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525-1	Attached is a letter is a letter submitted on behalf of San Joaquin County regarding the Delta Conveyance Project Draft Environmental Impact Report. Due to the size of the entire submittal, the complete letter, its exhibits and the supporting references for those exhibits are transmitted via this Dropbox link: https://www.dropbox.com/scl/fo/yvdxoj4lx6so2h6e22saz/h?dl=0&rlkey=hb908cdzybcvwtay9i92fqpnv The contents of the Dropbox link will have the following: PDF Letter from San Joaquin County complete with exhibits 2 Folders that contain the references cited in the reports included in Exhibits 1 [ATT 1] and 4 [ATT 4]: [Image of file links] The references cited in Exhibit 2 [ATT 2] are included in this attached email and are not provided again in the Dropbox link. There are no references for Exhibit 3 [ATT 3]. Should you have questions or need assistance regarding the Dropbox link, please do not hesitate to contact our office. Thank you for considering our comments.	This comment is a notification for DWR on the numerous files being sent supporting the respective comment letter. It is not a comment on the contents of the EIR. DWR has reviewed all comments and will consider all comments in its decision-making process. The content available via the link provided by the commenter will be included in the administrative record for the Delta Conveyance Project EIR. Please refer to the EIR Volume 2, Chapter 1, Introduction, for information regarding how commenter submitted materials, including links, were handled.
525-2	These comments on the July 2022 Delta Conveyance Project Draft Environmental Impact Report ("DEIR") prepared by the California Department of Water Resources ("DWR") pursuant to the California Environmental Quality Act (Pub. Resources Code,§ 21000 et seq. ["CEQA"]) are submitted on behalf of San Joaquin County ("County"). The Delta is a unique natural and geographical feature of California and is the largest estuary on the Pacific Coast of the United States. The Delta encompasses over 730,000 acres with islands and tracts of fertile soil and an agricultural industry that	This information provides clarification on the submittal of the comment letter and includes general introductory text. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.

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	provides 12,400 jobs and produces more than $1.7 billion in economic output. Nearly two-thirds of the legal Delta is located in the County. The County houses the mainstem of the Sacramento and San Joaquin rivers as well as numerous sloughs and other waterways.	
525-3	[San Joaquin] County is concerned about the wide array of impacts that the Delta Conveyance Project ("project'' "DCP" or "tunnel") would cause, including impacts on recreation, flood control, transportation, air quality and economic and other community impacts. In addition, the County is particularly concerned about reductions in freshwater flows into the Delta that would occur as a result of the project's new diversions in the north Delta.	The potential impacts as a result of the construction and operation of the project on the resources mentioned in the comment are analyzed in the EIR. Please see Chapter 16, Recreation, for an analysis of the project's effects on recreational resources. All recreation impacts were determined to be less than significant. Please see Chapter 7, Flood Protection, for an analysis of the project's effects on flood protection. All impacts, with the exception of Impact FP-1 for Alternatives 2a and 4a only, would be less than significant. For Alternatives 2a and 4a, Impact FP-1 would be mitigated to a less-than-significant level with implementation of Mitigation Measure FP-1. Please see Chapter 20, Transportation, for an analysis of the project's effects on transportation. Although most potential impacts could be mitigated to a less-than-significant level, the project is expected to increase average vehicle miles traveled (VMT) to a level that could be significant and unavoidable even with the implementation of mitigation. Please see Chapter 23, Air Quality and Greenhouse Gases, for an analysis of the project's effects on air quality and greenhouse gases. All impacts except Impacts AQ-5 and AQ-6 (for Alternatives 2a and 4a) would be less than significant or less than significant with mitigation. Chapter 17, Socioeconomics, analyzes the potential effects of the project on economic conditions, community character, and demographic

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		characteristics in the study area. As described in the chapter, the effects are not anticipated to be adverse. Please refer to the Efforts to Minimize Delta Community Effects technical memoranda in the Engineering Project Reports (Delta Conveyance Design and Construction Authority 2022a, 2022b) regarding the engineering and design modifications made to reduce Delta community effects. Additionally, as described in Appendix 3G, Community Benefits Program Framework, the Community Benefits Program would include the Delta Community Fund and Economic Development and Integrated Benefits to address local community effects that may occur, beyond the mitigation requirements of CEQA. Please refer to Chapter 5, Surface Water, including the table titled Comparison of Surface Water Resources by Project Alternative, regarding the magnitude of anticipated changes to Sacramento River Basin flows and State Water Project (SWP)/Central Vally Project (CVP) reservoir storages that are expected to result from the project alternatives, which are expected to be similar to existing conditions. As described in the section in Chapter 3, Description of the Proposed Project and Alternatives, titled Key Existing Delta Operations Criteria, the project would be operated consistent with regulatory requirements, specifically State Water Board Water Right Decision 1641 (D-1641).
525-4	The project is designed for the benefit of several water agencies outside of the Delta, while it would burden the residents, local governments, and businesses in the five-county region of Contra Costa, Sacramento, San Joaquin, Solano, and Yolo (and beyond). The agencies represented on the Delta Conveyance Design and Construction Authority and Delta Conveyance Finance Authority do not include the Delta Counties. Nor have Delta counties had adequate opportunities to convey concerns about the project, and the concerns that	DWR met and exceeded all public review requirements of CEQA. Please refer to Chapter 35, Public Involvement, and Common Response 2, Public Outreach Activities, regarding the outreach activities conducted throughout the EIR process to solicit input on the Delta Conveyance Project. The assertion that Delta counties are not represented by the Delta Conveyance Design and Construction Authority (DCA) is incorrect. The DCA is a joint powers authority that is governed by a seven-member board

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	have been conveyed have never been addressed. This project would create short- and long-term impacts to the Delta region. The project would saddle the counties with immense construction activities for more than a decade, damage local infrastructure, and once operational, would siphon fresh water from Delta waterways and communities.	composed of representatives from the participating SWP-served public water agencies. See Chapter 1, Introduction, for additional discussion on the DCA. Please also refer to the Efforts to Minimize Delta Community Effects technical memoranda in the Engineering Project Reports regarding the engineering and design modifications made to reduce Delta community effects (Delta Conveyance Design and Construction Authority 2022a, 2022b). Potential significant environmental impacts of the project and proposed mitigation measures are evaluated in Chapters 7 through 32 of the EIR, including those related to local communities. As described in Appendix 3G, Community Benefits Program Framework, the Community Benefits Program would include the Delta Community Fund and Economic Development and Integrated Benefits to address local effects that may occur, beyond the mitigation requirements of CEQA.
525-5	The County is also a member of the Delta Counties Coalition ("DCC"), which is an alliance comprised of the California Counties of Contra Costa Sacramento, San Joaquin, Solano, and Yolo, which work collaboratively to give one voice on behalf of the Sacramento- San Joaquin River Delta and its four million area-wide residents. The five counties are united in their grave concerns with respect to the short- and long-term effects on the environment and the people of the California Delta. In addition to the comments made in this letter, the County is submitting four expert reports. The County requests responses to the attached expert reports in addition to this cover letter. The expert reports will be referenced throughout the County's letter and are attached as follows:	The commenter provided these attachments in support of their comments. Those comments are addressed in these responses to the commenter’s letter.

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	Dr. Jeff Michael Report (Exhibit 1) [ATT 1] Gilbert Cosio Report (Exhibit 2) [ATT 2] San Joaquin Department of Public Works Report (Exhibit 3) [ATT3] Dr. Petra Pless Report (Exhibit 4) [ATT 4]	
525-6	I. Key Assumptions and the Approach to Analysis Are Fundamentally Flawed in the DEIR (Ch. 1-4) A.The DEIR Fails to Discuss Known Controversies. CEQA requires that an EIR contain a brief summary of the proposed action and its consequences. This summary must include "Areas of controversy known to the Lead Agency including issues raised by agencies and the public[.]" (CEQA Guidelines, §15123; see also Banning Ranch Conservancy v. City of Newport Beach (2017) 2 Cal.5th 918, 941.) At the end of Chapter 1, the DEIR provides a summary of "Issues of Known Controversy.'' (DEIR, p. 1- 49.) This list includes: Purpose and Objectives, Range of Alternatives, Water Supply and Surface Water Resources, Flood Protection, Water Quality, Climate Change, Biological Resources, Agricultural Resources, Recreation, Socioeconomics, Aesthetics/Visual Resources, Environmental Justice and Disadvantaged Communities, Growth, Cultural and Tribal Resources, Community Issues. (DEIR, pp. 1-49 to 1-51.) The list does not include the cost of the project. The cost and cost-benefit of Delta water conveyance have been a point of controversy dating back to the peripheral canal. (Dr. Michael Report, Exhibit 1 [ATT 1], p. 3.) The Bay Delta Conservation Plan/California WaterFix ("BDCP/CWF") projects were fraught with cost-related woes. (Ibid [Central Valley Project ("CVP") backed out of the BDCP/CWF and is not participating in DCP due to high costs].)	This comment does not raise a significant environmental issue relating to the proposed project or the contents of the EIR. The EIR did not fail to discuss known controversies in Chapter 1, Introduction, in the section titled Public Scoping and Issues of Known Controversy. An EIR must include a summary of areas of controversy that are relevant to the environmental analysis required by CEQA. CEQA does not require an EIR include evidence of social or economic impacts which do not contribute to or are not caused by physical impacts on the environment. The Bay Delta Conservation Plan/California WaterFix project is no longer being pursued. The results of the 2018 economic study were specific to California WaterFix and should not be applied to the Delta Conveyance Project. DWR and potential project beneficiaries will conduct their own economic analyses before considering approval of the proposed project or a project alternative and committing funding thereto. Please see Common Response 7, Implementation Considerations, regarding project costs and project funding. As noted in Common Response 7, cost benefit analysis is not a CEQA requirement. Please see multiple sections of the EIR that describe and acknowledge public involvement and stakeholder issues, including Chapter 35, Public Involvement; Appendix 1A, July 2020 Delta Conveyance Project Scoping Summary Report and Addenda; Appendix 3G, Community Benefits Program Framework; and Appendix 29A, Environmental Justice Community Survey Report.

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	Additionally, through contract negotiations, DWR was aware of the controversial nature of the cost of the project. "DWR has already negotiated an Agreement-In-Principle (AIP) regarding cost-shares to its contractors with explicit provisions for opting-out of the DCP and multiple south-of-Delta contractors have already stated that they intend to opt-out and forgo the benefits of the DCP due to its cost." (Ibid.) Additionally, the DEIR omits any discussion regarding cost-benefit analysis, another controversial issue. (Id. At pp. 3-5.) In 2018, DWR provided an analysis for a single-tunnel approach to BDCP/CWF. The analysis determined that the benefit-cost ratio would be between 1.03 and 1.29, which are low benefits for the nearly $11 billion project being analyzed. (Id. At p. 4.) The DCP likely does not meet these slim margins because the costs are higher and the benefits are lower than the previous estimates made by DWR. (Id. At p. 5.) Although DWR is well aware of the controversies surrounding the cost of the project, it failed to include them in the summary of known controversies. This downplays a large public concern that should be discussed.	
525-7	B. Operations of the Project Described in the EIR Are Not Credible The operations plan provided in the DEIR appears to largely underestimate the amount of water that would be siphoned from the Sacramento River at any given time. If the amounts provided in the DEIR are accurate, the project's financial efficacy is highly questionable. (See Dr. Michael Report, Exhibit 1 [ATT 1], pp. 1-5.) The DEIR estimates that roughly 13.5 percent of total Delta exports would be conveyed through the north Delta intakes. (Id. at p. 5.) The DEIR also shows that due to water quality and environmental regulations the north Delta	Delta Conveyance Project operations described in Chapter 3, Description of the Proposed Project and Alternatives are accurate. Assumptions for CalSim 3 modeling are explained in Appendix 5A, Modeling Technical Appendix. In general, the Delta Conveyance Project would be operated to divert water during excess flow conditions and would be consistent with existing and/or new regulatory limitations. Appendix 4C, Alternate Regulatory Scenario Sensitivity Analysis, provides the assumptions for a modified regulatory scenario sensitivity analysis assuming the Delta Conveyance Project operational criteria are implemented as described in Chapter 3. This sensitivity analysis is provided for informational purposes only to determine the potential for changes in impacts for the described

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	intakes would not operate during the majority of the year. (Ibid.) These facts call into question whether the operational criteria provided in the DEIR is accurate. Likely, it is not. The reliance on an implausible operational plan, given the capacity and cost of the project, likely results in underestimated environmental impact analyses in the DEIR. (Ibid.)	scenario. The results of the analysis indicated that the project compared to a modified regulatory baseline would not result in increased severity of effects compared to those described in the main body of the EIR. Please refer to Chapter 2, Purpose and Project Objectives, which explains the water supply reliability and operational flexibility objectives of the project. Although cost was not a screening criterion for alternatives to be further analyzed in the EIR it will be considered during the project approval process once environmental review is completed. Please refer to Common Response 7, Implementation Considerations, regarding economic evaluations such as benefit-cost or financial feasibility analyses which are neither required nor typically included in an EIR as project costs are not considered impacts under CEQA. Please also refer to Common Response 3, Alternatives Development and Description, for additional description of the operational approach and issues raised about the Delta Conveyance Project operations. The Operations Adaptive Management and Monitoring Plan would allow for a process to adjust operations in consultation with fish agencies for fish and aquatic resources protections, if they are needed. The table titled Water Supply Summary, Changes to Water Supply by the No Project Alternative and Project Alternatives, Geographic Area, and User, shown in Thousand Acre-Feet and Resulting Percentages, as Compared to No Project (2040) Conditions in Appendix 6A, Water Supply 2040 Analysis, indicates that under Alternative 5, modeled deliveries made by the SWP, on average and during dry and critical years, would increase by 16% and 17%, respectively. Although values reported in this table are greater than stated by the commenter, the Draft EIR concluded that changes in hydrologic conditions attributable to Alternative 5 and other alternatives, with mitigation (depending on the resource area), would not result in significant environmental impacts on applicable resource areas.

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525-8	C. The DEIR Fails to Consider Local Permitting Requirements. The DEIR does not appropriately identify or discuss the required permits for the project. The DEIR states that it would need right-of-way, utility relocation, and roadway improvement permits from the Delta counties. (DEIR, p. 1-43.) However, several other permits would need to be issued by the County. For example, grading and excavation permits would also be required. (San Joaquin County Code, ch. 9-1400.) Pursuant to the County Code, these grading permits would require several restrictions that are not considered in the DEIR. For example, the County has restrictions on the removal of material from sites that are being graded. (San Joaquin County Code, ch. 9-1405.5.) There are also restrictions regarding activities that might obstruct the natural flow of water (Id. at ch. 9-1405.6), as well as considerations for work near or on levees. (Id. At ch. 9-1405.7.) The DEIR has failed to consider compliance with any of these restrictions or requirements. The County requests that additional information be provided in the DEIR that indicates the extent of permitting required by local agencies.	The EIR was prepared to support the various public agency permit approvals and other discretionary decisions that would be needed and the Delta Conveyance Project would only proceed with construction of these project elements after the project is approved, the EIR is certified, the final design is completed, and the applicable permits have been obtained. Please see the table in Chapter 1, Introduction, titled Summary of Potential Agencies and Review, Approval, or Other Responsibilities, in Addition to Those under CEQA, which summarizes potential responsible agencies and their potential review, approval, or other responsibilities. The table is intended to identify all major state and local review and approval requirements applicable to the proposed project. But table note "a" acknowledges that responsible agencies may utilize the EIR for other requirements not listed in the table. With respect to local grading and excavation requirements, state agencies, such as DWR, are generally immune from local regulations and land use controls based on the doctrine of sovereignty and, therefore, are not typically bound by city and county general plans and local ordinances. If DWR approves the proposed project or a project alternative, DWR will coordinate with counties to discuss local policies related to project activities. Chapters 7 through 32 discuss and identify permits and regulatory requirements as part of the analyses where appropriate, as described in the sections titled Applicable Laws, Regulations, and Programs, and analyzes potential impacts in consideration of applicable permits and regulatory requirements. For example, Chapter 7, Flood Protection, describes the requirements and standards for performing levee work and explains the permitting process related to levee work (e.g., structural measures for flood management and facility protection may rely on existing levees that would be improved to meet PL 84-99 or Bulletin 192-82 standards unless the surrounding levees already meet these standards).

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		Given the above, the EIR appropriately considers applicable regulatory requirements in the context of the impact analyses.
525-9	D. An Artificially Narrow Project Purpose Undermines the Alternatives Assessment CEQA requires that the project description contain a clear statement of the project objectives, including the underlying purpose of the project. (CEQA Guidelines,§ l 5124(b). The purpose and objectives are closely related to the reasonable range of alternatives that the EIR must study. (Id.,§ 15126.6, subd. (a); see also Golden Door Properties, LLCv. County of San Diego (2020) 50 Cal.App.5th 467,546 ("Examining alternatives begins with project objectives because it is these objectives that a proposed alternative must be designed to meet").) Lead agencies may not lawfully define purposes or objectives so narrowly that it derails full assessment of meaningful project alternatives. (We Advocate Thorough Environmental Review v. County of Siskiyou (2022) 78 Cal.App.5th 68,693 (taking this "artificially narrow" approach transformed the EIR's alternatives section into an "empty formality").) Giving the project purpose and objectives an "artificially narrow definition" frustrates assessment of feasible and less risky alternatives. (North Coast Rivers Alliance v. Kawamura (2015) 243 Cal.App.4th 647,668 (quoting In Re Bay-Delta Programmatic EIR Coordinated Proceedings (2008) 43 Cal.4th 1143, 1166).) Since the DEIR references potential CVP involvement, it should be noted that NEPA also prevents similar gamesmanship with project purposes. NEPA requires federal agencies to articulate the "purpose and need" for a proposed action for which	Part of this comment compares certain aspects of the Delta Conveyance Project EIR to the previous Bay Delta Habitat Conservation Plan (BDCP)/California WaterFix DEIR/DEIS. Thus, the comment does not directly address the Delta Conveyance Project Draft EIR and DWR is not required to respond to comments on projects that are no longer being pursued. However, DWR has reviewed the comment's content to determine whether the comment may be applicable to the proposed Delta Conveyance Project. The following response is provided for those elements of the comment that are applicable to the Delta Conveyance Project Draft EIR. The project objectives are not artificially narrow. CEQA does not restrict an agency's discretion to identify and pursue a particular project designed to meet a particular set of objectives. Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Project Requirements, regarding the discretion CEQA affords lead agencies in defining the project purpose and objectives and the scope of the purpose and objectives statements for the purposes of CEQA. The project objectives presented in Chapter 2, Purpose and Project Objectives address what the Delta Conveyance Project is focused on accomplishing, in part, to further the California Water Resiliency Portfolio action to modernize Delta conveyance infrastructure and improve water supply reliability. The EO criteria and priorities are intended to guide the development of the portfolio of options to improve water resilience in California as a whole and are not intended to be CEQA alternatives screening criteria for project EIRs. Appendix 3A, Identification of Water Conveyance Alternatives, and Common Response 3, Alternatives Development and Description, describe further the alternatives development process and the range and scope of alternatives considered

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	environmental review is required. (40 C.F.R. §1502.13.) That articulation is crucial for the "heart" of NEPA, the alternatives analysis, which enables the EIS to provide "a clear basis for choice among options by the decision-maker and the public." (40 C.F.R. §1502.14.) NEPA prohibits the use of a truncated "purpose and need" statement that curtails full assessment of the project and alternatives. (City of Carmel-by-the-Sea v. United States Department of Transportation (9th Cir. 1997) 123 F.3d 1147, 1155; Friends of Southeast's Future v. Morrison (9th Cir. 1998) 153 F.3d 1059, 1066.) Unfortunately, the DEIR does precisely what the law prohibits. It states that DWR's "fundamental purpose in proposing to develop new diversion and conveyance facilities in the Delta" is "to restore and protect the reliability of SWP water deliveries and, potentially, CVP water deliveries south of the Delta, consistent with the State's Water Resilience Portfolio in a cost-effective manner." (DEIR, 2-2.) This "fundamental purpose" guides and constrains the stated project objectives that follow: •To help address anticipated rising sea levels and other reasonably foreseeable consequences of climate change and extreme weather events. •To minimize the potential for public health and safety impacts from reduced quantity and quality of SWP water deliveries, and potentially CVP water deliveries, south of the Delta as a result of a major earthquake that could cause breaching of Delta levees and the inundation of brackish water into the areas where existing SWP and CVP pumping plants operate in the southern Delta.	using the project purpose and objectives. CEQA Guidelines Section 15124(b) requires a clearly written statement of objectives to help the lead agency develop a reasonable range of alternatives to evaluate in the EIR. Please refer to Common Response 3, Alternatives Development and Description, regarding the reasonable range of feasible alternatives developed for evaluation in the EIR. Please refer to Chapter 4, Framework for the Environmental Analysis, regarding potential CVP involvement as well as considerations related to the U.S. Army Corps of Engineers' EIS.

