irrigation diversion shortages average over 70,000 acre-ft for one third of all years. For perspective, total maximum irrigation demand on Yuba Water Agency's	Bullards Bar Reservoir is presented in Section 13.4.3.2, Reservoir Storage and Elevation. Updated SacWAM modeling results for changes in Sacramento/Delta surface water supply are described in Section 13.4.4, Changes in Surface Water Supply. Related changes to groundwater supply are described in Section 13.4.5, Changes in Groundwater Supply. Resource impacts stemming from changes to hydrology and water supply, including impacts on agriculture and groundwater, are described in Section 13.7, Environmental Analysis.

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		supplies is about 300,000 acre-ft per year. Just the increase in shortages under the 55% UIF would exceed 50,000 acre-ft. As the Draft Staff Report's Appendix A1 recognizes, Yuba Water Agency already applies shortages, when necessary, usually in some critical years. (Draft Staff Report Appendix A1, p. A1-16 (50% minimum allocation in existing conditions).) Such shortages likely would cause Yuba County farmers to pump more groundwater in order to maintain their farms. Given the magnitude of shortages of YWA's agricultural supplies, the resulting indirect effect likely would be to cause all groundwater substitution transfers from the Agency's service area to stop, at least at the 55% and higher UIF scenarios. Historical information supports this conclusion. The Yuba Accord groundwater substitution transfers are constrained by available groundwater storage that is managed to be a sustainable supply. Over the seventeen-year history of the Yuba Accord, groundwater substitution transfers have averaged just over 30,000 acre-ft per year. In comparison, the increased average annual shortages of the 55% UIF scenario are over 24,000 acre-ft. As discussed above, the additional constraints of real-world constraints on YRDP operations like FERC/SWRCB flow fluctuation criteria probably would cause real-world agricultural water-supply shortages under a 55% UIF scenario to rise from the modeled 24,000 acre-ft annual average so that those shortages would equal or exceed the historical rate of groundwater substitution transfers. In other words, the agricultural water supply shortages that a 55% UIF scenario would impose on Yuba County farmers would make it impossible for those farmers to continue pumping groundwater to support transfers because they would need the groundwater for their own operations. In short, the groundwater basin would not be able to support both that additional groundwater pumping for local use and continued groundwater substitution transfers and remain sustainable under the Sustainable Groundwater Management.	
309	151	[Att. 1: Att 5: Exhibit 2: Graph titled Figure 2: Exceedance Probability Plot of the Change in Annual Volume (i.e., increased annual shortage as a	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.

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		positive value) from Existing Conditions Compared to the Five UIF Scenarios for Yuba River Irrigation Diversions]	
309	152	[Att. 1: Att. 5:] As Depicted In The SACWAM Modeling Reflected In The Draft Staff Report, The UIF Scenarios Would Eliminate Yuba Accord Transfer, Which Have Been A Water Supply Of Statewide Significance As modeled in SACWAM, one of the largest impacts of the UIF scenarios on Yuba Water Agency operations of the YRDP would be on Yuba Accord transfers. The Draft Staff Report does not discuss that impact. Instead, the DSR states—multiple times—that the large water supply reductions in the Sacramento/Delta region that the 55% UIF scenario would cause “could be partially replaced by local groundwater pumping, groundwater storage and recovery, recycled water use, water transfers and exchanges.” (Draft Staff Report, Page 6-97; see also Draft Staff Report, pp. 7.8-41 to 7.8-42, 7.12.1-118, 7.12.2-67 to 7.12.2-68, 7.20-50 (all identifying water transfers as a mitigation measure for implementation of UIF scenarios).) My analysis shows that this is highly unlikely to be true, given the very large impact of the 55% UIF scenario on Yuba Accord transfers, which have been a major source of transfer water statewide. The Draft Staff Report lists in Table 6.6-1 (reproduced below) historical water transfers from, to and within various regions during the 2007-2016 period. Of the transfers from the Sacramento River watershed, the table lists a total average annual transfer volume for this region of 273.8 TAF, of which 49.8 TAF are transfers within the Sacramento River watershed and the remaining 224 TAF (273.8 TAF – 49.8 TAF from the table) are transfers to other regions. During that 2007-2016 period, however, the average Yuba Accord transfer to south of Delta regions averaged 120 TAF (2007 to 2016 Yuba Accord Water transfer Annual reporting to the SWRCB per SWRCB Order 2008-25 Item 9). In other words, Yuba Accord transfers alone accounted for 44% percent of the annual average of all transfers from the Sacramento River watershed and 53% of the transfers to other parts of the state during the 2007-2016 period analyzed	Please see the response to comment 309-118.