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	•To protect the ability of the SWP, and potentially the CVP, to deliver water when hydrologic conditions result in the availability of sufficient amounts of water, consistent with the requirements of state and federal law, including the California and federal Endangered Species Acts and Delta Reform Act, as well as the terms and conditions of water delivery contracts and other existing applicable agreements. •To provide operational flexibility to improve aquatic conditions in the Delta and better manage risks of further regulatory constraints on project operations. (DEIR, pp. 2-2 to 2-3.) DWR's fixation on building new isolated conveyance infrastructure and delivering project water largely reduces this list of "project objectives" into disingenuous talking points for a project designed to take additional water out of a Delta that is already in crisis chiefly because of inadequate freshwater flows. One might as well ask which method of restoring and protecting fossil fuel deliveries can best reduce greenhouse gas emissions, or which type of highly leveraged loan can best reduce financial risks. This dispositive favoring of conveyance and water exports represents significant backsliding even from the current single tunnel project's predecessors. For all its faults, many connected to its similar reliance on a harmful isolated conveyance system, the BDCP/CWF at least referenced broader range of priorities, including ecosystem health and water quality. Its "fundamental purpose" was to make 'physical and operational improvements to the SWP system in the Delta necessary to restore and protect ecosystem health, water supplies of the SWP and CVP south-of-Delta, and water quality	

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	within a stable regulatory framework, consistent with statutory and contractual obligations." (2016 BDCP/CWF FEIR, p. 2-2.)	
525-10	For several further reasons, the DEIR's conveyance-forcing, alternatives-killing project purpose is untenable and unlawful. First, the direction to "restore" SWP water is ambiguous and problematic, incorrectly implying return to an ability to deliver full allocation amounts that the SWP has never had. This not simply due to annual fluctuations and mounting problems such as climate change, but because significant portions of the originally envisioned SWP never came into existence and cannot lawfully do so now. In Planning and Conservation League v. Department of Water Resources (2000) 83 Cal.App.4th 892, which brought judicial attention to the SWP's chronic problems with oversubscription and "paper water," the Third District Court of Appeal confirmed that as DWR has long known, "[t]here is ... no question that the SWP cannot deliver all the water to which contractors are entitled under the original contracts. It does not appear that SWP has ever had that ability. Nor do defendants suggest that full delivery of entitlement water is likely within the life of the contracts." An "aura of unreality" thus pervades the DEIR's asserted purpose of restoring SWP deliveries. (Id., at p. 915 .)	Please see response to comment 525-9 regarding the scope of the purpose and objectives under CEQA for the Delta Conveyance Project. As described in this response, Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, and in the Chapter 1, Introduction, section titled Regulatory Environment, pumping restrictions applied by regulatory agencies to address water quality and aquatic species concerns at the south Delta diversion continue to prevent the SWP from reliably capturing water when it is available, especially from storm events. Thus, the need to restore and protect the reliability of the SWP are included in the project purpose. Please refer to Common Response 3, Alternatives Development and Description, regarding water rights, contracts, and use of water. Appendix 5A, Modeling Technical Appendix, provides a description of the modeled representation of baseline existing conditions, which includes an accurate representation of existing water rights and contracts as well as water demand. Existing conditions include current operations under numerous water year types, including normal and wet years, which are captured in the hydrological modeling, and discussed in detail in Appendix 5A. Please see Common Response 9, Hydrologic Modeling and Approach, regarding the appropriate use of CalSim 3 as the hydrologic model and the modeled representation of baseline existing conditions and the project alternatives.
525-11	Second, the DEIR's conveyance-driven "fundamental" [fundamental purpose to restore and protect the reliability of SWP water deliveries and, potentially, CVP water deliveries south of the Delta, consistent with the State's Water Resilience Portfolio in a cost effective manner] purpose is on a collision course with more than half a century's worth of laws protecting the Delta, from the 1959 Delta Protection Act (Water Code, sections 12200, et seq.) to the present. In 2008,	Please see Chapter 1, Introduction, for a description of the State Water Project and background information regarding how water supply has been developed and managed in California. Please also refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the project's purpose and objectives, including DWR's continuing commitment to operate the State Water Project as modified to include the proposed Delta Conveyance Project in compliance with all state and federal water quality and

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	the California Supreme Court warned that water exports from the Delta may later need to be "capped or reduced" when needed to restore ecological health. (In Re Bay-Delta Programmatic EIR Coordinated Proceedings (2008) 43 Cal.4th 1143, 1168.) In the 2009 Delta Reform Act, the California Legislature made it state policy to "reduce reliance on the Delta in meeting California's future water supply needs through investing in a statewide system of improved regional supplies, conservation, and water use efficiency" (Water Code, section 85021), and ensured the "co-equal goals" included not simply water supply reliability, but also "restoring and enhancing the Delta ecosystem." (Water Code, section 85054.)	environmental laws. Please refer to Common Response 3, Alternatives Development and Description, regarding the reasonable range of feasible alternatives considered in the EIR. The Delta Conveyance Project will not conflict with the stated coequal goals of the Sacramento–San Joaquin Delta Reform Act of 2009 (Delta Reform Act), which are to provide a more reliable water supply for California and protect, restore, and enhance the Delta ecosystem. The fundamental purpose of the project, which is to develop new diversions and conveyance facilities in the Delta that are necessary to restore and protect the reliability of the SWP water deliveries and, potentially, CVP water deliveries south of the Delta, is also consistent with the California Water Resilience Portfolio. For additional description and analysis of how the project is consistent with the Delta Reform Act, please refer to Appendix 3E, Delta Reform Act Considerations, and Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs.
525-12	Finally, as discussed in separate comments of the Delta Counties Coalition, Sacramento County, and numerous organizations opposed to DWR's project, the predictable result of the narrow purpose discussed above is that DWR has already screened out and disabled itself from considering project alternatives that could feasibly accomplish most objectives while significantly lessening project impacts. Those already-excluded alternatives include all through-Delta and non-conveyance-based approaches.	Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Project Requirements, regarding the discretion CEQA affords lead agencies in defining the project purpose and objectives and the scope of the purpose and objectives statements for the purposes of CEQA. The project objectives presented in Chapter 2, Purpose and Project Objectives address what the Delta Conveyance Project is focused on accomplishing, in part, to further the California Water Resiliency Portfolio action to modernize Delta conveyance infrastructure and improve water supply reliability. The EO criteria and priorities are intended to guide the development of the portfolio of options to improve water resilience in California as a whole and are not intended to be CEQA alternatives screening criteria for project EIRs. Appendix 3A, Identification of Water Conveyance Alternatives, and Common Response 3, Alternatives Development and Description, describe further the alternatives development process and the range and scope of alternatives considered

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		using the project purpose and objectives. CEQA Guidelines Section 15124(b) requires a clearly written statement of objectives to help the lead agency develop a reasonable range of alternatives to evaluate in the EIR. Please refer to Common Response 3, Alternatives Development and Description, regarding the reasonable range of feasible alternatives developed for evaluation in the EIR. Please also refer to Common Response 3 for a discussion of comment-suggested alternatives, including repairing or upgrading Delta levees and demand management.
525-13	E. Feasible Alternatives were Improperly Screened from Analysis CEQA requires an EIR to describe a range of reasonable alternatives to the project, "which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project[.]" (CEQA Guidelines, § 15126.6, subd. (a).) Here, the DEIR has arbitrarily excluded several alternatives for allegedly not meeting various criteria, including: climate resiliency, seismic resiliency, water supply reliability and operational resiliency. (DEIR, pp. 3A-42 - 45.) These criteria are overly broad and subjective to a degree that has allowed DWR to arbitrarily limit the types of projects in the alternatives discussion. This is illustrated by the fact that there are no actual alternatives, only a single tunnel project that siphons more or less water from the Sacramento River. Even utilizing the DEIR's subjective criteria, it is unclear whether the DCP meets these criteria either. (Dr. Michael Report, Exhibit 1 [ATT 1], pp. 6-9.)	The comment's assertion that screening criteria are overly broad and subjective is neither accurate nor consistent with the EIR. The Department of Water Resources followed CEQA requirements when identifying alternatives to be considered for evaluation in the EIR. Please refer to Appendix 3A, Identification of Water Conveyance Alternatives, for explanations on how the screening criteria were applied to consider alternatives that would be evaluated further in the EIR and how alternatives were eliminated from further consideration. Common Response 3, Alternatives Development and Description, provides an explanation of the alternatives screening process and how project objectives are defined in a broad manner to identify potential alternatives to the proposed project.
525-14	First, the DCP does not provide long-term climate resilience. "By 2070, it is expected that there would be fewer opportunities to utilize the north Delta diversions based on	Please refer to Common Response 6, Climate Resilience and Adaptation, regarding the project's ability to improve water supply reliability and adapt to changing hydrologic conditions as a result of climate change.

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	changes to hydrologic conditions and increasing operational constraints caused by climate change." (DEIR, p. 4A-13.) Therefore, it is erroneous to state that the DCP would "help address anticipated rising sea levels and other reasonably foreseeable consequences of climate change and extreme weather events." (DEIR, p. 2-2.)	The comment mischaracterizes the statements made in Appendix 4A, Consideration of 2070 Considerations. While Appendix 4A states that although opportunities to use the north Delta diversions would be reduced based on changes to hydrologic conditions, SWP and CVP diversions would be greater in 2070 with the Delta Conveyance Project than without it. Therefore, the addition of the Delta Conveyance Project would make the State Water Project more resilient to the anticipated effects of climate change, sea level rise, and extreme weather events.
525-15	Second, the DEIR assumes that the DCP would have the ability to restore SWP exports in the event that there is a seismically-induced flood event. (Dr. Michael Report, Exhibit 1 [ATT 1], p. 7.) This assumption is not substantiated by the record. The assumption fails to consider whether the DCP would be able to operate during this type of event. (Ibid.) For example, there may be constraints on operations due to bypass flow requirements or high levels of contamination in the area. (Ibid.) This is important because it indicates that the DCP may not meet the criterion of seismic resiliency. Further, in 2008, DWR was provided a Delta Risk Management Strategy that stated that the "Improved Levees Scenario" which included a hundred miles of improved levees resulted in a "higher economic benefit and lower costs than a scenario based on an isolated conveyance facility like the DCP." (Id. at p. 8.) Thus, the determination that the DCP provides seismic resiliency is highly questionable.	Please refer to Chapter 2, Purpose and Project Objectives, for a description of the seismic resiliency objective and Appendix 3A, Identification of Water Conveyance Alternatives, where objective screening criteria are used to select alternatives. The alternatives analyzed in the EIR were determined to reasonably meet most of the project objectives. Other alternatives evaluated in Appendix 3A that were not selected sometimes met an objective or partially met an objective but were not found to meet most of the basic project objectives or would not avoid or substantially lessen one or more of the significant environmental impacts of the proposed project. The proposed project and alternatives analyzed in the EIR were found to meet the seismic resiliency and operational flexibility objectives because an additional upstream diversion location would provide for Delta SWP operational redundancy and an alternate diversion location if a seismic event were to affect operation of the existing south Delta export facilities. This assessment does not assume that the Delta Conveyance Project would fully "restore SWP exports" as described in the comment, but that it would provide an opportunity to divert some water if the south Delta facilities were limited because of a seismic event (when any water would be incredibly important to meet public health and safety needs). Improving levees as described in this comment is desirable and is included in the California Water Resiliency Portfolio but is not a feature of the Delta Conveyance Project. Please also refer to Common Response 3, Alternatives Development and Description, for a description of alternatives screening

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		and approach to the alternatives description. In addition, see Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, regarding DWR's role in levee management throughout the Delta.
525-16	Third, operational resiliency is the most subjective criterion of the four. The criterion speculates about the project's ability to "manage future regulatory constraints." (DEIR, p. 3A- 29.) The DEIR determined that dual conveyance would provide "The flexibility to alter operations in this way allows greater certainty that SWP can deliver its obligations reliably." (DEIR, p. 3A-30.) However, this assumes a regulatory future where south Delta pumping is constrained and north Delta intakes could operate as in tended. (Dr. Michael Report, Exhibit 1 [ATT 1], p. 8.) However, this assumption ignores several realities of the project, especially the likelihood of increased mortality for threatened and endangered fish species. (Ibid.) "Thus, it is highly plausible that north Delta diversion could be more constrained by environmental regulations in the future, not less constrained." (Ibid.)	Please refer to Common Response 3, Alternatives Development and Description, regarding the alternatives screening process. Please also refer to Chapter 3, Description of the Proposed Project and Alternatives, section titled Real-Time Operational Decision-Making Process regarding north Delta intake operations and Appendix 4A, Consideration of 2070 Conditions, regarding possible future regulatory actions. Response to Dr. Jeffrey Michael's comment regarding fish mortality and use of alternatives screening criterion 4 is addressed in response to comment 525-67. The Draft EIR does not support the comment that the Delta Conveyance Project would result in increased fish mortality that could threaten the existence of species. Although not required by CEQA, Appendix 4A provides information regarding possible future hydrologic and regulatory conditions under a potential 2070 scenario, and potential future water management actions in 2070. The content of this appendix identifies whether the type and magnitude of impacts may change from those disclosed for 2040 under a possible 2070 scenario as described. This appendix describes that the project would be able to capture inflow when it is available and would be expected to restore and protect the reliability of SWP water deliveries because overall SWP exports would be greater in 2070 than without the proposed project in 2070. The appendix goes on to explain that changed seasonal flow patterns driven by climate change and sea level rise could result in mixed effects on fish and aquatic resources in the Delta while recognizing the uncertainty in future scenarios. To assume increased mortality would be speculative. DWR would be required to comply with ongoing and future regulatory actions like those currently imposed to protect fish and wildlife, agricultural

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		flows, water quality objectives, and Delta outflows, which are expected to become more frequent in response to climate change. Please also refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the approach for future conditions. CEQA requires the impacts of the proposed project and alternatives to be compared against existing conditions, which is normally at the time that the Notice of Preparation (NOP) is published for an EIR. This approach ensures that the EIR discloses impacts that could be attributed to the project and alternatives and not to other conditions that may occur in the future.
525-17	The alternatives analysis lacks objectivity, which has allowed DWR to filter projects that are not substantially similar to the proposed project. This decision has arbitrarily eliminated several types of projects that would likely be more climate resilient, seismic resilient, and more cost-effective. (See Dr. Michael Report, Exhibit 1 [ATT 1], pp. 7-8; see also Gilbert Cosi.o Report, Exhibit 2 [ATT 2], pp. 1-2.)	Please see response to comment 525-13 regarding identifying alternatives to be considered for evaluation in the EIR.
525-18	II. The DEIR Fails to Analyze Flood Control and Levee-Related Impacts and Considerations (Ch. 3, 7, 24) A. The DEIR Misrepresents Delta Levee Conditions As described in the Cosio Report, the DEIR fails to accurately describe the existing conditions of Delta levees. (See Cosio Report, Exhibit 2 [see ATT 2].) These inaccuracies lead to deficiencies in the DEIR's analyses. For example, the DEIR states that the DCP would be operated in conjunction with the south Delta intakes, thus relying on continued use of the infrastructure that conveys water to the south Delta. (DEIR, p. 3-145.) Specifically, the DEIR states, "The SWP and potentially CVP would first use south Delta facilities to export water up to what is permitted under the existing water rights and all	The analysis contained in the EIR does not support the contention that existing and future improvements to Delta levees would cease because of the project, or that the project would adversely affect flood protection afforded by the existing levee system. Chapter 7, Food Protection, fully discloses the effects of constructing and operating the project on flood protection within the Delta study area. Response to comment 525-97 provides information on the standards to which new levees would be modified, which at the intakes, would meet PL 84-99 geometric and geotechnical standards to limit long-term flood risk. In response to comment 525-99, DWR recognizes that additional improvements to the Delta levee system are warranted; however the project is not a flood protection improvement project. Finally, response to comment 525-107 indicates facilities would be designed to not increase peak runoff during flood events.

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	applicable state and federal law and regulations." (ibid.) Although the ability to continue to export is based largely on the current infrastructure, there is no discussion about improvements to that infrastructure. (Cosio Report, Exhibit 2, p. 1.) If the levees are in the dire condition described in the DEIR, in order to continue to convey water to the south Delta export pumps, those levees must be improved. (DEIR, pp. 7-11, 7-16, 7-21; Cosio Report, Exhibit 2.) The DEIR is silent on this matter. The Cosio Report also provides several examples of DEIR statements that are inaccurate regarding the condition of Delta levees and flood risks. (Cosio Report, Exhibit 2, pp. 2-5.) The use of these inaccuracies mischaracterizes existing conditions and skews the analysis in the DEIR. For example, the DEIR points to the flood of 1986 to provide evidence of the flood risk in the Delta. (Cosio Report, Exhibit 2, p. 3.) However, this event is likely no longer relevant because in 1997 and 2017 the flood elevations recorded in 1986 were exceeded. (Ibid.) Thus, the DEIR's description of current channel capacity is erroneous. (Ibid.)	
525-19	B. The DEIR Fails to Consider Tunnel Boring Impacts to Levees The DEIR also fails as an informational document because it fails to analyze whether the vibration from project construction would result in settlement. (See CEQA Guidelines, § 15151.) Settlement can cause damage to buildings, levees, and other structures near the project's construction locations. (Cosio Report, Exhibit 2 [ATT 2], p. 2.) The DEIR does cite to one of the project's engineering project reports to show that vibration from tunnel boring machines was analyzed. (DEIR, p. 24-25.) This report indicates that settlement could impact structures and utilities. (Tunneling Effects Assessment, p. 19.) However,	The analysis of tunnel-induced ground settlement is not described in Chapter 24, Noise and Vibration (as identified by the comment), which analyzes effects on human receptors and associated land uses, but rather in Chapter 10, Geology and Seismicity. Chapter 10 describes the anticipated ground conditions along the project alignment and explains how project features would minimize settlement. Chapter 10 and the Tunneling Effects Assessment technical memorandum (Delta Conveyance Design and Construction Authority 2022f) provide a sufficient level of detail to show that settlement will be minor overall and that future geotechnical studies would determine what site-specific measures would be needed to protect existing infrastructure and buildings. This approach is similar to the one

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	the study only analyzes a handful of locations on the 40-mile tunnel route. (Cosio Report, Exhibit 2, p. 2.) This results in an incomplete impact analysis. Further, the results of this study are not analyzed in the DEIR. Thus, the DEIR has ignored a potentially significant impact. (Ibid.)	described in the Cosio report attached to the comment.
525-20	III. DEIR's Analysis of Agricultural Impacts is Inadequate (Ch. 15) A. DEIR is Based on Outdated Crop Salinity Information As a preliminary matter, the DEIR relies on outdated crop salinity data. "The DEIR section on Crop Salinity Tolerances (DEIR, pp. 15-18, 15-19) does not include any references from the last decade, omitting a series of reports over the past decade that show greater salinity impacts on Delta crops than assumed in the DEIR." (Dr. Michael Report, Exhibit 1 [see ATT 1], p. 10.) For example, one study, which was produced for DWR, studied more than 6,000 fields in the Delta and measured 50 salinity points throughout the Delta. (Id. At p. 11.) The study concluded that "irrigation water had statistically significant effects on cropping patterns in the Delta at the 99% confidence level, even when examining data over a time period that the DWR claims was in compliance with D-1641." (ibid. [emphasis added].) In addition to relying on outdated information regarding salinity impacts, the DEIR also utilizes the assumption that leaching fractions are between 15 and 20 percent. (DEIR, p. 15-20.) However, leaching fractions in the Delta have been shown to be half this value. (Dr. Michael Report, Exhibit 1, p. 12.) Both of these elements illustrate the inaccuracies included in the DEIR's agricultural impacts analysis.	The assertion that the EIR excludes recent data in the assessment of crop salinity tolerances is not supported by the EIR analysis. The modeling for salinity used outputs from the Delta Simulation Model II (DSM2), with the period of record modeled by DSM2 extending from 1923 through 2015. Please refer to Common Response 12, Agricultural Resources, for additional information on how the EIR evaluated crop salinity tolerances in its analysis. As discussed in Appendix 9L, Water Quality 2040 Analysis, climate change and sea level rise are primary drivers of water quality changes, including salinity levels, in the study area. As such, it is reasonable to expect that there may be some changes in crop types in the Delta in future decades, as operators adjust to changing baseline conditions and shift to crop types that are more tolerant of higher salinity levels in applied irrigation water. Such a change would be triggered regardless of whether any of the proposed project alternatives were implemented. The study referenced in Exhibit 1 provided by the commenter provides measured leaching fractions for seven commercial alfalfa fields in the south Delta region (Leinfelder-Miles 2016). The fields were selected for their soil textural and infiltration characteristics and differing irrigation water sources. The study found highly variable leaching fractions across these seven sites, including leaching fractions that exceeded the 15 percent leaching fraction used as a rule of thumb by Ayers and Westcot (1985), and leaching fractions that were lower than that value. The commenter references a study of more than 6,000 crop fields that indicated that irrigation water influences cropping patterns in the Delta.

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		Please see Common Response 12 regarding effects of the project's operation on salinity levels. Ultimately, the Delta is an estuarine system and historically portions of the Delta were saline. The gradient of freshwater conditions within the Delta has driven the distribution of crop types in the Delta. Areas with fresher water, such as the north Delta along the Sacramento River, are where many orchards and vineyards were planted, whereas the western Delta was more often planted in alfalfa and managed as pasture due to the naturally higher salinity water that was available in the channels.
525-21	B. DEIR Fails to Provide Significance Threshold Regarding Salinity Impacts to Agriculture The DEIR also fails to analyze potentially significant agricultural impacts. The DEIR includes three significance thresholds for agriculture. These thresholds include: - Impact AG-1 - Convert a Substantial Amount of Prime Farmland, Unique Farmland, Farmland of Local Importance, or Farmland of Statewide Importance as a Result of Construction of Water Conveyance Facilities (total acres) - Impact AG-2 - Convert a Substantial Amount of Land Subject to Williamson Act Contract or under Contract in Farmland Security Zones to a Nonagricultural Use as a Result of Construction of Water Conveyance Facilities (total acres) - Impact AG-3 - Other Impacts on Agriculture as a Result of Constructing and Operating the Water Conveyance Facilities Prompting Conversion of Prime Farmland, Unique Farmland, Farmland of Local Importance, or Farmland of Statewide Importance (DEIR, p. 15-3.) According to the DEIR, Impacts AG-1 and AG-2 would be significant and unavoidable, and Impact AG-3 would	Please refer to Common Response 12, Agricultural Resources, regarding how the EIR evaluated crop salinity tolerances in its analysis. Please also refer to Chapter 9, Water Quality, which concludes that while there could be some increases in salinity (based on modeled electrical conductivity) at some Delta locations in some months, these effects would be less than significant. Additionally, as discussed in response 525-20 and in Appendix 9L, Water Quality 2040 Analysis, climate change and sea level rise are primary drivers of future water quality changes, including salinity levels, in the study area. As such, it is reasonable to expect that there may be some changes in crop types in the Delta in future decades, a change would be triggered regardless of whether any of the proposed project alternatives were implemented.

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	be less than significant. (ibid.) However, the DEIR's significance thresholds are too narrow to capture multiple significant impacts to agriculture. Specifically, Impact AG-3 appears to be a catch-all, however, it would only be significant if the "other impacts" resulted in the conversion of farmland. (Ibid.) This ignores two interconnected impacts that would likely be significant. The impacts to crops due to increased salinity and the economic impact of changing crops and decreasing crop yields due to increased salinity. (See Dr. Michael Report, Exhibit 1 [see ATT 1], p. 12.)	
525-22	The DEIR provides: Construction and operation of the project's water conveyance facilities could indirectly affect agriculture within the study area through changes in groundwater elevation in localized areas affecting crop yields, disruption of agricultural infrastructure such as irrigation and drainage facilities, and operation-related changes in salinity affecting the water quality of irrigation water applied to crops. (DEIR, p. 15-51.) However, the DEIR finds that these impacts would be less than significant because these impacts would not trigger a substantial conversion of farmland to nonagricultural uses. (DEIR, p. 15-52.) This completely ignores the impacts to agriculture from having to shift to more salinity-resistant crops and being saddled with lower crop yields. (Dr. Michael Report, Exhibit 1 [see ATT 1], p. 13.) "While land is not expected to go out of production, as discussed in the previous section, farmers would lose revenue by shifting to lower value more salt-tolerant crops as salinity rises." (Ibid.) Even small changes in salinity could "result in a $1.8 million decrease in crop revenue	The assertion that DCP's operations would create significant impacts on agriculture and that the EIR failed to analyze those impacts is not consistent with the contents and findings of the EIR. Please see responses to comments 525-20 and 525-21 and Common Response 12, Agricultural Resources regarding the analysis of salinity and crop types in the Draft EIR. As noted in these responses, changes in crop types in the Delta would be triggered regardless of whether any of the proposed project alternatives were implemented. Please refer to Chapter 17, Socioeconomics, regarding an analysis of the changes in values of agricultural production and production costs within the study area as a result of the project alternatives. It also includes a summary of changes in acreages and production values relative to existing conditions by aggregate crop category for each alternative. The analysis uses the following groups for crops: grains; field crops, forage crops; vegetable, truck, and specialty crops; orchard and vineyard).

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	in the Delta just from shifts to lower-value crops over time." (Id. at p. 11.) Although CEQA does not require an EIR to determine whether there the project would cause economic and social impacts, CEQA does allow a project's economic effect to be taken into account when determining the significance of physical changes caused by the project. (CEQA Guidelines,§ 15131, subd. (b).) This procedure is appropriate here. These impacts are not properly analyzed in the DEIR. Instead, the DEIR constricts its significance thresholds so as to arbitrarily eliminate the need to discuss other impacts. This violates CEQA. "Compliance with the threshold does not relieve a lead agency of the obligation to consider substantial evidence indicating that the project's environmental effects may still be significant." (CEQA Guidelines,§15064, subd. (b)(2).) Here, there is substantial evidence that the DCP's operations would create significant impacts to agriculture; failing to analyze those impacts is a violation of CEQA.	
525-23	IV. DEIR's Analysis of Recreation Impacts is Inadequate (Ch. 16) The Delta lies at the junction of California's two largest rivers - the Sacramento and San Joaquin. The Sacramento-San Joaquin Delta is California's most crucial water and ecological resource. It is the largest freshwater tidal estuary of its kind on the west coast of the Americas, providing important habitat for birds on the Pacific Flyway and for fish that live in or pass through the Delta. The Delta houses historic towns, scenic roads, farm stands, and ample opportunities for recreation like boating, birding, biking, and fishing. This unique place brings people from all over the state for recreation and tourism. The Delta suppo11s a recreation and tourism industry that provides an estimated $251 million in direct Delta recreation spending each	The project has been designed to lessen potential effects on communities and visitors using River Road (State Route 160) that connect them. Chapter 3, Description of the Proposed Project and Alternatives, in the section entitled On-Site Roads at the Intakes, states permanent separate paved roads and gravel-surfaced roads and work areas would be constructed at the intakes for use during construction and later operation. As noted in this section, under each alternative intake configuration, new roads would be developed and construction access and primary maintenance access to the intake site would be from the new intake road. These roads and access areas will keep construction activity away from community access routes along River Road. Similarly, spoil locations are proposed to be sited at Twin Cities Complex near Interstate 5 (all alternatives), on Bouldin Island interior (Alternatives 1, 2a, 2b, and 2c), and on Lower Roberts Island (Alternatives

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	year. (Delta Protection Commission, Economic Sustainability Plan.for the Sacramento- San Joaquin Delta, Recreation and Tourism Chapter 2020 Update [DPC 2021 b], p. v.) These revenues come from more than 10 million total visitor days each year. Additionally, the DPC found that "Nature and access to the water are the most appealing aspects of the Delta." (DPC 2021b, p. 41.) Part of the Economic Sustainability Plan's ("ESP") recreation enhancement goals is to promote recreation destinations as focal points in the Delta and highlight Delta values by highlighting Legacy Communities. (Id. At 81.) The ESP determined that "The first focal point destination is proposed to include the Legacy Communities of Locke, Walnut Grove, Ryde, Courtland, and Hood. (id. At 86.) All of these communities would be negatively impacted by the DCP. As discussed in additional detail below, the construction, muck piles, and permanent infrastructure would decimate the aesthetic value of several areas of the Delta. In doing so, the project would not only create aesthetic and recreational impacts but also create additional barriers to obtaining the goals of the ESP. (See Dr. Michael Report, Exhibit I [ATT 1], p. 15.)	3, 4a, 4b, 4c, and 5), and none of these are readily visible or adjacent to Locke, Walnut Grove, Ryde, Courtland, or Hood. The comment assertions regarding level of potential aesthetic or other effects on the communities in the Delta are not supported by the analysis in the EIR. As discussed in Chapter 18, Aesthetics and Visual Resources, section titled Impacts of the Project Alternatives on Aesthetics and Visual Resources, a conservative evaluation approach was undertaken for the purposes of CEQA, where appropriate. While the analysis finds that construction of the water conveyance features would result in impacts on visual resources and the visual character of the Delta, mitigation measures and environmental commitments will be implemented to minimize these effects on scenic vistas and resources. Refer to Chapter 18 for additional discussion on measures that will be implemented to protect aesthetics and visual resources of the Delta. The assertion that the project will negatively impact recreational opportunities is not supported by the contents of the EIR. As discussed in Chapter 16, Recreation, none of the alternatives would result in a significant effect or increase in the use of existing neighborhood and regional parks or other recreational facilities. Refer to Common Response 13, Recreation and Recreational Opportunities, for additional discussion on the evaluation of recreational opportunities conducted for the EIR. See also Chapter 17, Socioeconomics, for further details on the economic analysis for the project.
525-24	A. The Surveys Conducted to Establish a Recreation Baseline are Inadequate An EIR must describe the physical conditions in the vicinity of a project. (CEQA Guidelines,§ 15125, subd. (a).) This description constitutes a baseline that a lead agency uses to determine whether an impact would be significant. (Ibid.) The purpose of this requirement is to give the public and decision makers the	The comment asserts that the field verification efforts, or field surveys, were inadequate to provide a proper baseline. This assertion is not supported by the analyses contained in the EIR. Please see Common Response 13, Recreation and Recreational Opportunities, regarding survey methods for both site observations and interviews used during the recreational analysis. As noted in Chapter 16, Recreation, the baseline or affected environment characterization was based on numerous sources of

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	"most accurate and understandable picture practically possible of the project's likely near-term and long-term impacts." (CEQA Guidelines,§ 15125.) Limited field reconnaissance of selected project sites was undertaken on February 2 and 4, 2021. (DEIR, pp. l 6A.2-6-20.) Limiting surveys of chosen recreational locations and access points to two days is inadequate to provide a proper baseline. Additionally, this short amount of time did not allow all selected recreational access locations to be thoroughly evaluated. [Footnote 1: DEIR Attachment l 6A.2 includes all the recreational site locations where field reconnaissance was conducted for baseline analysis.] (Ibid.) It is implausible that over 20 locations were selected and properly surveyed over the short span of two days. [Footnote 2: Only the team's field notes based on single-day observations of project sites were included in DEIR, Figure 16A.2-l.] The court in Save Our Peninsula explained that "the date for establishing baseline cannot be a rigid one. Environmental conditions may vary from year to year and in some cases it is necessary to consider conditions over a range of time periods." (Save Our Peninsula Committee v. Monterey County Bd. Of Supervisors (2001) 87 Cal.App.4th 99, 125; See Communities for a Better Environment v. South Coast Air Quality Management Dist. (2010) 48 Cal.4th 310, 327-328.) The known recreational locations that would be impacted by the project should have been properly evaluated over a longer period of time to obtain a representative sample of the Delta's recreation. For example, in 2019, researchers from California State University, Sacramento conducted a recreation and tourism study in the Delta. The study included 527 individuals that filled out online surveys or provided information at one of the Delta's several festivals. (Delta Protection Commission,	information. For the Delta area, there are numerous recent relevant reports widely available that characterize recreation areas, use, and trends. This information was found to be more than adequate to characterize existing conditions and trends for recreation in the Delta and surrounding areas. Please refer to Chapter 16, specifically the section titled Description of Existing Conditions in the Study Area, for a detailed description of existing conditions in the potentially affected recreation areas of the Delta. As noted in Chapter 16, the reconnaissance survey was undertaken to verify public access routes and locations or physical evidence of recreation use at dispersed recreation sites rather than observe or sample potential active or ongoing recreation activity. The comment also alleges that other information sources, such as a 2019 California State University, Sacramento study would have provided further and more in-depth understanding for the recreation analysis; however, this study was used in characterizing recreation resources in the EIR and is cited in Chapter 16 as "Delta Protection Commission. 2019. Recreation & Tourism in the Delta, A Study of Preferences for Activities and Facilities, Information Sources, and Economic Contributions of Delta Events. Prepared by Dr. Amy Mickel, Dr. David Rolloff, Dr. Elizabeth Erickson and Dr. Gregory Shaw, California State University, Sacramento, May. Sacramento, CA."

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	Recreation & Tourism in the Delta, A Study of Preferences for Activities and Facilities, Information Sources, and Economic Contributions of Delta Events [DPC 2019], p. 19.) The data derived from that study help provide a more in- depth understanding of some of the recreation activities pursued in the Delta.	
525-25	Additionally, DWR failed to utilize other areas of expertise regarding recreational uses in the Delta. Anecdotal notes from public employees were taken between January 24 and March 24, 2021. (DEIR, pp. 16A.1-1-14.) Jeff Anderson (Associate Parks Planner, Yolo County Parks and General Services) was interviewed for recreational information on the Clarksburg Boat Launch. (DEIR, p. l 6A. L-2.) He suggested speaking with someone from the California Department of Fish and Wildlife (' CDFW") because CDFW utilizes game patrols and could offer additional insight into recreation at the boat launch. (Ibid.) However, no one from the CDFW game patrols was interviewed, pointing to a lack of data gathering. (DEIR, pp. 16A.l-l to -14.) In addition, Ryen Goering (Chief Ranger for Diablo Range) noted that it would be useful to contact the Marine Patrol out of Lauritzen Yacht Harbor between the towns of Oakley and Antioch for recreational information. (DEIR, p. 16A.l-6.) Similarly, no one from the Marine Patrol from the Lauritzen Yacht Harbor was interviewed. (DEIR, pp. 16A.1-1 to -14.) The lack of information gathering resulted in an inaccurate recreation baseline that fails to capture the project's environmental impacts. (Sundstrom v. County of Mendocino (1988) 202 Cal.App.3d 296, 311 [A lead agency "should not be allowed to hide behind its own failure to gather relevant data."].)	Appendix 16A, Recreation Resources Inventory Update and Data Collection Documentation, provides a variety of information from firsthand observers of recreation areas proximate to the project alternatives facilities. Please see Common Response 13, Recreation and Recreational Opportunities, regarding the survey methods for the EIR recreation analysis. The Yolo County Parks and General Services staff response verified ownership and administration of the Clarksburg Boat Ramp and noted the potential to follow up with CDFW staff. However, it was determined no interview with CDFW was required since ownership information and management practices had been obtained in the interview with the Yolo County Parks and General Services staff and no specific information from CDFW staff—who do not manage the boat ramp facilities—was needed. The comment does not provide details or context to what baseline information may be missing in characterizing historic conditions, particularly with respect to CDFW and the Clarksburg Boat Ramp, which is managed by Yolo County Parks and General Services. Additional information regarding the baseline is provided in the section titled Environmental Setting in Chapter 16, Recreation.