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		by the Draft Staff Report. However, implementation of the 55% UIF scenario, as modeled in SacWAM, would cause Yuba Accord transfers to cease. As modeled in SACWAM and as discussed above, because of the approach the modeling of the 55% UIF scenario takes to try to mitigate the impacts to lower Yuba River temperatures of a requirement that 55% of unimpaired flow be released from the Yuba River by holding storage higher than currently targeted, and because of the increased shortages in irrigation deliveries from the Yuba River in that 55% UIF scenario and higher UIF percentage scenarios, Yuba Accord transfers would effectively be eliminated. The 55% UIF scenario would eliminate more than half of all transfers from the Sacramento River watershed to other parts of the state. This would limit the use of transfers to mitigate water supply shortage in other regions of the state. The Draft Staff Report's various statements that increased water transfers would, or could, be available to mitigate water supply impacts of the 55% UIF scenario, or even higher UIF-percentage scenarios, under the proposed Inflow and Cold Water Habitat Objectives are not supported though an examination of one of the major transfer sources currently operating in the Sacramento River Watershed, the Yuba Accord.	
309	153	[Att. 1: Att. 5: Exhibit 3: Table 6.6-1, Summary of Market-Based Water Transfers, by Region (Annual Average – thousand acre-feet per year), from the 2023 Draft Staff Report]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	154	[Att. 1: Att. 5:] The Draft Staff Report Asserts, And Relies On, Incorrect Conclusions About New Bullards Bar Reservoir Storage Cold Water Pool and Downstream Temperatures The Draft Staff Report's preliminary assessment of effects of New Bullards Bar Reservoir storage on Smartsville water temperatures (Appendix A1c) is deficient and does not support the operations assumptions made for SacWAM modeling of the 55% UIF scenario and other UIF-based scenarios. Appendix A1c describes the process by which reservoir storage thresholds for key reservoirs to protect coldwater habitat were selected. It	Please see responses to comments 309-56, 309-61, and 309-62 related to development of the carryover storage targets. Additionally, Appendix A1, Sacramento Water Allocation Model Methods and Results, describes that the carryover storage targets are not hard constraints but rather are targets that were used as guidelines of carryover storage to maintain as frequently as in the baseline scenario: "The carryover targets were based on a variety of sources of information and are not meant to represent absolute values required to maintain habitat; rather, they were included in the SacWAM modeling scenarios as a mechanism to roughly represent the narrative objective. Like other modeling constraints that are designed to represent