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525-26	B. DEIR Fails to Analyze Impacts to Recreation Due to Degradation of Scenic Views The DEIR utilizes two thresholds of significance for recreational impacts. • Impact REC-1: "Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated." (DEIR, p. 16-23.) • Impact REC-2: "Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment." (DEJR, p. 16-27.) The DEIR determined that both impacts would be less than significant. (DEIR, pp. 16- 25, 16-28.) However, the DEIR has failed to discuss whether the impacts to aesthetics would result in a significant impact to recreation. "Compliance with the threshold does not relieve a lead agency of the obligation to consider substantial evidence indicating that the project's environmental effects may still be significant." (CEQA Guidelines,§ 15064, subd. (b)(2); see also East Sacramento Partnership for a Livable City v. City of Sacramento (2016) 5 Cal.App.5th 281, 300.) Further, "[I]n preparing an ElR, the agency must consider and resolve every fair argument that can be made about the possible significant environmental effects of a project." (Protect the Historic Amador Waterways v. Amador Water Agency (2004) 116 Cal.App.4th 1099, 1109.) Here, the aesthetic impacts would negatively affect recreation, however, the DEIR failed to analyze the impact. The DEIR discusses adverse impacts to the scenic quality of the Sacramento River due to the tunnel Project: “These project activities and facilities would introduce an adverse visual change that differs greatly from the normal	Please refer to Chapter 18, Aesthetics and Visual Resources, for analysis and mitigation regarding visual resources impacts. As noted in Chapter 16, Recreation, the recreation resources of the Delta include aspects of visual quality, scenic views, and other resource considerations such as water quality, historic qualities, and land use. All of these attributes in the recreation environment were considered as part of the baseline against which the proposed project was assessed for impacts on recreational opportunities. In evaluating Impact REC-1 in particular, the effects on recreationists include all the potential changes to baseline conditions (that includes scenic attributes) in the impact analysis. This includes those impacts of the project that could diminish the recreation quality and then potentially displace users such that neighboring parks use could change as a result of recreationists shifting use patterns due to the project construction or operation impacts. Chapter 18 identifies recreationists as one of five types of viewer groups potentially affected by the project and rates the visual sensitivity of the recreationalists as high (see the table titled Affected Viewer Groups and Associated Sensitivities for the Project). The purpose of the analysis of visual impacts in Chapter 18 is to assess the project’s effect on changes in visual character and quality, State scenic highways, and scenic vistas, as well as the effects of project-generated light and glare, in part from the aspect of the viewer group. In the case of the recreationists, the group is not defined solely by those within or using designated recreational facilities or areas as defined in Chapter 16, Recreation. Instead, this viewer group includes those engaging in broader recreational, leisure, and/or cultural activities in the aesthetic study area. The purpose of the impact analysis in Chapter 16 focuses on the physical effects of the project on designated or known recreational facilities, not the viewing experience at or within those facilities in the project study area, which is distinct from the effect on the recreational experience. Thus, while recreational resources of the Delta include aspects of visual quality and scenic views, the Chapter 16 impact

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	range of visual character and quality along the Sacramento River in this area because views along affected segments of the river tend to be static and visual changes typically result only from fluctuating water levels (e.g., high flows introducing a tempora1y siltation water mark along levee banks) or small-scale changes in vegetation (E.g., as tree dies or new ones grows)." (DEIR, p. 18-51.) The DEIR goes on to determine that Impact AES-I would be significant and unavoidable for several aspects of the project. (DEIR, p. 18-91 - 93.) Part of this significance determination is due to the intakes, which would "introduce large, utility or industrial-type concrete and steel intake structures, approximately 21 to 28 feet from top of the river's water surface to the top of the structure's deck with a total structure length of 904 to 1,466 feet along the river." (DEIR, p. 18-52.) The DEIR even discusses that recreationists have a high sensitivity to aesthetic changes. (DEIR, p. 18-13.) "Recreationists are more likely to value the natural environment, appreciate the visual experience, and have a strong sense of ownership over the waterways and corridors they use for recreation and that are highly valued throughout greater Sacramento and Delta region." (Ibid.) However, the DEIR fails to analyze whether Impact AES-I coupled with the heightened sensitivity to aesthetic changes, would impact recreation in the project area.	analysis, which analyzes the physical effects on recreational facilities as a result of project implementation, is not directly influenced by changes in viewing. Visual impacts on recreationists have been considered and analyzed in Chapter 18.
525-27	V. The DEIR Fails to Adequately Analyze Transportation Impacts (Ch. 20) The San Joaquin Department of Public Works ("DPW") Report shows that the DEIR's discussion of transportation impacts, environmental impacts from additional transportation	The commentor's assertion that the Draft EIR fails to adequately evaluate the project's transportation impacts is not consistent with the CEQA findings in Chapter 20, Transportation, in the section titled Summary Comparison of Alternatives, where the project alternatives' potential impacts on transit, roadways, bicycle and pedestrian facilities, rail transportation, marine transportation, and navigation were analyzed. The

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	infrastructure, and the cherry-picking of potential impact areas create an inadequate DEIR. (Exhibit 3 [ATT 3].) A revised DEIR is required to include a proper analysis of vehicle miles traveled ("VMT"), an analysis of the environmental impacts that would occur from the construction of new transportation facilities throughout the project area, and provide adequate mitigation measures for the project's transportation impacts. Additional information is provided in the sections below regarding the DEIR's omission of truck trips in its VMT analysis, omission of State Route 99 in its transportation analysis, and utilization of unenforceable mitigation.	roadway segments analyzed in Chapter 20 were identified as part of the Notice of Preparation scoping process. During this scoping process, Caltrans excluded SR 99 because it considered this parallel facility to I-5 (with 18 segments analyzed) to be beyond the area of potential impact and mitigation. Please refer to Common Response 14, Transportation, regarding the methodology and approach of the VMT impact analysis used in the EIR. In Chapter 20, the table titled Comparison of Impacts on Transportation by Alternative provides a summary comparison of impacts on transportation (TRANS-1 through TRANS-5) by alternative and CEQA findings after all mitigation was applied. All the project alternatives would have the same impact conclusions because all of the project alternatives would have similar impact mechanisms, and potential effects would have similar magnitudes as described in the section titled Environmental Impacts and the section titled Impacts and Mitigation Approaches.
525-28	A. The DEIR's VMT Analysis Arbitrarily Omits Truck Trips The DEIR finds that there would be an increased average VMT per construction employee versus the regional average. (DEIR, p. 20-40.) The DEIR determined that this impact would be significant and unavoidable with mitigation. (Ibid.) However, this conclusion underestimates the significance of the impact. An EIR must provide information regarding significant impacts in a manner that is sufficient to allow decision makers and the public to understand the environmental consequences of the project. (CEQA Guidelines, § 15151; Cleveland Nat'l Forest Foundation v. San Diego Assn. of Governments (2017) 3 Cal.5th 497, 514 ["An EIR's designation of a particular adverse environmental effect as 'significant' does not excuse the EIR' s failure to reasonably describe the nature and magnitude of the	The comment's assertion that the Draft EIR incorrectly excludes truck trips from the assessment of vehicle miles traveled (VMT) is inaccurate. The VMT analysis in the Draft EIR followed best practices and guidance provided by California Governor's Office of Planning and Research (OPR) in its Technical Advisory on Evaluating Transportation Impacts in CEQA (California Governor's Office of Planning and Research 2018). This guidance clarifies that heavy duty vehicles are excluded from the definition of "automobile" in CEQA Guidelines 15064.3(a). CEQA Guidelines Section 15064.3 was revised in 2018 pursuant to Senate Bill (SB) 743. Among other things, SB 743 required changes to the CEQA guidelines so that the criteria for determining the significance of transportation impacts "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land use." OPR determined that VMT was the most appropriate metric to achieve this evaluation under CEQA, where VMT is defined as the number of automobile (including light-

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	adverse effect."].) Here, the DEIR has omitted heavy vehicles from its VMT analysis. The DEIR states, "In its December 2018 publication entitled, Technical Advisory on Evaluating Transportation Impacts in CEQA, OPR explains that the term automobile as used in Section l 5064.3(a) "refers to on-road passenger vehicles, specifically cars and light trucks"; heavy vehicles are not included in the definition (California Governor's Office of Planning and Research 20 I 8:4). Therefore, truck trips for construction of the project alternatives are not included in the VMT calculations. Instead, for informational purposes, they are included in the roadway segment and intersection analysis provided in Appendices 20A and 20C." (DEIR, p. 20-23.) However, stating that "heavy vehicles are not included in the definition" is inaccurate and misleading. According to the OPR guidance, CEQA Guidelines section 15064.3, subdivision (a), states, "For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project. Here, the term "automobile" refers to on- road passenger vehicles, specifically cars and light trucks. Heavy-duty truck VMT could be included for modeling convenience and ease of calculation (for example, where models or data provide combined auto and heavy truck VMT). For an apples-to-apples comparison, vehicle types considered should be consistent across project assessment, significance thresholds, and mitigation." (OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA, p. 3.) Thus, the technical advisory does not prohibit the inclusion of heavy vehicles, but the DEIR chose not to include heavy-duty trucks in its VMT calculations.	duty trucks) miles attributed to a project (CEQA Guidelines 15064.3(a). The focus on automobile VMT aligns SB 743 with SB 375, which seeks to reduce greenhouse gas emissions from cars and light duty trucks. For this and other reasons, OPR excludes heavy duty vehicles trips from the definition of "automobile" in CEQA Guidelines 15064.3(a). As explained in Chapter 20, Transportation, heavy duty vehicles trips for construction of the project alternatives are included in the roadway segment and intersection analysis contained in Appendix 20A, Delta Conveyance 2020 Traffic Analysis, and Appendix 20C, Delta Conveyance 2040 Traffic Analysis. Please refer to Common Response 14, Transportation, for additional information on the transportation impact analysis conducted for the Draft EIR.

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525-29	The DEIR's choice to omit truck trips in its Impact TRANS-1 analysis regarding VMT is peculiar because the number of truck trips was calculated and included in Appendix 20A. Appendix 20A provides graphs similar to those found in Chapter 20. The graphs in Chapter 20 provide "Daily Total Employee Trips and Vehicle Miles Traveled" (DEIR, p. 20-37 [Alternative 5]), and the graphs in Appendix 20A provide "Daily Total Employee and Truck Trips" (DEIR, p. 20A-35 [Alternative 5]). The DEIR does not provide an explanation (other than its inaccurate OPR quote) for why it chose to omit truck trips.	The VMT analysis in the Draft EIR followed best practices and guidance provided by OPR in its Technical Advisory on Evaluating Transportation Impacts in CEQA (California Governor's Office of Planning and Research 2018). This guidance clarifies that heavy duty vehicles are excluded from the definition of "automobile" in CEQA Guidelines 15064.3(a). Please refer to response to comment 525-28 and Common Response 14, Transportation, for additional information on the VMT analysis conducted for the DEIR. As explained in Chapter 20, Transportation, truck trips for construction of the project alternatives are included in the roadway segment and intersection analysis contained in Appendix 20A, Delta Conveyance 2020 Traffic Analysis, and Appendix 20C, Delta Conveyance 2040 Traffic Analysis. The appendices were completed to aid in the understanding of potential major increases to traffic volumes on roadways and vehicle delay at intersections that may be caused with the addition of project-generated construction traffic. The full burden of project construction traffic (i.e., automobiles and heavy-trucks) is included in the LOS analysis to assess these potential changes and also for use by the U.S. Army Corps of Engineers' (USACE) in their coordination with local agencies to determine improvements during the construction phase of the project. Note that the analyses presented in Appendices 20A and 20C are for informational purposes.
525-30	The increase in VMT from truck trips would be large. For example, the DEIR states that "The absolute maximum vehicle trip generation (cars and trucks) was determined to be 6,893 vehicle trips on the regional and local transportation system occurring on January 22 of year 6 (2,213 days after construction begins)." (DEIR, p. 20A-35.) Although Chapter 20 does not provide the precise max daily trips, the graph for Alternative 5 indicates that the max employee-only trips would equate to about 3,100 to 3,200. (DEIR, p. 20-37.) Therefore, the	The VMT analysis in the Draft EIR followed best practices and guidance provided by the California Governor's Office of Planning and Research in its Technical Advisory on Evaluating Transportation Impacts in CEQA (California Governor's Office of Planning and Research 2018). SB 743 does not include commercial vehicle trips and the delivery of materials that will be used for construction in its definition of VMT. These truck trips for construction of the project alternatives are included in the roadway segment and intersection analysis contained in Appendix 20A, Delta Conveyance 2020 Traffic Analysis, and Appendix 20C, Delta Conveyance

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	DEIR's omission of truck trips arbitrarily decreases VMT by up to half on any given construction day. This omission makes the VMTs analysis inadequate to properly apprise decision makers and the public of the potential environmental consequences of the project. (CEQA Guidelines, § 15151.)	2040 Traffic Analysis. Please refer to responses to comments 525-28 and 525-29 and Common Response 14, Transportation, regarding the VMT analysis and threshold of significance used in the EIR.
525-31	B. The DEIR Fails to Include State Route 99 in its Transportation Analysis The DEIR analyzed 120 different roadway segments to obtain existing conditions in the project area. However, it did not include State Route ("SR") 99, which is a main thoroughfare on the eastern portion of the project area. (DEIR, p. 20A-12; see also Exhibit 3 [ATT 3].) The DEIR also omitted SR 99 in its study of 44 intersections in the project area. (DEIR, p. 20A-15.) Additionally a large section of SR 12 was omitted from the intersection map, but included in the road segments. Removing SR 99 from the transportation analysis likely results in an underestimate of hazardous intersections and road segments. (See Exhibit 3, p. 2.) The DEIR finds the impact to be less than significant because of the implementation of Mitigation Measure TRANS-1. (DEIR, p. 20-59.) However, SR 99 was not included in the impact analysis and it was also not included in the mitigation measure. (DEIR, pp. 20-40 to 20-44.) Due to the increase in construction workers and construction vehicles moving throughout the Sacramento-San Joaquin Valley, the DEIR should have provided an analysis regarding the potential transportation impacts on SR 99 and intersecting roads.	As discussed in response to comment 525-27, the roadway segments analyzed in Chapter 20, Transportation, were identified as part of the Notice of Preparation scoping process, during which, Caltrans excluded SR 99. Appendix 20A, Delta Conveyance 2020 Traffic Analysis, and Appendix 20C, Delta Conveyance 2040 Traffic Analysis, include three intersections on SR 12. Please refer to Common Response 14, Transportation, for additional discussion on the roadway segment and intersection level of service analysis used in the EIR.
525-32	C. The Project Relies on Mitigation Measures Incorporated into the Project That Are Not Enforceable	The comment's claim that Mitigation Measure TRANS-1 is improperly deferred and lacks enforceability is inaccurate. The measure fully meets the criteria of CEQA Guidelines, § 15126.4 (a). Specifically, (1) DWR is

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	An EIR must describe measures to minimize significant adverse impacts. (CEQA Guidelines,§ 15126.4 (a).) Mitigation measures must be fully enforceable and their formulation cannot be deferred until some future time. (CEQA Guidelines, § 15126.4 (a).) CEQA requires that "the agency (1) commits itself to the mitigation, (2) adopts specific performance standards the mitigation will achieve, and (3) identifies the type(s) of potential action(s) that can feasibly achieve that performance standard." (Ibid.) The DEIR does not meet these requirements. The DEIR provides several measures to "mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts[.)" (DEIR, p. 20-29.) The DEIR states: "[T]he following proposed construction management and design requirements to reduce effects on the community from construction-related traffic on Delta roadways. These limitations are intended to enhance public safety and reduce traffic congestion during construction. Although they are not related to VMT, the VMT analysis considers their effect on traffic patterns." (DEIR, p. 20-29.) However, the list includes several limitations that are outside of DWR's authority and unenforceable. The list includes items such as: • No construction traffic would be allowed within Solano County except for on I-80 and SR 12 in Solano County (between I-80 and the Sacramento River), or for individuals or vehicles traveling from homes or businesses in Solano County. • No construction traffic would be allowed in Yolo County except for on 1- 80, or for individuals or vehicles traveling from homes or businesses in Yolo County.	committed to implement the measure pursuant to the Mitigation Monitoring and Reporting Program; (2) the measure outlines performance standards for agency coordination and development and implementation of transportation management plans; and (3) the measure outlines specific actions that will be undertaken to reduce the identified transportation impacts. The three examples included by the commentor of no construction traffic on key roadways serving the Delta are part of the project description documented in the Delta Conveyance Engineering Project Reports (EPRs) (Delta Conveyance Design and Construction Authority 2022g, 2022h). A combination of transportation management plans (described in Mitigation Measure TRANS-1) and improvements to the transportation system would be developed in coordination with the Department of Public Works to reduce potential traffic safety hazards at key intersections and emergency access to delta communities within San Joaquin County. DWR will incorporate the roadway limitations into contracts that require the contractor to comply with each condition in order to reduce potential effects on Delta communities.

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	• No construction traffic, except the employee shuttle buses or vans, and small pickup and utility trucks, would be allowed on Hood-Franklin Road. This excludes construction vehicles crossing Hood-Franklin Road at the improved intersection with the new intake haul road between intakes A, B, and C. (DEIR, p. 20-29.) These types of limitations cannot be enforced by DWR or likely any other agency. Several other limitations include similarly unenforceable actions. Further, these limitations are also used to avoid impacts that would be considered under Impact TRANS-3. The limitations for where specific traffic can and cannot travel skews the DEIR's analysis of hazards in the project area and likely creates an underestimated VMT average. The DEIR cannot rely on the list of unenforceable measures to mitigate and avoid transportation impacts.	
525-33	VI. DEIR's Air Quality Analysis Relies on an Inaccurate Assessment of Air Quality and Greenhouse Gas Emissions that Vastly Underestimates Project Impacts The expert comments of Pless Environmental prepared by Dr. Pless provide substantial information regarding the failures of the DEIR's air quality and greenhouse gas analyses. (Exhibit 4 [ATT 4].) The DEIR fails as an informational document because it fails to provide decision makers and the public with an understanding of the environmental consequences caused by the project's emissions. Some of the most important findings of Dr. Pless Report are summarized below.	This information summarizes comments provided in an attachment to letter 525. Individual comments from the attachment are addressed in these responses to the commenter's letter. The analysis contained in Chapter 23, Air Quality and Greenhouse Gases, and supporting appendices meets the CEQA requirement to make a good-faith effort at full disclosure of potential air quality impacts of the project.
525-34	A. The DEIR's Approach to Analyzing and Reporting the Project's Air Quality Emissions is Flawed The data and conclusions contained in the DEIR are presented in a manner that is difficult to follow and creates unnecessary	Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the length and complexity of the EIR. The Executive Summary, in the table titled Comparison of Impacts on Air Quality and Greenhouse Gases by Alternative, presents quantitative information for selected air quality