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		appears that the evaluation consisted of simply “eyeballing” 2001-2016 New Bullards Bar Reservoir storage levels, and Smartsville average monthly water temperatures as shown in Figure A1c-12 [Att. 1: Att. 5: Exhibit 4], which is copied below, to arrive at the 400,0000-550,000 acre-ft range for the New Bullards Bar end-of-September threshold stated in Appendix A1. No statistical analysis of the data represented in Figure A1c-12, or any other technical analysis, is provided to support the conclusion that the threshold is necessary for this purpose. The Draft Staff Report (pg. A1c-17) states ... “New Bullards Bar Reservoir storage of less than 400 TAF in September and October could cause average September and October temperatures in the lower Yuba River (at Smartsville) to exceed the 56 °F temperature criterion (Figure A1c-12). ... Thus, maintaining a storage of 400 TAF is important for meeting water temperature needs for Chinook salmon spawning and incubation, which generally begins in September. Since 1986, there has only been one instance of New Bullards Bar Reservoir storage being substantially less than 400 TAF (364 TAF in October 2015) (Figure A1c-11)”. There appears to be no evidence to support this conclusion or any other technical basis for it. As noted above, the conclusion instead appears to be based on an unanalytic “eyeballing” of the two data sets depicted in Figure A1c-12. Examination of the actual data depicted in Figure A1c-12 demonstrates that, during the period extending from 2001-2016, the single instance of New Bullards Bar Reservoir storage declining to substantially less than 400 TAF (364 TAF in October 2015) did not result in mean monthly water temperatures exceeding 56 °F at Smartsville. In fact, the storage of 364 TAF in October of 2015 was associated with a mean monthly water temperature of about 55 °F at Smartsville. In addition, Figure A1c-12 shows only one instance of mean monthly water temperature at Smartsville exceeding 56 °F in September or October. This exceedance occurred in September of 2015, when end-of-September storage was approximately 395 TAF but, more importantly, when releases through New Colgate	adaptive management such as maximum OMR reverse-flow objectives, actual real-time decisions may diverge from monthly modeling scenarios.”

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		Powerhouse were drastically reduced because of shortages in deliveries to water users downstream at Daguerre Point Dam due to being in the fourth consecutive year of a severe drought. This demonstrates that the Draft Staff Report's overly simplistic representation of protective water temperatures during the spring-run Chinook salmon spawning season (September and October) being solely dependent on end-of-September storage in New Bullards Bar Reservoir is not correct. Those temperatures are in fact dependent on other factors the DSR did not consider (e.g., release rates at New Colgate Powerhouse and flows at Smartsville gage). Appendix A1c itself acknowledges that factors other than New Bullards Bar storage likely affect water temperatures at Smartsville: "Water temperature is measured at Smartsville (CDEC station YRS), approximately 1 mile downstream of Englebright Dam. Smartsville temperatures are likely influenced by the Middle and South Yuba River flows as well as the fraction of water from New Bullards Bar Reservoir." (Appendix A1c, p. A1c-15.) No materials associated with the Draft Staff Report appear to actually analyze those other factors, however. In contrast, Yuba Water Agency prepared extensive quantitative analysis of the drivers of temperatures and other data and submitted this information to FERC as part of FERC's Additional Information Request (AIR) to the three licensees relicensing projects in the Yuba River watershed, namely YWA, Nevada Irrigation District (NID) and PG&E. YWA filed a report on October 31, 2022, with FERC, detailing its analysis of lower Yuba River temperatures. The SWRCB was provided with those data and reports as a party to the relicensing. The report examined New Bullards Bar Reservoir release temperatures, release rates and temperatures from New Colgate Powerhouse and release rates and temperatures at the Smartsville Gage as well as other locations below Englebright Dam on the lower Yuba River. The report showed that New Bullards Bar Reservoir temperatures are cold and below 49 degrees F at the outlet to New Colgate Powerhouse even when storage falls below 400,000 acre-ft in September and the powerhouse average monthly release temperatures have remained below 52 degree F when end of September storage is below 400,000 acre-ft (2015 and 2021) and the average monthly release temperature was 52.2 degree F	