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	confusion in the analysis. (See Pub. Resources Code,§ 21003; CEQA Guidelines,§§ 15002, 15121.) Many of the tables contained in the Executive Summary do not accurately reflect the tables provided in Chapter 23. (Exhibit 4, pp. 6-9.) For example, Impact AQ-1 "would be significant under CEQA for all project alternatives because construction could result in exceedance of SMAQMD's maximum daily NOx and PM10 thresholds before mitigation." (DEIR, p. 23-73.) However, Table ES-21 provides the maximum level of NOx, but not PM10, and labels Impact AQ-1 as less than significant. (DEIR, p. ES-100.) This is misleading and fails to provide the public with a basic understanding of the impact. (Exhibit 4 [ATT 4], pp. 6-8.)	indicators; it is not an exhaustive presentation of emissions results. The commenter is referred to Chapter 23, Air Quality and Greenhouse Gases, Impacts AQ-1 through AQ-4, for a full summary of construction and operational emissions. As disclosed in these impacts, with mitigation, project construction would not contribute a significant level of air pollution such that regional air quality in the project area would be degraded. Accordingly, the table titled Comparison of Impacts on Air Quality and Greenhouse Gases by Alternative presents the CEQA findings after all mitigation is applied, and identifies Impacts AQ-1 through AQ-4 as less than significant. The commenter is referred to table titled Summary of Delta Conveyance Project Impacts and Mitigation Measures for a summary of impact conclusions before and after mitigation.
525-35	The DEIR also misconstrues the San Joaquin Valley Air Pollution Control District's guidance for construction emissions. (Exhibit 4, pp. 10-11. [see ATT 4]) The guidance states that where information is available, the maximum daily emissions should be calculated. The DEIR utilizes an average for daily construction emissions. (Id. At p. 11.) The use of the average versus the maximum daily likely failed to identify the severity of the emissions impact. (Id. At pp. 11-12.)	The EIR correctly applies SJVAPCD's guidance for calculating daily emissions for comparison to their ambient air quality analysis (AAQA) trigger. Regardless, SJVAPCD's AAQA trigger is not used as the basis for significance of any air quality impact in the EIR. The significance of localized air quality impacts is assessed by comparing modeled pollutant concentrations to the federal and state ambient air quality standards or significant impact levels. Please see response to comment 525-151 for additional discussion.
525-36	Additionally, Dr. Pless' Report provides substantial evidence showing that the modeling assumptions used for heavy-duty construction equipment are inaccurate and misleading. (Exhibit 4 [ATT 4], at pp. 12-26.) The DEIR assumes that construction equipment would have much lower emissions from the use of Tier 4 emissions rates. (Ibid.) However, much of the equipment likely to be used for construction would not meet this requirement and therefore have much higher emission rates. (Exhibit 4, at pp. 18-26.) These rates are not captured in the modeling, which likely underestimates the total emissions for the project. (Id. at p. 26.) The underestimation of emissions is not only important to emissions determinations generally, but	The assertion that a revised draft EIR is required to adequately address AQ and GHG impacts is not supported by the contents of the EIR. This information summarizes assertions made in a supporting attachment to letter 525. Individual comments from the attachment are addressed in these responses to the commenter's letter. Please see responses to comments 525-153 through 525-163 and Common Response 15, Air Quality and Greenhouse Gases, regarding technical methods for the estimation of criteria pollutants, including emissions from construction equipment. Common Response 15 describes revisions made to the air quality analysis for the Final EIR in response to public comments and resulting from other technical refinements. None of revisions described in

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	also to calculating cancer risks from the project. The DEIR states that Alternative 5 would result in an excess cancer risk of 8.44 in one million, which is less than the significant threshold of 10 in one million. (DEIR, p. 23-149; see also Exhibit 4, at p. 26 [describing how the DEIR cancer risk determination underreports risk].) However, based on the inaccuracies in the DEIR's modeling, Dr. Pless concludes that it is likely that the increased cancer risk would be above 10 in one million. (Exhibit 4, at p. 26.) A revised DEIR is required to include a proper analysis of the project's emissions, and an analysis of the environmental impacts that would occur from those emissions. Further, a revised DEIR would need to provide adequate and enforceable mitigation measures for the project's emissions impacts.	Common Response 15 and made in Chapter 23 resulted in a new significant environmental impact, substantial increase in the severity of an environmental impact, or required additional mitigation measures to which DWR was unwilling to commit. Please see response to comment 525-164 regarding the estimation of potential health risks from construction generated emissions. As noted in the response, revisions to the HRA did not result in any additional locations or alternatives where modeled health risks exceeded thresholds, and as such, there was no change to the impact determination for Impact AQ-6. See also Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, for discussion on the adequacy of mitigation measures and comments that request document recirculation.
525-37	B. DEIR Fails to Protect Environmental Justice Communities from Detrimental Air Quality Impacts "[S]tate legislation, executive orders, and policies instruct state agencies to consider the impacts of their actions on environmental justice (minority and low-income) communities." (DEIR, p. 29-1.) Environmental justice communities in the City of Stockton would be negatively impacted by the project. While Alternative 5 in the DEIR would have fewer air emissions impacts in the central part of the Delta, construction of the Bethany Alternative creates additional impacts on the residents of Stockton and surrounding communities. This massive project's air quality impacts on communities in the construction areas are extremely concerning to the County [San Joaquin County]. The DEIR acknowledges that the project's air quality impacts	Chapter 23, Air Quality and Greenhouse Gases, discloses significant and unavoidable air quality impacts from construction of the project alternatives and the analysis in Chapter 29, Environmental Justice, concludes these air quality impacts would represent a disproportionately adverse effect on environmental justice. In addition to the mitigation measures identified in Chapter 23 to reduce air quality impacts, environmental commitments and best management practices would also be implemented to reduce impacts. Environmental commitments are typically engineering-related and are intended to avoid, reduce, or minimize environmental or community impacts. Best management practices are typically generalized measures not specific to the project location and are well-established practices or requirements that are incorporated into the project construction process. For each project alternative, DWR has committed that the environmental commitments and best management practices will be implemented as part of the project if the project is approved. Environmental commitments and best management practices of the proposed project are provided in detail in

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	would also create environmental justice effects. (DEIR, p. 29-40.) The DEIR states, "The impact of exposing sensitive receptors to air quality emissions increases above thresholds is considered significant. Although mitigation measures are available to address these temporary impacts, the air quality effects would occur in areas with meaningfully greater minority and low-income populations and therefore represent a disproportionately adverse effect on environmental justice." (DEIR, p. 29-49.) Even after making this determination, the DEIR fails to provide any additional protections to these communities. The County requests that DWR provide mitigation to reduce impacts on environmental justice communities.	Appendix 3B, Environmental Commitments and Best Management Practices.
525-38	C. The DEIR Piecemealed the Greenhouse Gas Emissions Analysis The DEIR fails as an informational document by piecemealing the analysis of total greenhouse gas ("GHG") emissions from the entire project. CEQA's conception of the term "project" remains broad to maximize the protection of the environment. (Friends of the Sierra Railroad v. Tuolumne Park & Recreation Dist. (2007) 147 Cal.App.4th 643, 653; San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus (1994) 27 Cal.App.4th 713, 730.) "This big picture approach to the definition of a project (i.e., including "the whole of an action") prevents a proponent or a public agency from avoiding CEQA requirements by dividing a project into smaller components which, when considered separately, may not have a significant environmental effect." (Nelson v. County of Kern (2010) I 90 Cal.App.4th 252, 270-271.) Here, the DEIR acknowledges that the project's construction, displaced purchases of Central Valley Project ("CVP") electricity, operations, maintenance, and	The analysis approach and thresholds used to analyze GHG emissions in Chapter 23, Air Quality and Greenhouse Gases, are consistent with CEQA Guidelines and case law. The EIR fully discloses and evaluates all sources of GHG emissions that would be generated by construction and operation of the project, including emissions from displaced purchases of CVP power. The description of the project (see Chapter 3, Description of the Proposed Project and Alternatives) has been prepared with a sufficient degree of detail to enable reasoned and informed environmental analysis, consistent with CEQA Guidelines Sections 15151 and 15124. Refer to Common Response 3, Alternatives Development and Description, for additional discussion on the approach to describing the project. As explained in Chapter 23, all project GHG emissions sources are evaluated against the threshold of carbon neutrality by 2045 (or earlier). The specific mechanism by which emission sources are evaluated against the carbon neutrality threshold differs, consistent with the unique regulatory context for the various project emission sources. Specifically, GHG emissions from project O&M and SWP pumping activities are

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	SWP pumping would all create GHG emissions. (DEIR, pp. 23-160 to 172.) However, the DEIR piecemeals the analysis between construction and operation and maintenance ("O&M"). (DEIR, pp. 23-168 to 169.)	evaluated for consistency with DWR's Update 2020, which establishes DWR's programmatic framework for achieving carbon neutrality. Tiering project-level emissions analysis from a qualified GHG reduction plan is specifically recognized in CEQA Guidelines Section 15183.5, as noted in Chapter 23, section titled Impacts on Global Climate Change. Construction of the project alternatives and the CVP are not covered by DWR's Update 2020. GHG emissions from project construction and displaced purchases of CVP electricity are therefore evaluated against a numeric net zero threshold. The Update 2020 consistency analysis and numeric assessment of construction and CVP emissions is wholly presented under Impact AQ-9, where the impact conclusion and determination of significance considers emissions from all project emission sources. It is worth noting that annual emissions from construction and displaced purchases of CVP electricity between the start of construction to 2045 are presented together in Impact AQ-9, section titled: Construction and Displaced Purchases of CVP Electricity. The combined emissions are compared to the net zero threshold, as discussed above. While emissions from SWP pumping and O&M are quantified and disclosed, they are not numerically used to evaluate the significance of these activities. This is consistent with CEQA Guidelines Section 15064.4(a), which clarifies that lead agencies have discretion to quantify GHG emissions from a project and/or rely on a qualitative analysis. DWR elected to assess SWP pumping and O&M emissions based on consistency with Update 2020, which is effectively a qualitative analysis. Thus, it would be inappropriate to combine emissions from SWP pumping and O&M with those quantified for construction and displaced purchases of CVP electricity, which are assessed relative to a numeric threshold. DWR also asserts that because emissions from SWP pumping and O&M tier from Update 2020, there is no obligation to quantify those emissions in the EIR (Mission Bay Alliance v. Office of Community Investment and Infrastructure [2016] 6 Cal.App.5th 160). Nonetheless, as stated above, DWR elected to quantify SWP pumping and

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		O&M emissions for informational purposes and to support full disclosure of project-generated GHG emissions from all sources (see table titled GHG Emissions from O&M, Increased SWP Pumping, and Displaced Purchases of CVP Electricity under 2020 Conditions). Consistent with the referenced case law, the description of the project presented in Chapter 3, Alternatives, addresses all reasonably foreseeable direct and indirect elements related to DWR's approval of the project, as noted above and discussed in Common Response 3.
525-39	The DEIR concludes that the project's construction GHG emissions would be less than significant under CEQA because the "Implementation of Mitigation Measure AQ-9 would mitigate emissions from construction and displaced purchases of CVP electricity to net zero through the development and implementation of a GHG mitigation program. This measure ensures net additional emissions from construction, and displaced purchases of CVP electricity would not result in a significant GHG impact." (DEIR, p. 23-172.) The DEIR then concludes that the operations and maintenance of the project "would not impede DWR's ability to achieve carbon neutrality by mid-century. Accordingly, through a combination of project-specific mitigation and tiering from DWR's Update 2020 (2020 Update), GHG impacts from these sources would be less than significant." (Ibid.) However, the DEIR fails to consider the totality of the project's GHG emissions.	The comment paraphrases and quotes content from Chapter 23, Air Quality and Greenhouse Gases, of the EIR. The paraphrased information is not a comment on the contents of the EIR. The assertion that the EIR fails to fully consider project emissions is not consistent with the information presented in Chapter 23. As discussed in response to comment 525-38, Impact AQ-9 fully and comprehensively analyzes GHG emissions that would be generated by construction and operation of the project. See also responses to comments 525-40 and 525-41 regarding the analysis of construction and operational GHG emissions.
525-40	The project's construction emissions would be nearly 500,000 metric tons of CO2e. (DEIR, p. 23-171.) The project's emissions from O&M, SWP pumping, and displaced purchases of CVP electricity would be more than 250,000 metric tons of CO2e annually. (DEIR, p. 23-162; DEIR, p. 23F-8 [the 2040 conditions estimate the annual emissions at approximately 58,000 mt/CO2e].) Therefore, the 14 years of construction would	Part of the comment paraphrases and quotes content from Chapter 23, Air Quality and Greenhouse Gases, of the EIR. The paraphrased information is not a comment on the contents of the EIR. The assertion that operation of the project over 50 years would generate half a million metric tons of CO2e is not consistent with the information presented in Chapter 23 of the EIR. Table titled GHG Emissions from O&M

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	produce half a million metric tons of CO2e, and assuming the project is operational for 50 years, it would produce an additional 12.5 million mt/CO2e (or based on 2040 levels 2.9M mt/CO2e). Instead of adding construction and operation emissions together, the DEIR separates them, ostensibly to avoid a significance determination.	under 2040 Conditions referenced by the commenter presents a snapshot of operational emissions in 2040. As explained in Chapter 23, Impact AQ-9, the carbon intensity of electricity generation will decline annually because of SBs 100 and 1020. Net additional emissions from displaced purchases of CVP electricity would reach near-zero in 2045 because of SB 100, which requires zero-carbon resources comprise 100% of electric retail sales to end-use customers by this date. Net additional emissions from SWP pumping would reach net-zero in 2035 because of SB 1020, which requires state agencies to rely on 100% renewable energy and zero-carbon resources to serve their own facilities by this date. Thus, multiplying the 2040 emissions estimate presented in Table title: GHG Emissions from O&M under 2040 Conditions by 50 years, as done by the comment, fails to consider relevant regulations and mischaracterizes future project emissions. The assertion that the EIR separates the analysis of construction and O&M GHG emissions to avoid a significance determination is not consistent with the information presented in Chapter 23. As discussed in response to comment 525-39, Impact AQ-9 comprehensively analyzes construction and O&M against the threshold of carbon neutrality by 2045 (or earlier). While O&M and SWP pumping are determined to be consistent with DWR's Update 2020, Impact AQ-9 is determined to be significant under CEQA for all project alternatives because emissions from construction and displaced purchases of CVP electricity would exceed the net zero analysis threshold before mitigation. Accordingly, the EIR does not avoid a significance determination or mischaracterize the need or magnitude of required mitigation. Rather, by tailoring the threshold approach to individual emission sources, the EIR fully considers all the facts and circumstances of the layered GHG analytical and regulatory context.

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525-41	The DEIR's piecemealing of construction and operational emissions analysis thwarts the public's ability to understand the significance of the project's GHG emissions. Additionally, the use of DWR's Climate Action Plan ("CAP") for one aspect of the project, but not another is an error as well.	The comment's assertion that separately presenting construction and operational emissions stifles public review is inconsistent with air district guidance and standard practice. The importance of selecting CEQA GHG thresholds based on the unique considerations of a project (e.g., type, location, sources) is recognized in CEQA case law (see, e.g., Ctr. for Biological Diversity v. Dep't of Fish & Wildlife [2016] 62 Cal.4th 204, 228) and guidance published by the Association of Environmental Professionals (2016:32). Most air districts that have adopted numeric GHG thresholds likewise identify separate thresholds for construction and operation (Association of Environmental Professionals 2016:25). For example, SMAQMD's (2021:6-11) recommended numeric thresholds are 1,100 MT CO2e for construction of all project types and 10,000 metric tons of CO2e per year for stationary operational emissions. The comment assertion that the EIR is in error by tiering a portion of project GHG emissions from DWR's Update 2020 is not supported by CEQA Guidelines, case law, or agency guidance. The CEQA Guidelines offer two paths to evaluating GHG emissions impacts in CEQA documents: (1) Projects can tier off a plan or similar document for the reduction of GHG emissions (as defined in CEQA Guidelines § 15183.5(b)), and 2) projects can evaluate and determine significance by calculating GHG emissions and assessing their significance using a performance standard (CEQA Guidelines § 15064.4). The California Air Resources Board has endorsed a plan-consistency approach, such as used in the EIR. The threshold pathways defined in the CEQA Guidelines are not mutually exclusive. Rather, lead agencies have discretion to define specific threshold concepts for the analysis of GHG impacts so long as those thresholds are based "on scientific and factual data" and the analysis provides a reasoned explanation for how the thresholds relate to the definition of a significant impact. As explained in Chapter 23, Air Quality and Greenhouse Gases, construction of the project alternatives and the CVP are not covered by

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		DWR's Update 2020. Thus, contrary to the comment assertion, it would be erroneous and inappropriate to extend tiering from DWR's Update 2020 to the entirety of project GHG emissions. See also responses to comments 525-38 through 525-40 for additional discussion on the GHG emissions analysis and thresholds.
525-42	D. The DEIR's Cumulative GHG Analysis Is Inconsistent with DWR's Climate Action Plan The DEIR states that impacts related to GHG emissions are evaluated based on consistency with DWR's Climate Action Plan Phase 1: Greenhouse Gas Emissions Reduction Plan, Update 2020. (DEIR, p. 23-47.) The DEIR finds that "through a combination of project-specific mitigation and tiering from DWR's Update 2020, none of the project alternatives would result in a cumulatively significant GHG impact, nor would any alternative contribute to a cumulatively considerable impact on global climate change." (DEIR, p. 23 -203.) However, as noted above, the O&M emissions were analyzed under the 2020 Update, but the construction emissions were not. (DEIR, p. 23-172.) The bifurcation of emissions based on source is inconsistent with the 2020 Update, which results in an informationally deficient analysis of cumulative GHG impacts. The CAP provides: To show that the current or future project is consistent with this Update 2020 and that the cumulative impact analysis of DWR GHG emissions conducted for this Update 2020 analyzes and addresses the emissions for the proposed project, current and future projects relying on this Update 2020 must complete the following steps: 1. Identify, quantify, and analyze the GHG emissions from the	The comment summarizes the steps required for demonstrating project consistency with DWR's 2020 Update. These are reproduced in Chapter 23, Air Quality and Greenhouse Gases, in the section titled Impacts on Global Climate Change. While the comment correctly identifies the steps for evaluating project consistency, it incorrectly concludes that projects exceeding the Extraordinary Construction Project threshold are precluded from tiering from the 2020 Update. The 2020 Update states "future projects exceeding the Extraordinary Construction Project threshold for their construction-related emissions could still rely on the analysis in Update 2020 to streamline later project-specific cumulative impacts analyses for such projects' operation and maintenance emissions under CEQA, provided that these projects meet all other consistency requirements of Update 2020" (California Department of Water Resources 2020:25-26). Consistent with the 2020 Update, the EIR analyzes construction emissions against a net zero threshold. A GHG Emission Reduction Plan Consistency Determination Form from Update 2020 was completed to confirm operational activities and emissions meet the consistency requirements of the 2020 Update. Supporting documentation and evidence that operation of the project is consistent with the 2020 Update and would not result in cumulatively considerable GHG emissions is provided in Chapter 23, Air Quality and Greenhouse Gases, and Appendix 23E, Assessment Form for Consistency with GHG Emissions Reduction Plan. Accordingly, the EIR appropriately tiers from the 2020 Update and evaluates construction GHG emissions consistent with DWR guidance. See also responses to comments 525-38 through 525-40 for additional discussion on the GHG emissions analysis and thresholds. See response to

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	proposed project and alternatives using a method consistent with that described in DWR internal guidance, "Guidance for Quantifying Greenhouse Gas Emissions and Determining the Significance of their Contribution to Global Climate Change for CEQA Purposes," as such guidance document may be revised. 2. Determine that construction emissions levels do not exceed the Extraordinary Construction Project threshold of either 25,000 mtCO2e for the entire construction phase of the project or 12,500 mtCO2e in any single year of construction. 3. Incorporate into the design or implementation plan for the project all project-level GHG emissions reduction measures listed in Chapter VI or explain why measures that have not been incorporated do not apply to the project. 4. Determine that the project does not conflict with DWR's ability to implement any of the specific project GHG emissions reduction measures listed in Chapter VI. 5. If implementation of the proposed project would result in additional energy demands on the SWP system of 15 GWh/year or greater, the project must obtain a written confirmation from the DWR SWP Power and Risk Office stating that the Renewable Power Procurement Plan will be updated to accommodate the additional load resulting from the proposed project at such time as the proposed project is ultimately implemented. (California Department of Water Resources, 2020, Climate Action Plan Phase 1: Greenhouse Gas Emissions Reduction Plan - Update 2020 [Update 2020], pp. 64-65.) [Footnote 3: DWR's	comment 525-41 for additional discussion on the methods used to analyze construction and operational emissions.