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		in 2014 when end of September storage was 417,000 acre-ft (YWA AIR Response TM Page 22).	
309	155	[Att. 1: Att. 5:] The Draft Staff Report does not adequately disclose the logic used in developing the assumptions that “drive” YRDP operations in the SACWAM modeling and, therefore, in the environmental analysis that is dependent on that modeling. Appendix A1 states the assumptions used for the SACWAM modeling. In particular, the discussion of end-of-September storage thresholds on pages A1-10 to A1-11 identifies that the end-of-September storage threshold used for New Bullards Bar is a range of 400,000 to 550,000 acre-ft to protect coldwater habitat. However, no explanation is provided for what numbers within that range were used for SacWAM modeling, when and under what conditions they were used, or rationale describing why they were used. Examination of the actual SACWAM modeling results also does not support the description of New Bullards Bar’s operations in Appendix A1’s text. For instance, the SACWAM modeling results show that, in the 55% UIF scenario, New Bullards Bar storage is allowed to be drawn down to 351,390 acre-ft at the end of September of 1934 and drawn down to 269,243 acre-ft in 1992 with only 4% and 25% reductions on releases for irrigation deliveries, respectively. These results occur in the DSR’s SACWAM modeling even though Appendix A1 states that reductions in irrigation deliveries would be higher at these storage levels and is the mechanism to maintain end of September storage in New Bullards Bar. (Appendix A1, p. A1-16.) These results suggest that the 400,000 to 550,000 acre-ft limit for cold water pool is not imposed in the model uniformly, but there does not appear to be any explanation anywhere in the materials associated with the Draft Staff Report to explain how that limit actually is applied in the SACWAM modeling.	As explained in Section A1.3, Reservoir Carryover Storage Targets, of Appendix A1, Sacramento Water Allocation Model Methods and Results, the carryover targets are not hard constraints, but rather targets that were used as carryover storage guidelines to try to ensure that end-of-September storage levels in the unimpaired flow scenarios were above the target values as frequently as in the baseline scenario: “The carryover targets were based on a variety of sources of information and are not meant to represent absolute values required to maintain habitat; rather, they were included in the SacWAM modeling scenarios as a mechanism to roughly represent the narrative objective. Like other modeling constraints that are designed to represent adaptive management such as maximum OMR reverse flow objectives, actual real-time decisions may diverge from monthly modeling scenarios. The carryover storage targets were implemented by adjusting carryover storage targets and allocations with the goal that the resulting end-of-September storage levels in the scenarios were above the carryover target as frequently as or more frequently than the baseline scenario.” For example, if the results from the baseline scenario showed New Bullards Bar end-of-September storage above 400-550 TAF between 80-95 percent of the time, the reservoir buffer pool in SacWAM was adjusted such that the results for the flow scenarios also show end-of-September storage above 400-550 TAF in a similar frequency of years.
309	156	[Att.1: Att. 5: Exhibit 4: Figure A1c-12, Historical Monthly Average Temperatures (°F) at Smartsville Compared to New Bullards Bar Reservoir Storage (TAF) (2001–2016), from the 2023 Draft Staff Report]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	157	[Att. 1: Att. 5:]	Please see the responses to comments 309-61 and 309-11.

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		The Yuba Water Agency's FERC AIR response regarding lower Yuba River temperatures conclusively demonstrated that: (1) flow, in the form of water that the YWA releases from New Bullards Bar through the New Colgate powerhouse, is a key driver of temperatures for the lower Yuba River; and (2) low flows in August associated with reduced agricultural deliveries affect September and October temperatures, even when New Bullards Bar Reservoir storage is low, but New Colgate release temperatures remain cold. In the AIR response, YWA demonstrated that a relatively small increase in flow in September and October of Dry and Critically Dry years would substantially reduce temperatures in the lower Yuba River and proposed that NID and PG&E contribute water in the spring to be effectively stored in New Bullards Bar Reservoir for release in the fall to achieve these higher flows. The YWA AIR response documents and supporting analysis and modeling constitute the best available scientific information on temperatures in the lower Yuba River and have been made available, through their submission to FERC, to all parties to the YRDP, NID and PG&E relicensing, including the SWRCB. Nothing in the Draft Staff Report, however, appears to consider those FERC filings by YWA. Historical Flow and Temperature Data The temperature modeling results that Yuba Water Agency provided in FERC's relicensing of the YRDP to all parties to that relicensing— including the SWRCB—support the conclusion that higher temperatures in September and October are mostly a result of lower Yuba River flows, which are partly a result of reduced irrigation diversion deliveries that occur when New Bullards Bar Reservoir is low.	
309	158	[Att. 1: Att. 5:] Because a primary purpose of New Bullards Bar Reservoir is water supply, and because YWA must rely on the reservoir to release stored water to meet next-year minimum streamflow requirements and agricultural water supply to local farmers, as a matter of planning for the potential of multi-year drought conditions, YWA maintains the reservoir's storage through limits on irrigation deliveries in the current year when storage is	Please see Common Response 6.1, Sacramento Water Allocation Model and Changes in Hydrology and Water Supply regarding the scale of the analysis and for a response to comments regarding carryover storage targets and SacWAM reservoir buffer pools, including for New Bullards Bar Reservoir.

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		forecast to fall below target carryover levels. In summary, Yuba Water Agency currently imposes up to 50% shortages on current-year agricultural deliveries to meet an end-of-September carryover storage sufficient, according to the Agency's calculations, to provide for the next year's minimum streamflows and some level of agricultural supplies the next year. This mechanism is also discussed in the Draft Staff Report (Draft Staff Report Appendix A1, p. A1-16). This water supply management strategy is discussed at page 7-63 in the September 2024 SACWAM model documentation released simultaneously with the Draft Staff Report: "The parameter NewBullardsBar Carryover Target is Yuba County WA's storage target for September 30 in dry years when the agency's contractors are faced with water deficiencies. A fixed value of 440,000 acre-feet is used based on modeling conducted for FERC relicensing of the Yuba River Development Project (YCWA, 2012). This value is the sum of a 234,000-acre-foot minimum pool, 45,000-acre-foot operational buffer to meet dry-year flow requirements, and a 15,000-acre-foot allowance for evaporation." The components of New Bullards Bar operations described in that quote, however, do not add up to 440,000 acre-ft, so they do not appear to support that value as a carryover storage target. In contrast, the calculations performed by YWA to support its actual carryover storage target in actual practice include significantly more parameters and analysis. Yuba Water Agency used its own real-world calculations and analysis to support the hydrologic and temperature modeling it performed for the consideration of FERC and other parties to the YRDP's relicensing.	
309	159	[Att. 1: Att. 5:] To draw conclusions about storage and flow effects on temperatures in the lower Yuba River at Smartsville, examination of storage at New Bullard Bar Reservoir, as well as flow and water temperatures at both New Colgate Powerhouse and the Smartsville gage, is required. Comparison of New Bullards Bar Reservoir storage volume and reservoir release temperature removes, from an analysis of the extent to which reservoir storage may cause of changes in temperatures at	Please see responses to comments 309-61 and 309-62 related to development of the carryover storage targets. Colgate powerhouse penstock temperatures have been added to the analysis in Appendix H1a1, Assessment of Effect of Reservoir Storage on Reservoir Release Temperatures. Additionally, Table A1-3 lists the carryover storage targets for each reservoir including New Bullards Bar Reservoir. New Bullards Bar includes a range of carryover storage between 400

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		Smartsville, any effects of heat gain in the river below the powerhouse and of mixing and storage temperature conditions at the downstream Englebright Reservoir. These additional factors otherwise could confound the analysis of the extent to which New Bullards Bar storage levels are drivers of Smartsville temperatures. Figure 3 [Att.1: Att 5: Exhibit 5] is a plot of daily storage in New Bullards Bar Reservoir versus mean daily release temperature at New Colgate Powerhouse as measured within the penstock entering the powerhouse for the month of September for water years 1997 to 2023. The 1997-2023 period included a representative set of water years, from the severe droughts of 2013-2015 and 2020-2022, as well as very wet years like 1998, 2006, 2011, 2017 and 2023. Figure 3 also includes plots of a linear regression trendline and the 95% confidence levels as orange lines. The regression coefficient for the slope of the trend line, which is the relationship between New Bullards Bar storage change and New Colgate release temperatures change is $-6.9E-6$. That means that, for every 100,000 acre-ft increase of storage, the New Colgate Powerhouse release temperature would decrease by .69 degrees F. Statistical analysis suggests the regression coefficient is statistically significant, but the R2 value suggests a weak relationship with only 26% of the change in temperature attributable to the change in storage. Conversely, the trendline results in a relationship of only an increase of .69 degrees for every 100,000 acre-ft decrease in storage. The information depicted in Figure 3 also enables an assessment of the validity of the Draft Staff Report's Appendix A1c's interpretation of data points concerning New Bullards Bar storage levels and Smartsville temperatures in its Figure A1c-12, which that appendix cites to justify apply an end-of-September carryover storage target to New Bullards Bar in the SACWAM modeling. Using the above New Bullards Bar storage versus New Colgate Powerhouse release regression, any increase in temperature at Smartsville attributable to storage reduction from 600,000 acre-ft to 400,000 acre-ft would only include an increase in New Bullards Bar Reservoir release temperature of 1.38 degrees F. As depicted in that regression, with an average temperature of about 50 degrees F at 600,000 acre-ft of storage,	and 550 TAF which was developed using historical data presented in Appendix A1c, Preliminary Assessment of Effect of Reservoir Storage on Reservoir Temperature. Temperatures increase as they move downstream, so reservoir discharges need to be colder than downstream temperature targets that protect habitat. Lower flows lead to faster warming leading to cooler temperatures at reservoir releases to protect downstream habitat. Based on comments received, some of the carryover storage targets have been revised for the revised proposed Plan amendments including the carryover target for New Bullards Bar Reservoir.