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	Climate Action Plan can be accessed at https://water.ca.gov/-/media/DWR- Website/Web-Pages/Programs/ All-Programs/Climate-Change-Program/Climate-Action-Plan/Files/CAP-I-GGERP-Update-2020.pdf#page=9 l &zoom=l 00.93,96] While the DEIR completed the above steps, it ignored the determination of the second step. Here, the project would exceed the Extraordinary Construction Project threshold of either 25,000 mtCO2e for the entire construction phase of the project or 12,500 mtCO2e in any single year of construction. Therefore, the DEIR' s determination that GHG emissions would not have a cumulatively significant impact, in part due to the ability to tier from the 2020 Update is erroneous. The CAP states that for Extraordinary Construction Projects, "DWR would have to analyze the cumulative GHG emissions on a project-specific basis for CEQA purposes." (Update 2020, p. 24.) Therefore, the DEIR was precluded from utilizing the CAP for its analysis of cumulative GHG impacts.	
525-43	Additionally, DWR wrongly answered "NO" to the CAP's assessment form for consistency with the GHG Emissions Reduction Plan question: "Is there substantial evidence that the effects of the proposed project may be cumulatively considerable notwithstanding the proposed project's compliance with the requirements of the DWR GHG Reduction Plan?" (DEIR, p. 23E-3.) The CAP suggests that construction emissions of 25,000 metric tons of CO2e over the course of a project could be significant. (Update 2020, pp. 24-25.) Here, the construction emissions are 495,442 mt/CO2e and the O&M would be more than 250,000 mt/CO2e per year. (DEIR, p. 23-161 to 162.) The DEIR did not analyze whether this amount of GHG emissions "notwithstanding" the proposed GHG	The comment is incorrect in its assertion that there are errors in the GHG Emission Reduction Plan Consistency Determination Form presented in Appendix 23E, Assessment Form for Consistency with GHG Emissions Reduction Plans, of the EIR. As discussed in response to comment 525-42, the EIR does not rely on the 2020 Update to analyze construction emissions. Only operational emissions tier from the 2020 Update, and as such, the responses in the consistency form are specific to project operational emissions and impacts. Operation of the project would not impede DWR's ability to achieve the GHG emissions reduction goals set forth in Update 2020 (see Impact AQ-9 in Chapter 23, Air Quality and Greenhouse Gases). Accordingly, there is no evidence that effects of project operation would be cumulatively considerable, and a "no" response is accurately recorded in the form.

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	Reduction Plan, would result in a cumulatively considerable impact. (DEIR, p. 23-4.) Instead, it made the determination based on the mitigation and utilization of the CAP, which is erroneous because it should have answered "YES" to the consistency question. An answer of "YES" would not allow DWR to tier from the CAP.	Construction emissions are analyzed and compared to a net zero threshold, as explained in Chapter 23 in the section titled Impacts on Global Climate Change; please see responses to comments 525-38 through 525-42 for additional discussion.
525-44	The DEIR fails to properly analyze the cumulative GHG emissions by bifurcating construction and O&M and relying on tiering from the CAP, which was erroneous due to an inaccurate representation of facts. As a result of these deficiencies, the DEIR underreports its project greenhouse fails to comply with CEQA's minimum requirements.	Please see responses to comments 525-38 through 525-41 regarding the presentation and analysis of construction and O&M emissions. Please see responses to comments 525-42 and 525-43 and 525-166 regarding tiering from DWR's CAP. The information contained in the individual responses does not support the assertion by the comment that the EIR underreports GHG emissions or is otherwise inconsistent with CEQA requirements for the analysis and disclosure of GHG impacts.
525-45	VII. Conclusion As explained in the County's comments, and other Delta agency and group comments, the DEIR fails to provide meaningful information, or present information in a manner that properly informs the public of the Delta Conveyance Project's significant impacts. Despite the astounding length of the document, the DEIR, in many regards, is "fundamentally and basically inadequate and conclusory in nature that public comment" is essentially meaningless. (Laurel Heights Improvement Ass 'n v. Regents of Univ. of Cal. (1993) 6 Cal.4th 1112, 1131.) The DEIR's failure to provide an adequate analysis of impacts and to provide substantial evidence supporting its findings deprives the public and decision makers of understanding the environmental consequences of this massive infrastructure project. (CEQA Guidelines, §15151.) To correct these deficiencies, the DEIR must be significantly improved in both its information and analyses, and recirculated for public review.	This information expresses opinions of the commenter based on comments provided in an attachment to letter 525. Individual comments from the attachment are addressed in these responses to the commenter's letter and in Common Response 15, Air Quality and Greenhouse Gases. The analysis contained in Chapter 23, Air Quality and Greenhouse Gases, and supporting appendices meets the CEQA requirement to make a good-faith effort at full disclosure of potential air quality and GHG impacts of the project. Please also refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the length and complexity of the EIR, the approach to disclosing impacts in the EIR, and for comments that request document recirculation.

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525-46	Exhibits Exhibit 1: Dr. Jeff Michael Report [ATT 1] Exhibit 2: Gilbert Cosio Report [ATT 2] Exhibit 3: San Joaquin Department of Public Works Report [ATT 3] Exhibit 4: Dr. Petra Pless Report [ATT 4]	The commenter provided this list of exhibits for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter. DWR has reviewed all comments and will consider all comments in its decision-making process.
525-47	[ATT 1] My name is Dr. Jeffrey Michael, and I am an economist who is the Director of Public Policy Programs and Professor at the University of the Pacific McGeorge School of Law. I have extensive experience in California water issues focused on the Delta. This includes serving as the principal investigator on the Delta Protection Commission's Economic Sustainability Plan, analysis of the impacts of water supply changes on the Central Valley economy, and analysis of the benefits and costs of the California WaterFix. A summary of my qualifications is in the attached curriculum vitae. (Exhibit A. [ATT 1])	This information describes the background of the individual commenter. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.
525-48	[ATT 1] In summary, I find there to be important omissions that result in a project description that is unstable and conclusions that are unsupported. The most important of these omissions is a complete lack of any information supporting the economic and financial feasibility of the proposed project. The history of Delta conveyance proposals is replete with financial challenges that have been a primary driver of changes and failures of previous proposals. The EIR does not even acknowledge finance as one of fifteen areas of known controversy, nor does it acknowledge how economics drives the project description and operations, and ultimately the impact analysis that follows. Despite the omission of direct cost and financial analysis, the information in the EIR suggest this latest Delta Conveyance Project (DCP) will also face financial woes that undermine the	This comment does not raise a significant environmental issue relating to the proposed project or address the adequacy, accuracy, or completeness of the Draft EIR. CEQA does not require the project description to include economic or financial feasibility analysis. Please refer to Common Response 3, Alternatives Development and Description, regarding the approach to describing the project alternatives and the adequate level of detail contained in the project description to meet CEQA requirements. Please also see Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the scope of analysis, stability of the project description, and appropriate level of detail throughout the EIR impact analysis that meets the requirements of CEQA. Common Response 1 also discusses the basis of the project objectives and seismic risk associated with levees. Please see Common Response 7, Implementation Considerations, regarding project costs, project funding, and financial feasibility of the proposed project. As noted in Common

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	credibility of the project description and resulting analysis. Other critical omissions include a lack of references to prior analysis of Delta levee investments as a superior approach to reducing seismic risk, and an omission of references to any analysis of salinity impacts on Delta agriculture from the past decade.	Response 7, the type of direct cost and financial analysis described in the comment is not a CEQA requirement. Please also see Common Response 3 regarding commenter-suggested alternatives including levee improvements and the development of the reasonable range of feasible alternatives evaluated in the EIR. Please also see Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, regarding DWR's existing and continued efforts in the Delta related to levee management. Chapter 15, Agricultural Resources, evaluates salinity on agricultural crops (Impact AG-3), which was determined to be less than significant. Please also refer to Common Response 1 regarding the CEQA baseline for comparing potential project impacts against existing conditions.
525-49	[ATT 1] Omissions and truncated analysis are also extensive in the alternative screening process and analysis of project objectives. For example, there is little to no analysis of the impact of the project under scenarios underlying project objectives such as seismic and climate resiliency or regulatory uncertainty. For example, the EIR never describes how the DCP would be operated in a seismic-induced flood event that contaminates water downstream of the intakes, even though it describes this scenario as likely and a primary project purpose. Alternatives are dismissed with little analysis, resulting in a very narrow range of alternatives that vary only in the size and route of tunnel, not in the fundamental approach. Further explanation of these and other issues are described in the detailed comments that follow.	As described in Chapter 4, Framework for the Environmental Analysis, in the section titled Consideration of Seismic Risks and Climate Change on Project Alternatives, the EIR contains estimates of how well the proposed project and project alternatives could perform under certain climate change and sea level rise scenarios, and the EPRs provide technical background information about geologic conditions based on available data, seismic hazards, and potential flood risks, including sea level rise due to climate change, to which conveyance facilities may be subjected. In addition, the EIR contains information regarding the other topics cited in the comment. For example, the EIR Appendix 4C, Alternate Regulatory Scenario Sensitivity Analysis, contains information regarding potential alternate regulatory scenarios and how the project could operate. The EIR also contains information regarding climate resiliency and project operations under different climate change scenarios, including Chapter 30, Climate Change; Appendix 30A, CalSim 3 Results Sensitivity to 2040 Climate Change and Sea Level Projections; and Appendix 4A, Consideration of 2070 Conditions. As described in these appendices and in Common Response 6, Climate Resilience and Adaptation, the project would be able to operate under climate change scenarios as intended.

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		Appendix 5A, Modeling Technical Appendix, Attachment 5A-F, Sea Level Rise and Delta Water Quality Modeling, discusses potential increases in salinity. The information in this appendix is informative regarding a scenario in which salt water intrusion may be a result of a seismic event (as opposed to sea level rise), and the appendix describes that the project would continue to operate as DWR intended. Please see Common Response 3, Alternatives Development and Description, regarding the development of the reasonable range of potentially feasible alternatives evaluated in the EIR. Appendix 3A, Identification of Water Conveyance Alternatives, in the EIR provides a discussion of the extensive screening process, which included criteria related to climate resiliency and seismic resiliency and the application of the project objectives to alternatives considered but eliminated. As described in Common Response 3 and Appendix 3A, DWR met the CEQA requirements for developing the reasonable range of potentially feasible alternatives evaluated in the EIR that meet the majority of the basic project objectives.
525-50	[ATT 1] These comments on the DEIR are organized in two parts. In the first section, I discuss fundamental problems with the first 4 chapters of the EIR that frame the EIR analysis. These comments cover the implications of the omitted economic and financial analysis, incomplete and unstable project description, and flawed screening of alternatives. The second section comments on the analysis of impact categories with a focus on how the resource impact analysis chapters (agriculture, transportation, etc.) connect to socioeconomic impacts.	The EIR contains a complete and stable project description and performed an appropriate alternatives screening analysis that meets the requirements of CEQA by applying appropriate and applicable criteria using the project purpose and objectives, as described in Common Response 3, Alternatives Development and Description. The EIR considers socioeconomic effects, although beyond the scope of CEQA, in Chapter 17, Socioeconomics. The approach and contents in Chapter 17 consider issues such as agriculture and recreation. Please see responses to letter 525 as contained herein (e.g., response to comment 525-51) for detailed responses to the general issues identified in this comment.
525-51	[ATT 1] I. FUNDAMENTAL PROBLEMS WITH THE EIR PROJECT DESCRIPTION, SELECTION AND ANALYSIS	The EIR includes plausible operations of the north Delta intakes and contains a screening process to develop a reasonable range of feasible alternatives that is consistent with, and meets, CEQA requirements for developing alternatives. DWR conducted extensive analysis of alternative

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	The Delta Conveyance Project (DCP) Environmental Impact Report has substantial deficiencies in its fundamental approach to defining the project objectives and screening alternatives. These basic problems in the first three chapters carry through the entire report and make it difficult to address the more detailed subject-based analysis in subsequent chapters. Part I of these comments discuss three interrelated fundamental problems: 1) the omission of key economic and financial data and analysis, 2) assumed project operations with implausibly low use of the north Delta intakes, and 3) an inaccurate and flawed screening process for alternatives.	operational scenarios for the BDCP/California WaterFix efforts. The screening process was used to develop the new Delta Conveyance Project operational criteria which are focused on meeting the stated purpose and project objectives presented in Chapter 2, Purpose and Project Objectives. In addition, Appendix 4C, Alternate Regulatory Scenario Sensitivity Analysis, provides the assumptions for a modified regulatory scenario sensitivity analysis assuming the Delta Conveyance Project operational criteria are implemented as described in Chapter 3, Description of the Proposed Project and Alternatives. This sensitivity analysis is provided for informational purposes only to determine the potential for changes in impacts for the described scenario. The results of the analysis indicated that the project compared to a modified regulatory baseline would not result in increased severity of effects compared to those described in the main body of the EIR. Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the scope of the project purpose and objectives as well as Common Response 3, Alternatives Development and Description, regarding the development of the reasonable range of feasible alternatives evaluated in the EIR that meet the basic project objectives, a description of the operations of the project, and a description of the approach to the project description contained in Chapter 3. As described in Common Response 3, multiple alternatives were initially developed and screened to meet the basic project objectives. In accordance with State CEQA Guidelines not every conceivable alternative was considered, but the EIR considers a reasonable range. The discussion of project objectives in the EIR is consistent with State CEQA Guidelines and are consistent with the underlying purpose of the project which is to develop new diversion and conveyance facilities in the Delta to restore and protect the reliability of SWP water deliveries and, potentially, CVP water deliveries south of the Delta, consistent with the State's Water Resilience Portfolio in a cost-effective manner.

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		As noted in Common Response 3, Appendix 3A, Identification of Water Conveyance Alternatives contains the information and explanation of how the discussion of alternatives was developed for consideration in the EIR, background of the Delta Conveyance project that discusses previously proposed projects, iterations of those projects, diversion operations, means of conveyance, and how those processes have been used to inform the development of the current project. As further noted in Common Response 3, the north Delta diversions operations and operational criteria are clearly described in Chapter 3, Description of Proposed Project and Alternatives, in the section titled Intake Operations and Maintenance and clarified in Common Response 3. Throughout the EIR, CEQA impact analyses and other non-CEQA related analyses show that the project can clearly be operated by DWR to divert water when hydrologic conditions and operational criteria are met. For example, the EIR contains multiple appendices documenting and describing potentially different conditions under which the project may operate, such as Appendix 4A, Consideration of 2070 Conditions; and Appendix 4C, Alternate Regulatory Scenario Sensitivity Analysis. As described in Common Response 3, the operational criteria described in Chapter 3 were developed with input and coordination with multiple regulatory agencies, including the California Department of Fish and Wildlife and the State Water Resources Control Board. Please also refer to Chapter 1, Introduction, regarding past coordination efforts as well as for lists of agencies with which continued coordination would be ongoing. Please see response to comment 525-53 regarding cost as it relates to the project purpose and objectives. Please also see Chapter 17, Socioeconomics, regarding an analysis of socioeconomic effects. Common Response 7, Implementation Considerations, describes project costs and

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		funding sources, economic and financial feasibility, and the socioeconomic analysis approach used in the EIR.
525-52	[ATT 1] 1.1 Omission of Cost Information and Economic Analysis Harms Credibility and Stability of Project Description and Analysis Despite prominently including cost-effectiveness in every statement of project objectives, [Footnote 1: For example, see the first sentence of Chapters 1 and 2 of the draft EIR.] the importance of economic analysis in its own planning guidelines, [Footnote 2: Department of Water Resources Economic Analysis Guidebook. Available at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/CDWA%20et%20al/SDWA_146.pdf] and well-known financial issues with previous Delta conveyance proposals, [Footnote 3: Boxall, Bettina. Water District Vote Deals Major Blow to California's Delta Tunnel Project, Los Angeles Times (Sept. 19, 2017). (Attached as Exhibit B [see ATT1 ATT 2].)] the Department of Water Resources (DWR) has provided no cost estimate, no benefit-cost analysis, no financial feasibility analysis, and no evidence of the cost-effectiveness of the proposed project. Given the history of financial challenges with the prior twin- tunnel proposals, and DWR's prior consistent evaluation of single-tunnel proposals as less cost-effective than two tunnels, this omission results in an unstable project description that lacks credibility.	This comment does not raise a significant environmental issue relating to the proposed project or address the adequacy, accuracy, or completeness of the Draft EIR. Please see response to comment 525-48 regarding the approach to the project description, the scope of analysis contained in the EIR, and the requirements of CEQA related to economic and financial analysis. As noted in that response and Common Response 7, Implementation Considerations, the type of direct cost and financial analysis described in the comment is not a CEQA requirement and an economic cost-benefit analysis is not required as part of the EIR. As described in Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, and Common Response 7, where a statement of overriding considerations is required to be adopted for project approval, CEQA directs consideration of whether specific economic, legal, social, technological, or other benefits including region-wide or statewide environmental benefits outweigh the unavoidable, adverse environmental effects. Furthermore, a cost-benefit analysis is part of DWR's overall planning process and will be completed as part of that process before moving forward with the project. Chapter 17, Socioeconomics, used the Guidebook cited by the comment to frame the topics and analyses contained in that chapter. Cost-effectiveness analysis cited by the comment is a different analysis than what is described in the DWR Economic Analysis Guidebook, as the guidance provided in the DWR Economic Analysis Guidebook pertains to socioeconomic impact analyses specifically.