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		New Bullards Bar Reservoir release temperature would be expected to be at or less than 52 degrees, which is confirmed by Figure 3. Therefore, data review and analysis show that 1) even at 400,000 acre-ft of storage New Bullards Bar Reservoir release temperatures would be expected to be at or less than 52 degrees, well below the SWRCB referenced 56 degree temperature for Smartsville in September and 2) factors other than storage must be affecting temperatures at Smartsville. In other words: (1) an actual statistical regression analysis of the relationship between changes in New Bullards Bar storage and New Colgate release temperatures demonstrates that changes in storage do not significantly change the water temperatures available from New Bullards Bar and does not explain the increase in temperature at Smartsville in September and October in very dry years ; and therefore (2) other factors that the Draft Staff Report does not analyze must be examined to identify important drivers of changes in Smartsville temperatures.	
309	160	[Att.1: Att. 5: Exhibit 5: Graph titled Figure 3: daily storage in New Bullards Bar Reservoir versus mean daily release temperature at New Colgate Powerhouse as measured within the penstock entering the powerhouse for the month of September for water years 1997 to 2023]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	161	[Att. 1: Att. 5:] Figure 4 [Att.1: Att. 5: Exhibit 6] shows a plot of Smartsville flow versus Smartsville water temperatures for the month of September for water years 2003 to 2023. This 2003-2023 includes a wide range of water years, including the very wet years of 2006, 2011, 2017 and 2023, as well as the multi-year droughts of 2013-2015 and 2020-2022. The plot includes a linear regression trendline that has a slope of -.0049 and an R2 value of .34. Importantly, the data shows that almost all temperatures are above 52 degrees regardless of flow rate, and temperatures can exceed 56 degrees F, across a wide range of flow suggesting a complex relationship between the release temperature at New Colgate Powerhouse and Smartsville. The regression coefficient calculated for the data of figure 4 indicates half a degree F increase for every 100 cfs reduction in flow, but the figure also shows that temperatures are predominantly above 56 degrees F when flows are below 700 cfs. The two data	Please see the response to comment 309-159 related to carryover storage.