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525-53	[ATT 1] 1.1.1. Cost-effectiveness is stated as a project objective but is ignored everywhere thereafter including developing, screening, and evaluating alternatives. The statement of project purpose at the beginning of the first and second chapters clearly states that the purpose of the project is to protect and restore SWP water supplies "in a cost-effective way." Despite cost-effectiveness as a clear project objective, the EIR fails to provide a cost estimate for the DCP or any of the project alternatives. Thus, consistency with the project purpose statement would require cost-effectiveness to be included among the evaluation and screening criteria for all the alternatives. Even if it were not already included as a project purpose, the failure to consider costs would still be an error as economic and financial analysis is essential to proper project planning and has significant implications for operations as described in the discussion that follows.	Cost-effectiveness is not a CEQA-related issue (nor a requirement of CEQA), as described further in response to comment 525-52. This comment misstates the text in Chapter 2, Purpose and Project Objectives that states, in part, that DWR's fundamental project purpose is to develop new diversion and conveyance facilities in the Delta in a cost-effective manner. Although cost can sometimes be used as a factor to determine an alternative's potential feasibility, which can be used as a screening criteria, DWR chose not to screen alternatives based on cost because to do so could have unnecessarily excluded consideration of alternatives that meet most of the project objectives and potentially avoid or substantially lessen one or more of the significant environmental impacts of the proposed project. A good number of the potential alternatives considered in the screening analysis described in Appendix 3A, Identification of Water Conveyance Alternatives, that could potentially be less costly than new conveyance facilities were determined not to meet most of the project objectives or potentially avoid or substantially lessen one or more significant impacts of the proposed project. Please see also Common Response 3, Alternatives Development and Description, for information on the approach to alternatives screening for the Draft EIR, which focuses on meeting the basic objectives of the project identified in Chapter 2, Purpose and Project Objectives. Please see also Common Response 7, Implementation Considerations, regarding project costs, project funding, and financial feasibility of the proposed project. The EIR also addresses socioeconomic costs and benefits (refer to Chapter 17, Socioeconomics).
525-54	[ATT 1] 1.1.2. EIR references DWR guidelines on the essential role of benefit-cost analysis to project planning even as it ignores it for planning the DCP. The EIR itself notes that DWR's own planning guidelines	This comment does not raise a significant environmental issue relating to the proposed project or address the adequacy, accuracy, or completeness of the Draft EIR. Please see response to comment 525-52 regarding use of the Guidebook in Chapter 17, Socioeconomics, and cost-benefit analysis and CEQA

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	highlight analysis that has not been conducted for DCP. Specifically, Chapter 17 states that the DWR Economic Analysis Guidebook "provides guidance regarding the economic assessments that should be conducted from project formulation through implementation" (DEIR, page 17-4, lines 19-22).	requirements.
525-55	[ATT 1] 1.1.3. Well-known and highly publicized financial problems of previous conveyance proposals are omitted from the background and known controversies. Chapter 1 completely ignores the financial problems that have plagued every previous proposal for delta conveyance. Cost concerns were prominent in the ballot box defeat of the peripheral canal in 1982, and BDCP and WaterFix were both plagued by incomplete financial plans which was most clearly evidenced by the Central Valley Project (CVP), which was allocated 45% of the cost of WaterFix, backed out of the project and are not participating in the DCP due to costs being too high relative to their expected benefits. DWR's 2018 economic analysis of a single-tunnel approach to the WaterFix acknowledged that the proposal was too costly for some State Water Project (SWP) agencies as well, "Some State Water Contractors have indicated that they do not need the benefit of the California WaterFix and do not wish to pay for it. This position is consistent with the analysis of agricultural benefits presented in this report." [Footnote 4: California Department of Water Resources. 2018. Economic Analysis of Stage I of the California WaterFix; Costs and Benefits to Urban and Agricultural Participants. Prepared by The Brattle Group and David L. Sunding, Ph.D. (Attached as Exhibit C [see ATT 1 ATT 3].)] Furthermore, DWR has already negotiated an Agreement-	This comment references the Bay Delta Conservation Plan/California WaterFix project. Thus, the comment does not directly address the Delta Conveyance Project Draft EIR and DWR is not required to respond to comments on projects that are no longer being pursued. However, DWR has reviewed the comment's content to determine whether the comment may be applicable to the proposed Delta Conveyance Project. The following response is provided for those elements of the comment that are applicable to the Delta Conveyance Project Draft EIR. The results of the 2018 economic study were specific to California WaterFix and should not be applied to the Delta Conveyance Project. DWR and potential project beneficiaries will conduct their own economic analyses before approving and committing funding to the project. While not all SWP users have expressed interest in participating in the project, many SWP users continue to see the need for (see Chapter 2, Purpose and Project Objectives) the Delta Conveyance Project and the benefits that it would provide. Please see Common Response 6, Climate Resilience and Adaptation, regarding the project's anticipated water supply reliability benefits.

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	In-Principal (AIP) regarding cost- shares to its contractors with explicit provisions for opting-out of the DCP and multiple south-of-Delta contractors have already stated that they intend to opt-out and forgo the benefits of the DCP due to its cost. [Footnote 5: Over 100 documents describing negotiation over the AIP are at the following link: Negotiation Sessions | Powered by Box. In addition to the final AIP, which shows contractors who have already indicated their preference to opt-out, there are documents in which DWR officials express surprise at the number of agencies that are not interested in paying for the DCF, which drove their decision to switch from an opt-in to an opt-out model.]	
525-56	[ATT 1] Despite the centrality of economic considerations in earlier planning, the EIR mostly ignores it. The only time finance is mentioned, it is misrepresented. At the end of the WaterFix discussion (DEIR, page 1-27), the DEIR states "By 2018, various SWP contractor agencies had approved the funding needed for implementation." This is a highly misleading statement that leaves out the fact that water agencies representing at least half of Delta exports (all of the CVP and several SWP contractors) either did not approve or rejected funding WaterFix. In fact, DWR briefly changed WaterFix from a two-tunnel plan to a staged one-tunnel plan in 2018 specifically due to many agencies not approving funding because of cost concerns. [Footnote 6: Boxall, Bettina. "California moves ahead with one delta tunnel, scaling back ambitious water delivery project." Los Angeles Times, February 7, 2018. (Attached as Exhibit D. [see ATT 1 ATT 4])] However, the staged WaterFix plan was abandoned under urging by Governor Brown amid concerns that it would delay permitting. [Footnote 7: Letter from Governor Brown to Board Members of the Metropolitan	This comment references the Bay Delta Conservation Plan/California WaterFix project. Thus, the comment does not directly address the Delta Conveyance Project Draft EIR and DWR is not required to respond to comments on projects that are no longer being pursued. However, DWR has reviewed the comment's content to determine whether the comment may be applicable to the proposed Delta Conveyance Project. The following response is provided for those elements of the comment that are applicable to the Delta Conveyance Project Draft EIR. Please see response to comment 525-55 regarding DWR and potential project beneficiaries will conduct their own economic analyses before committing funding to the project. Please also see Common Response 7, Implementation Considerations, regarding project costs, project funding, and financial feasibility of the proposed project. As noted in Common Response 7, the type of direct cost and financial analysis described in the comment is not a CEQA requirement.

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	Water District of Southern California dated April 9, 2018. Available at https://www.ca.gov/archive/gov39/wp-content/uploads/2018/04/Governor-Brown-Letter-to-MWD-4.9.18.pdf. (Attached as Exhibit E [see ATT 1 ATT 5].)] The flip-flop on WaterFix sizing due to cost is the perfect illustration of why project cost is among the most important issues for project planning, and must be dealt with in the project planning for DCP, including the EIR development and evaluation of alternatives.	
525-57	[ATT 1] CEQA requires areas of known controversy to be included in the EIR. Clearly, cost and financing are areas of known controversy, and arguably the largest source of project controversy. Yet the DCP EIR invalidly leaves cost off an extensive list of 15 areas of known controversy (DEIR, pages 1-49 to 1-51). For each of the fifteen areas listed, the EIR highlights the sections of the EIR that address the issue. The omission of such a prominent area of known controversy with critical implications for project design and operation is a serious deficiency.	The EIR includes a thorough list of topics identified for the areas of known controversy in Chapter 1, Introduction, in the section titled Public Scoping and Issues of Known Controversy. CEQA does not require the project description to include economic or financial feasibility analysis. Please refer to Common Response 3, Alternatives Development and Description, regarding the approach to describing the project alternatives and the adequate level of detail contained in the project description to meet CEQA requirements. Under CEQA, social or economic effects alone are not treated as impacts on the physical environment (see Common Response 7, Implementation Considerations, regarding consideration of socioeconomic effects and CEQA). Furthermore, in Chapter 1, DWR includes socioeconomics on the list in order to acknowledge public concerns regarding socioeconomic effects within the Delta.
525-58	[ATT 1] 1.1.4. Available evidence suggests that costs for the single-tunnel DCP are similar to the twin-tunnel WaterFix. In 2020, the Delta Conveyance Design and Construction Authority estimated the cost of the eastern and central alignment was $15.9 billion in 2020 dollars. [Footnote 8: See	This comment does not raise a significant environmental issue relating to the proposed project or address the adequacy, accuracy, or completeness of the Draft EIR. As discussed in response to comment 525-55, DWR and potential project beneficiaries will conduct their own economic analyses before committing funding to the project. While not all SWP users have expressed interest in

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	page 62 of page 103 of the agenda packet for the August 20, 2020, meeting of the Board of Directors of the Delta Conveyance Design and Construction Authority. Available at https://www.dcdca.org/wp-content/uploads/2020/09/2020-08-20-DCABoardPkgVF-1.pdf. (Attached as Exhibit F.)(See ATT 1 ATT 6)] In constant dollars, this is only a 10% cost savings compared to the two-tunnel WaterFix which was estimated to cost $16.7 billion in 2017 dollars. As I discuss in Section 2.5 below, the direct employment estimates for the DCP in the Socioeconomics chapter are also within 10% of estimates from the WaterFix EIR, another indicator that DCP costs are not much lower than WaterFix. The 2020 DCP cost estimate of $15.9 billion is likely low for two reasons. First, the Bethany alignment tunnel is about 10% longer than the eastern and central alignments and does not utilize existing SWP facilities to the same extent. Second, construction costs have increased dramatically since 2020, rising much faster than inflation. According to the California Department of General Services Construction Cost Index, [Footnote 9: DGS California Construction Cost Index. Available at https://www.dgs.ca.gov/RESD/Resources/Page-Content/Real-Estate-Services-Division-Resources-List- Folder/DGS-California-Construction-Cost-Index-CCCI] construction cost inflation has averaged 10.7% annually since this estimate was made in 2020, compared to an average 2.5% annual increase in the prior decade. Thus, it seems likely that DCP construction costs are similar to, or possibly greater than, WaterFix.	participating in the project, many SWP users continue to see the need for (see Chapter 2, Purpose and Project Objectives) the Delta Conveyance Project and the benefits that it would provide. Please see Common Response 7, Implementation Considerations, regarding project costs, project funding, and financial feasibility of the proposed project. The results of the 2018 economic study were specific to California WaterFix and should not be applied to the Delta Conveyance Project.
525-59	[ATT 1] 1.1.5. DWR's previous financial analysis of a single-tunnel WaterFix suggests the DCP is not financially feasible or cost-effective.	Please see responses to comments 525-53 and 525-55 regarding the approach to consideration of socioeconomics in the EIR and the economic analyses that are neither required nor typically included in an EIR.

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	On February 12, 2018, DWR released an economic analysis of a single-tunnel staged approach to the WaterFix that evaluated benefits and costs to the agencies that would finance the WaterFix.[Footnote 10: California Department of Water Resources. 2018. Economic Analysis of Stage I of the California WaterFix; Costs and Benefits to Urban and Agricultural Participants. Prepared by The Brattle Group and David L. Sunding, Ph.D. (Attached as Exhibit C.)(see ATT 1 ATT 3)] The single-tunnel facility evaluated in that study was estimated to cost $10.7 billion in 2017 dollars, about 35% less than the two-tunnel WaterFix, and have a water yield averaging an additional 865,000 acre- feet per year compared to no tunnel alternative. A single-tunnel project with these specifications was found by the consultant to have a benefit-cost ratio of 1.03 to SWP agricultural contractors and 1.29 to SWP urban contractors. The EIR shows that the DCP one-tunnel project is less favorable to water exporters than the staged approach considered in the 2018 study. First, as discussed above, the evidence and preliminary cost estimate for DCP is considerably higher than used in the 2018 study, and the cost of the DCP does not appear to be much different than the original twin-tunnel WaterFix. Accounting for the cost increase alone would likely bring the benefit-cost ratio below one, especially considering how interest rates have increased to raise the cost of project financing. Benefits for the DCP are also less. Water yield for the DCP is estimated to be about 600,000 af per year, about 30% lower than estimated for the staged WaterFix. In addition, water quality benefits for water contractors for the DCP would also be lower, since operations would continue to primarily	

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	rely on south Delta diversions with less use of the north Delta intakes in the DCP according to the EIR. DWR's original single-tunnel study found benefits narrowly exceeded costs for water agencies. However, with DCP costs appearing to be 30% higher and DCP benefits at least 30% lower than estimated in the previous study, it seems that the DCP as described in the EIR is unlikely to pass a benefit-cost test for water agencies and be considered financially feasible.	
525-60	[ATT 1] 1.1.6. The financial challenges of DCP are already impacting project design and operations, and the project description in the EIR is unstable without evidence of financial feasibility. As evidenced by the flip-flopping between a staged single-tunnel and full twin-tunnel WaterFix due to financial issues, it is clear that cost and finance will drive project design and operations for any delta conveyance proposal. Finance may have already influenced some changes in this EIR. For example, the priority on south Delta pumping is contrary to over a decade of previous planning for the Delta tunnels and like most large changes to the project that preceded it, finance could be a factor. Maintaining business as usual at the south Delta pumps could be due, at least in part, to the need to prevent harm non-participating water agencies. Without a sound financial feasibility analysis, the DCP project description should be considered unstable and likely to change. Thus, the DCP EIR is premature and incomplete due to the missing economic and financial analysis.	This comment references the Bay Delta Conservation Plan/California WaterFix project. Thus, the comment does not directly address the Delta Conveyance Project Draft EIR and DWR is not required to respond to comments on projects that are no longer being pursued. However, DWR has reviewed the comment's content to determine whether the comment may be applicable to the proposed Delta Conveyance Project. The following response is provided for those elements of the comment that are applicable to the Delta Conveyance Project Draft EIR. Please see responses to comments 525-48 and 525-56 regarding costs and financing.

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525-61	[ATT 1:] 1.2 Project Operations Analyzed in the EIR are Not Credible 1.2.1 The operating criteria described in the project description result in implausibly low utilization of the north Delta intakes. The constraints on north Delta diversions in EIR Chapter 3 section 3.16.1, when combined with the described integration with existing facilities in section 3.16.3, means that the new north Delta diversions would be rarely utilized and that south Delta diversions will have priority. Specifically, on page 3-145 the EIR states that SWP will first use south Delta facilities, and that "Shifting from south Delta intakes to proposed north Delta intakes has trade-offs and is not expected..." As a result, the water supply modeling in the EIR estimates that only 13.5% of total Delta exports will be conveyed through the tunnel. The EIR shows the north Delta intakes will be unused in the majority of calendar months and will also be unused on many days during the winter and spring months when flows are highest. It strains belief to think that the most ambitious and expensive water supply infrastructure project in California history will sit largely unused after it is built. The economic and political pressure to utilize the tunnel will be overwhelming. The environmental impacts of the project presented in the EIR are lower than would be expected under more realistic operating scenarios.	Please refer to response to comment 525-7 regarding operation of the proposed north Delta intakes and the increase in modeled deliveries presented in Chapter 6, Water Supply, in the EIR.
525-62	[ATT 1:] 1.2.2 EIR anticipates scenarios with higher north Delta diversions, even including them as a project objective, but does	The description of project operations and operational criteria presented in Chapter 3, Description of the Proposed Project and Alternatives, is accurate and describes how DWR would operate the project. Please refer to

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	not analyze the environmental effects of higher utilization. The EIR anticipates and seems to advocate for higher utilization of the north Delta intakes throughout. As discussed below, higher utilization of north Delta intakes is the point of the project objective of operational flexibility and screening Criterion 4. In addition, satisfying the seismic resiliency and climate resiliency objectives as described in the alternative screening criteria would also require substantially higher utilization of the north Delta intakes than analyzed in the EIR. It is also anticipated in comments that leave open the possibility of future participation by the CVP which is assumed to only use the existing south Delta intakes in the EIR modeling. (DEIR, page 2-2). Despite this, the EIR only includes a very limited assessment of a scenario with higher north Delta diversions as a chapter appendix (Appendix 4B). This truncated analysis is insufficient to analyze the impacts of all the project operation scenarios that the EIR portrays as likely, especially when it is included as a project objective.	Criterion 4 in Appendix 3A, Identification of Water Conveyance Alternatives, which explains that this criterion screens for alternatives that offer flexibility in how the system can be operated to address existing aquatic species and water quality concerns and to provide operational flexibility should the south Delta export facilities be limited by regulatory or other constraints. Please see Common Response 3, Alternatives Development and Description, regarding the limits of the north Delta intakes and prioritization of the south Delta location over the north Delta intakes. There are specific criteria and circumstances in which the north Delta intakes would be used; and as explained in Common Response 3, DWR would operate the project to those limits and criteria. The north Delta intake priority analysis presented in Appendix 4B, North Delta Diversion Priority Sensitivity Analysis, is for informational and comparative purposes only. The discussion in the appendix includes more shifting than would be reasonably foreseeable, by prioritizing diversions at the proposed north Delta intakes over the existing south Delta intakes during certain times of the year. The analysis was performed to see how sensitive the system is to a specific change, not the specific magnitude. The north Delta diversion priority scenario described in Appendix 4B is not a foreseeable action (CEQA Guidelines, § 15126.6(f)(3) [“An EIR need not consider an alternative… whose implementation is remote and speculative.”].). The comment’s assertion that different operations are "likely" is not consistent with DWR’s project.
525-63	[ATT 1] 1.2.3 Credible description of project operations requires economic and financial feasibility analysis. As discussed above, economic and financial considerations have been driving the assumed operations and design of delta conveyance concepts for decades, and there are significant reasons to doubt the feasibility of the proposed project. The	Please see responses to comments 525-48 and 525-52 regarding the approach to describing the project; the level of detail in the project description as well as the scope of analysis contained in the EIR; and project feasibility.

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	project description, both structural and operations, cannot be considered stable and justified without appropriate economic and financial analysis.	
525-64	[ATT 1:] 1.3 Screening of Alternatives Is Fundamentally Flawed 1.3.1 Criterion 1 – No evidence that DCP can satisfy climate resiliency objective while complying with Delta Water quality objectives. The DEIR claims that the DCP will increase climate resiliency for SWP water supplies, but the only section of the DEIR that analyzes climate change scenarios beyond 2040 (Appendix 4A) finds little to no benefit. Specifically, Appendix 4A states "By 2070, it is expected that there would be fewer opportunities to utilize the north Delta diversions based on changes to hydrologic conditions and increasing operational constraints caused by climate change." (DEIR, page 4A-13) Appendix 4A explains that it will be more challenging to satisfy environmental and water quality standards under future climate change conditions of more winter rain and less snow, combined with increasing sea-level rise. It assumes more frequent relaxation of standards as seen today under drought conditions but does not assume abandonment of environmental and water quality standards. While there will still be higher Delta water exports in this scenario with the DCP than without the project, the benefits of the DCP actually decrease with climate change according to Appendix 4A, and thus it is invalid to suggest that there is any additional water supply reliability benefit beyond that claimed in Criterion 3.	Please see response to comment 525-13 regarding identifying alternatives to be considered for evaluation in the EIR. Regarding the surface water analysis in Appendix 4A, Consideration of 2070 Conditions, addressing potential 2070 conditions for the project compared to No Project 2070 conditions, the quoted section concludes, "However, SWP and CVP diversions are projected to be greater in 2070 with the proposed project than without the north Delta intakes." Therefore, the comment's assertion that this analysis concludes that the proposed project will not improve climate resiliency is not supported by the EIR analysis. Similarly, the comment suggests that Appendix 3A, Identification of Water Conveyance Alternatives, which presents the alternatives screening results, assumes that Delta water quality objectives would be violated. This comment is not supported by the EIR Appendix 3A screening analyses. Criterion 1, for example, focuses on comparing the location of alternative diversion points in the Delta related to meeting climate change objectives. Violating existing or future regulatory requirements is not an assumption in this criterion. Similarly, Criterion 3, Water Supply Resiliency, addresses an alternative's ability to adapt to changing conditions, including the potential for increased regulatory limitations for Delta water exports. This criterion assumes that existing and future Delta regulatory requirements would need to be met. Please refer to the description of first-level screening criteria and the alternatives screening analysis, which explains why alternatives did not meet the screening criteria and were eliminated from further consideration. DWR would be required to comply with all ongoing and future regulatory actions like those currently imposed to protect fish and wildlife, agricultural flows, water quality objectives, and Delta outflows.