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		points at 57 degrees and flow of amount 1,100 cfs are unexplained. Not shown in the figure, but part of the data analysis is the relationship between irrigation deliveries in the summer versus September temperatures. The data shows that three years make up the data points with flows below 700 cfs, 2014, 2015 and 2021. The flow at Smartsville was less than 700 cfs for each day of September for all three years, but only in September of 2015 and 2021 were all days above 56 degrees F while only three of the days in September 2014 were above 56 degrees F and only by less than .5 degrees F. The major difference between 2014 compared to 2015 and 2021 was that in 2015 and 2021 significant irrigation shortages resulted in lower late August flows while in 2014 irrigation flows were more normal, with no shortages. This figure, and the supporting analysis that YWA submitted to FERC and made available to the SWRCB, demonstrate that the lowest flows at Smartsville as a result of reductions in irrigation deliveries play a significant role in temperatures. In opposition to this actual data, the Draft Staff Report's Appendix A1 treats reductions in YWA's irrigation deliveries as a tool for reducing Smartsville temperatures. (Appendix A1, p. A1-16.) The YWA AIR response to FERC also showed there is a complex dynamic with previous month flow, as well as current flows, that involves Englebright storage, another contributing factor to temperature increase at low flow. The YWA AIR response technical reports concluded there were limited instances of unsuitable spring run spawning period temperatures in the lower Yuba River, and it was a combination of factors that led to the higher temperatures. The conclusion that can be made from this data, as documented in the YWA submissions to FERC, is that reduced New Bullards Bar storage has a weak relationship to New Colgate release temperatures, so New Bullards Bar storage reduction to levels below 440,000 to 500,000 acre-ft as described in the DSR at Page A1c-17) alone does not result in significantly increased temperatures in the lower Yuba River and conversely maintaining storage above 440,000 to 500,000 acre-ft is not an effective measure for ensuring suitable temperatures. More importantly, very low flow associated with reduced irrigation deliveries is shown to be a stronger driver of increased temperatures in September and, because of the relationship of	

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		flow versus temperature, a carryover target to maintain New Bullards storage that would require limiting releases to maintain cooler temperatures would be counterproductive. Because there is a relationship between New Bullards storage and New Colgate Powerhouse release temperatures, albeit a weak one, an attempt to maintain cooler temperatures with significant increases in lower Yuba River flow is also counterproductive, as storage could be reduced enough where increased release temperatures would result. Finally, another constraint on using significantly higher flows in September and October to provide cooler temperatures would be the triggering of flow fluctuation limits which, as discussed above can also result in draining storage due to the requirement to maintain higher flows for many months.	
309	162	[Att.1: Att. 5: Exhibit 6: Graph titled Figure 4: mean daily Smartsville Flow versus Smartsville water temperatures for the month of September for water years 2003 to 2023]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	163	[Attachment 5 of Attachment 1: Memorandum titled Technical Memorandum #2, Exhibit 1 – Pages from the YWA-DWR Water Pruchase Agreement Exhibit 1 (Accounting Principles)]	This attachment was included with the comment letter. The attachment does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing attachments to comments.
309	164	[Attachment 5 of Attachment 1: Memorandum titled Technical Memorandum #2, Exhibit 2 – Map of the Yuba River Watershed and Major Facilities]	This attachment was included with the comment letter. The attachment does not raise a specific environmental issue or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing attachments to comments.
309	165	[Attachment 2: Exhibit A—Excerpt from memorandum titled Attachment B1 Technical Memorandum Modeling Approach]	This attachment was included with the comment letter. The attachment does not raise a specific environmental issue or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing attachments to comments.
309	166	[Attachment 3: Exhibit B—Email from California Independent System Operator to Yuba Water Agency dated September 1, 2022 Re: Emergency Assistance]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	167	[Attachment 4: Exhibit C—eFile submittal letter from Yuba Water Agency to Federal Energy Regulatory Commission with attached documents titled Attachment 1 – Modeled Scenarios]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of

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		and Attachment 2 – Technical Memorandum Yuba County Water Agency’s Response to FERC’s Additional Information Requests Related to Item 3 Yuba River Development Project FERC Project No. 2246, respectively]	the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	168	[Attachment 5: Exhibit D—Document titled OD-ORDER, 113 FERC ¶62,137, Yuba County Water Agency, Project No. 2246-047 November 22, 2005]	This attachment was included with the comment letter. The attachment does not raise a specific environmental issue or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing attachments to comments.
309	169	[Attachment 6: Exhibit E—Excerpts from document titled Yuba Water Agency Agricultural Water Management Plan]	This attachment was included with the comment letter. The attachment does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing attachments to comments.
309	170	[Attachment 7: Exhibit F— Excerpts from document titled Yuba Subbasins Water Management Plan: A Groundwater Sustainability Plan]	This attachment was included with the comment letter. The attachment does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing attachments to comments.
309	171	[Attachment 8: Exhibit G— eFile submittal letter from Yuba Water Agency to Federal Energy Regulatory Commission with attached excerpts from memorandum titled Technical Memorandum – Modeling Approach Yuba River Development Project FERC Project No. 2246]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	172	[Attachment 9: Exhibit H— eFile submittal letter from Yuba Water Agency to Federal Energy Regulatory Commission with attached excerpts from memorandum titled Technical Memorandum Biological Evaluations of the Various Modeled Scenarios to Support the Yuba County Water Agency’s Response to FERC’s Additional Information Requests]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	173	[Attachment 10: Exhibit I—Excerpt from letter from the State Water Resources Control Board to Yuba County Water Agency dated September 13, 2021 Re: Response to Yuba County Water Agency Request for Consultation Concerning Conditions of Water Quality Certification]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.
309	174	[Attachment 11: Exhibit J—Letter from California Independent System Operator to the State Water Resources Control Board dated November 2, 2021 Re: Petition of Yuba County Water	While this comment does not specifically comment on the environmental analysis, some of its concerns including local resource adequacy, grid reliability, and emergency peaking

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		Agency for authorization to continue diversion for minimum human health and safety]	operations are discussed in Appendix A5, Hydropower, Energy Grid, and Export Energy Analyses, and Common Response 7.8, Energy and Hydropower. Effects on hydropower generation at the New Colgate Powerhouse were included in the TARA power flow analysis of grid reliability presented in Section 7.8, Energy, and Appendix A5, Hydropower, Energy Grid, and Export Energy Analyses. Furthermore, as described in Common Response 7.8, Energy and Hydropower, the ability of hydropower facilities to respond to electrical grid emergencies would continue with the revised proposed Plan amendments. As described in Chapter 13, Revised Proposed Plan Amendments, implementation of the revised proposed Plan amendments would be modified to protect public health and safety if necessary.
309	175	[Attachment 12: Exhibit K—Excerpts from document titled Yuba-Feather Forecast Informed Reservoir Operations Preliminary Viability Assessment]	This attachment was included with the comment letter. The attachment does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing attachments to comments.
309	176	[Attachment 13: Exhibit L—Excerpts from document titled Yuba Water Flood Risk Management Planning Study]	This attachment was included with the comment letter. The attachment does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing attachments to comments.
309	177	[Attachment 14: Exhibit M—Excerpts from document titled Draft Environmental Impact Report New Bullards Bar Dam Atmospheric River Control (ARC) Spillway Project]	This attachment was included with the comment letter. The attachment does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing attachments to comments.
309	178	[Attachment 15: Exhibit N—Document titled Atmospheric River Control (ARC) Spillway at New Bullards Bar Dam Reducing Flood Risk, Enhancing Dam Safety]	This attachment was included with the comment letter. The attachment does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing attachments to comments.
309	179	[Attachment 16: Exhibit O—Excerpt from document titled Central Valley Flood Protection Plan 2022 Update]	This attachment was included with the comment letter. The attachment does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1,

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			General Comments, for the approach to addressing attachments to comments.
309	180	[Attachment 17: Exhibit P—Letter from State Water Resources Control Board to Yuba County Water Agency dated December 10, 2020 Re: Comments on Notice of Preparation for the New Bulards Bar Dam Secondary Spillway Project, Part of the Yuba River Development Project, Federal Energy Regulatory Commission Project No. 2246]	This attachment was included with the comment letter. The attachment does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing attachments to comments.
309	181	[Attachment 18: Exhibit Q—Excerpts from document titled California's Water Market, By the Numbers: 2012 Update]	This attachment was included with the comment letter. The attachment does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing attachments to comments.
309	182	[Attachment 19: Exhibit R—Document titled Amendments to Constitution and Proposed Statutes with Arguments Respecting the Same]	This exhibit was included in the comment letter. The exhibit does not raise a specific environmental impact or economic effect of the project. Refer to Common Response 1.1, General Comments, for the approach to addressing exhibits.