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	However, the short, truncated discussion about climate change used to screen out alternatives in Appendix 3A.4.1.1 is different. Instead, it assumes that water quality standards in the south Delta will not be maintained and will be allowed to deteriorate to the point that prevents water diversions. Specifically, it states "Dual conveyance alternatives (i.e., alternatives that added an additional point of diversion to the existing points of diversion for the SWP) were initially rated "yes" on this criterion because they allowed for the SWP to divert water in new locations in addition to the existing SWP southern Delta points of diversion during times of higher salinity conditions that could result from sea level rise or reduced flows." (DEIR page 3A-28) It is well-known that maintaining Delta water quality under conditions of climate change will require higher freshwater outflow and lower exports as modeled in the no project alternative in the EIR for 2040 conditions and Appendix 4A for 2070 conditions. Instead, this alternative analysis states that there would be diversions from the north Delta intakes into the DCP during times of low flow and when salinity standards are being violated. It states the DCP satisfies the screening criteria by asserting that with DCP, DWR is allowed to pump the flows needed to maintain water quality under climate change through the tunnel. This is inconsistent with the DCP project description in the EIR. It is invalid for a project objective to assume violation of water quality standards that exist to protect not only in-Delta municipal and agricultural water users, but also the environment. Thus, the assertion that the DCP satisfies the climate resiliency objective and alternatives do not is invalid.	

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525-65	[ATT 1] 1.3.2 Criterion 2 - Seismic resiliency analysis is inaccurate. The asserts that the DCP would provide seismic resiliency without explaining exactly how it would be utilized after a seismic flood event. The seismic resiliency benefit seems to imply that the DCP could replace SWP south Delta diversions that would be lost in the event of a seismic flood catastrophe that leads to Delta salt-water intrusion. However, operation of DCP intakes would still be limited by various constraints on their operations such as bypass flows, and it is not clear why the DCP intakes would be able to divert at high levels at a time when downstream in-Delta municipal and agricultural water users would be suffering from contaminated water. Thus, it is unclear whether the DCP could provide even partial restoration of SWP water supplies lost in a seismic event even if the DCP facility itself is undamaged. In contrast, alternatives focused on fortifying Delta levees to be seismically resistant would substantially reduce the probability of catastrophic simultaneous failure of dozens of Delta levees from occurring in the first place. Thus, through Delta strategies with robust programs of levee improvements are likely to provide a higher level of seismic resiliency than the DCP's ability to partially restore SWP water exports in such a scenario.	Please refer to response to comment 525-15 regarding details on seismic resiliency analysis.
525-66	[ATT 1] It is also important to note that DWR has a documented history of severely misrepresenting and suppressing information on the potential of seismic levee upgrades as an alternative to its preferred strategy of isolated conveyance. The Delta Risk Management Strategy (DRMS) phase 2 was commissioned to satisfy AB 1200 (Laird) which required a ranking of risk reduction strategies be provided to the legislature by January	DWR's analysis meets the CEQA requirement to make a good-faith effort at full disclosure, and every effort has been made to base the analyses on up-to-date and accurate information. Please refer to response to comment 525-13 regarding the adequacy of the range of alternatives evaluated in the EIR. Please refer to Common Response 3, Alternatives Development and Description, regarding why levee upgrades, through-Delta, and non-

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	1, 2008. In the January 2008 AB 1200 report to the legislature [Footnote 11], seismically improved levees was identified as one of the three most promising strategies to reduce risk in the Delta, but the report said that Isolated Conveyance facility like the DCP was the highest ranking strategy. However, the report did not show any of the quantitative results from the DRMS analysis and instead showed a qualitative ranking that it implied represented the DRMS results. Specifically, after many pages describing the DRMS analysis, the report buries this statement about the rankings in the text, "These rankings were developed by DWR and DFG staff based on DRMS analyses, with adjustments based on the BDCP analyses." Quantitative results from DRMS Phase 2 were not released for 3.5 years, and seismically improved levees was not included in the strategies despite being identified as one of the three most promising strategies in the 2008 report to the legislature. During the fall of 2011, I was working on the Delta Protection Commission's Economic Sustainability Plan, [Footnote 12] and noticed the omission of seismic levee upgrades from the final DRMS Phase 2 report. Thus, I wrote a formal request to DWR for the DRMS phase 2 analysis of seismic levee upgrades that was described in the 2008 report to the legislature. The release shows that in fall 2007, the DRMS phase 2 consultants provided DWR with the results of their analysis that showed that an "Improved Levees Scenario" with 100 miles of seismically improved levees had higher economic benefits and lower costs than a scenario based on an Isolated Conveyance facility like the DCP. [Footnote 13] In summary, in order to promote isolated conveyance in the BDCP, DWR staff misled the legislature and the public by changing the ranking of DRMS Phase 2 analysis in their report to the legislature, and then deleted seismic levee improvements in the final DRMS Phase 2	conveyance alternatives alone would not meet project purpose or most objectives and would not improve Delta SWP operational flexibility. Please also refer to Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, regarding DWR's role and responsibilities related to levees. The proposed Delta Conveyance Project is one part of a diverse portfolio of strategies that would assist in meeting California's water management needs and would not preclude other measures, such as levee repair and upgrade, that may be taken by DWR or other entities.

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	analysis without explanation when it was the best strategy in the initial analysis. In the current DPC EIR, DWR continues this history of invalidly excluding levee upgrades as an alternative to bias analysis in favor of their preferred Delta conveyance strategy. The EIR invalidly rejects through Delta and non-conveyance alternatives on seismic resiliency criteria when these alternatives would likely provide more resilience because of their increased investment in Delta levees. The EIR fails to model how the DCP would operate in a seismic event that interfered with exports from the south Delta, and how those operations would comply with environmental and water quality requirements. The EIR fails to acknowledge that seismic levee upgrade strategies would prevent loss in water supplies from a seismic event and potentially provide more seismic resilience. It should also be noted that alternatives with seismic levee upgrades would also reduce environmental harm, reduce critical infrastructure damage, and save lives in a seismic event, as compared to the DCP. [Footnote 11] Department of Water Resources & Department of Fish and Game. 2008. Risks and Options to Reduce Risks to Fishery and Water Supply Uses of the Sacramento/San Joaquin Delta. Available at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/CDWA%20et%20al/SDWA_143.pdf. (Attached as Exhibit G [ATT 1, ATT 7].) [Footnote 12] The 2012 Delta Protection Commission Economic Sustainability Plan is a peer-reviewed report that recommended seismic-levee upgrades as a better alternative than isolated conveyance tunnels that is ignored by the EIR in its screening and discussion of alternatives.	

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	[Footnote 13] Letter from Jeffrey A. Michael, Ph.D., University of the Pacific, to DWR dated December 15, 2011, and response from DWR providing DRMS Phase 2, August 20, 2007 Draft Report, Section 18: Scenario Evaluation. Available at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/CDWA%20et%20al/SDWA_142.pdf. (Attached as Exhibit H.)	
525-67	[ATT 1] 1.3.3 Criterion 4 – Operational resiliency is vague and speculatively assumes future regulatory environments will favor more north Delta diversions rather than less. The operational resiliency criteria speculates about the future regulatory environment. It anticipates an alternative regulatory future where south Delta pumping is constrained and north Delta diversions are not and are thus more utilized. The analysis of this speculative Criterion 4 scenario ignores the negative impacts to the reliability of SWP deliveries to SWP contractors who opt-out of participating in the DCP due to cost. Thus, Criterion 4 could conflict with Criterion 3. In addition, this Criterion invalidly speculates that future regulations will only become more stringent on south Delta diversions and not north Delta diversions. This one-sided regulatory speculation is blind to the fact that the north Delta intakes would kill threatened and endangered fish species according to the EIR. While the EIR states that fish mortality would not jeopardize the existence of these species, other experts disagree, and there certainly are no guarantees. Thus, it is highly plausible that north Delta diversions could be more constrained by environmental regulations in the future,	Criterion 4 assumes that existing regulatory constraints on south Delta pumping to protect aquatic species and water quality would continue and may become more stringent given anticipated effects of climate change and potential increases in regulatory limits for exports in the south Delta. Accordingly, having an alternate point of diversion that could increase SWP operational flexibility in a way that is sensitive to aquatic species and water quality conditions would allow SWP to improve water supply reliability, especially when Delta conditions constrain pumping in the south Delta. Therefore, the approach and application for Criterion 4 in Appendix 3A, Identification of Water Conveyance Alternatives, is appropriate and reasonable given the stated purpose and project objectives. All of the alternatives considered for additional analysis in the EIR were determined to be potentially feasible. Ultimately, DWR will make a final determination about the feasibility of the proposed project during the project decision-making process once environmental review is completed, considering engineering, environmental, cost, and other considerations. The comment regarding significant impacts on threatened and endangered fish is not supported by the analysis contained in Chapter 12, Fish and Aquatic Resources. This chapter evaluates the in-Delta effects of project operations on multiple fish species using multiple lines of evidence and quantitative and qualitative data. Impacts in Chapter 12 are identified as less than significant or less than significant with mitigation incorporated. Disagreement amongst experts does not make the EIR inadequate (CEQA

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	not less constrained. In fact, those water agencies not participating in the DCP due to cost, including the federal CVP, would have a clear incentive to support a regulatory environment that constrained north Delta diversions more than the south Delta. There is a significant risk of the Delta conveyance becoming a $20 billion stranded asset due to environmental regulation. This risk is well-known and a major reason why dual conveyance was originally proposed by water agencies as part of Habitat Conservation Plan (HCP) with a 50-year operating permit in the Bay Delta Conservation Plan (BDCP), a permit that fish and wildlife agencies were ultimately unwilling to grant.	Guideline 15151). Chapter 1, Introduction, summarizes the main points of disagreement among experts regarding various topics in the document. Additional analysis on specific disagreements among experts raised in individual comments received on the EIR is presented in responses to those comments. As described in the EIR, the project would operate to all regulatory standards and permit requirements, as the existing SWP facilities currently do. Chapter 1 describes why DWR did not pursue BDCP/California Water Fix, which was unrelated to a stranded asset or future potential environmental regulation, as the comment asserts.
525-68	[ATT 1] The EIR does include speculation about a different future regulatory environment in Appendix 4C: Alternate Regulatory Scenario Sensitivity Analysis. Oddly, the one possible regulatory scenario that it does analyze in detail is not the one that is used in the alternative screening analysis. Appendix 4C is based on a 2022 MOU regarding Voluntary Agreements that are being negotiated as a proposal to satisfy the Bay-Delta Water Quality Control Plan. In Figure 4C-19 and 4C-20, the analysis shows that the DCP is utilized less under this regulatory scenario than existing conditions and the incremental water supply benefit of the DCP would be lower under this regulatory scenario. Thus, in the only speculative regulatory scenario modeled in the EIR, the water supply reliability benefits of the DCP (Criterion 3) are lower under the alternative regulatory scenario. There is no evaluation of DCP alternatives under this scenario.	The comment's assertion that analysis in the EIR was based on speculation is incorrect. The EIR impact analysis evaluates conditions, including appropriate regulatory requirements related to water quality and flow in the Delta, at the time of the release of the Notice of Preparation. The EIR evaluates the impacts of the proposed project and alternatives compared to the existing conditions, as directed by CEQA. CEQA does not require an EIR to include an Alternate Regulatory Scenario; the scenario included in Appendix 4C, Alternate Regulatory Scenario Sensitivity Analysis, was included for informational purposes. It was not used to support the CEQA analysis presented in Chapters 7 through 32 because the specific requirements of the Bay-Delta Plan updates are uncertain as the State Water Board moves through the steps of the environmental review and water quality control planning process. DWR presented the Alternate Regulatory Scenario appendix to provide additional information about whether potential future changes to existing regulatory requirements could cause changes to potential environmental effects of the proposed project disclosed in the EIR. The figures referenced in Appendix 4C generally show consistent storage and flow conditions upstream of the proposed north Delta

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		diversions under the alternative regulatory scenario with and without the proposed project with some exceptions as noted in the analysis.
525-69	[ATT 1] In summary, Operational Resiliency is a questionable, screening criteria that speculates about future regulation. It is biased because it speculates about future regulations in a one-sided way designed to screen-out alternatives rather than provide a balanced assessment of a reasonable range of regulatory uncertainty. Alternative regulatory scenarios that are negative for DCP operations are equally if not more likely. Thus, Criterion 4 is a speculative, one-sided and an invalid screening criteria.	The screening criteria are consistent with the legal requirements of CEQA and the project objectives described in the NOP. Criterion 4 implements the project objective to "[p]rovide operational flexibility to improve aquatic conditions in the Delta and better manage risks of further regulatory constraints on SWP operations." This project objective and criterion are intended to ensure that the proposed project and project alternatives provide increased flexibility both to respond to aquatic conditions and to regulatory constraints. The project objective and criterion are not premised on any particular future conditions or constraints coming to fruition. Instead, the objective and criterion are focused on increasing flexibility in how the system can be operated in real time to respond to any potential future changes in aquatic conditions or regulatory constraints. The flexibility to alter operations in this way allows greater certainty that SWP can deliver its obligations reliably. However, alternatives that included new diversion facilities near sensitive resource areas were considered less likely to provide this flexibility because the new diversion facilities also could not be operated reliably in those cases. Similarly, isolated and through-Delta conveyance alternatives, or those that abandon south Delta facilities, as explained in Appendix 3A, Identification of Water Conveyance Alternatives, generally would not provide real-time operational flexibility.
525-70	[ATT 1] 1.3.4. The project purpose implies that cost-effectiveness should be an additional criterion. As mentioned earlier, cost-effectiveness is clearly stated in every expression of the project purpose and thus cost-effectiveness must be included as a screening criteria for alternatives, including the proposed project. Many of the	Chapter 2, Purpose and Project Objectives, states in part that DWR's fundamental project purpose is to develop new diversion and conveyance facilities in the Delta in a cost-effective manner. Appendix 3A, Identification of Water Conveyance Alternatives, presents the two-phase screening of alternatives approach. Delta levee improvements alone were determined to not meet most of the project objectives related to climate, seismic, and water supply resiliency and providing SWP operational flexibility in the Delta. It was screened out in the first-level screening from further

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	alternatives, such as levee investments, have been proposed in large part because they are less costly than the DCP and likely more cost-effective. Thus, omitting cost-effectiveness from the screening criteria in inconsistent with the project purpose and biases the analysis of alternatives.	consideration as an alternative to the proposed project. CEQA offers that potential feasibility should be used in determining alternatives to consider in an EIR. The final feasibility of an alternative is determined in the findings of fact to support the project decision-making process. Please refer to Common Response 3, Alternatives Development and Description, and Appendix 3A, in the section addressing identification of alternatives under CEQA, for more detail on the EIR approach for alternatives selection and the development of the reasonable range of feasible alternatives evaluated in the EIR. Please refer to responses to comments 525-52, 525-71, and 525-80 regarding use of cost-effectiveness as a screening criterion for project alternatives.
525-71	[ATT 1] 1.3.5. The basis of screening out alternatives is flawed and invalidly excludes alternatives with potentially lower environmental impacts. As discussed above, most through Delta alternatives can outperform the DCP on the criteria of cost- effectiveness and seismic resiliency and do so with lower environmental impacts than the DCP. Furthermore, Criterion 1 cannot validly distinguish between alternatives without assuming an unlawful violation of Delta water quality standards. Criterion 3 overstates the benefits of the DCP and invalidly dismisses alternatives that perform better on the seismic resiliency criteria while reducing environmental damage from such an event. Criterion 4 is a vague, one-sided speculative statement about future regulations that conflicts with Criterion 3 and is inconsistent with the EIRs regulatory baseline sensitive analysis (Appendix 4C). Cost-effectiveness is not included as a criterion despite its prominent role in the project purpose statement and DWR's own planning guidelines.	The Department of Water Resources followed CEQA requirements when identifying alternatives to be considered for evaluation in the EIR. As described in response to comment 525-13 and Common Response 3, Alternatives Development and Description, CEQA requires lead agencies to develop project objectives to inform the identification of the project and a reasonable range of potentially feasible alternatives. CEQA requires an EIR to include a reasonable range of alternatives that meet most of the basic project objectives, are potentially feasible, and would avoid or substantially lessen one or more of the significant effects of the proposed project. Common Response 3 provides an explanation of the alternatives screening process and how project objectives are used to identify potential alternatives to the proposed project. All screening criteria were considered in the context of continued SWP and CVP compliance with all applicable regulatory requirements including Delta flow and water quality objectives. Please also refer to Appendix 3A for specific explanations of screening criteria and how they were applied for the alternatives considered. While an economic cost benefit analysis is not a requirement of CEQA, the EIR addresses environmental costs (i.e., impacts) and, generally, the benefits of the project. Cost alone was not an alternatives screening

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		criterion, but general factors that could influence cost were considered along with other factors, as described in Common Response 3. Please also refer to Common Response 7, Implementation Considerations, regarding how financial costs and other factors will be considered in decision making. In addition, because the proposed project and project alternatives result in significant and unavoidable impacts, a statement of overriding considerations is required should DWR decide to approve the proposed project or a project alternative with the exception of the no project alternative. This statement of overriding considerations would include discussion of the balance of applicable economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of the proposed project or project alternative against its unavoidable environmental risks and would be considered by the decisionmaker when determining whether to approve the proposed project or a project alternative.
525-72	[ATT 1] II. COMMENTS ON SPECIFIC CATEGORIES OF IMPACTS In the following sections, I provide comments on several chapters focused on specific categories of project impacts. Specific chapters were selected due to their expected relevance to the DCP's socioeconomic effects on the Delta region. Due to the voluminous size of the EIR and time constraints, some topics with implications to the Delta economy may not be included in these comments.	Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the length and complexity of the EIR. As discussed in Common Response 1, the EIR was written and organized consistent with CEQA and written in plain language with an emphasis on clearly and adequately disclosing the project's potential environmental impacts to assist public, agencies, and decision-maker review of the EIR.
525-73	[ATT 1] 2.1. Agricultural resources: omitted information and inaccurate conclusions on water quality impacts and benefits to south-of-Delta agriculture. Chapter 15 is focused on agricultural resources, but much of the critical analysis is threaded through other chapters	Please refer to response to comment 525-72 and Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the length and complexity of the EIR. When presenting cropping information, Chapter 15, Agricultural Resources, relied upon Land IQ data because it was the most comprehensive mapping

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	including Chapter 17, Socioeconomics, and Chapter 9, water quality. This organization of spreading agricultural analysis across hard-to-find subsections in multiple chapters is unnecessarily confusing and burdensome on the reader. Much of the material in Chapters 15 and 17 is background information and a description of current agricultural operations in the Delta. The description of Delta agriculture relies heavily on LandIQ data. LandIQ data has some minor differences with the Delta Protection Commission's estimates of Delta agricultural production. However, the DPC estimates of Delta agricultural production value only differ with LandIQ by 2%, which is not a large discrepancy given differences in source data. My understanding is that LandIQ data is based on crops observed during the peak growing season, and while considered highly accurate, it may result in slight undercounts of total production over the course of the full year. The estimates of agricultural land lost to construction seem straightforward and reasonable, and while I have no reason to doubt them, I will defer to others on whether these estimates are accurate. However, the truncated analysis of project operations on agriculture due to changes in water quality is problematic. In this area, the DEIR ignores relevant and current findings on salinity impacts and delta agriculture. The impact analysis takes a limited and simplistic focus on whether land remains in agricultural use and compliance with a regulatory standard (D-1641), and does not consider impacts on crop choice and yields. Furthermore, as described in the first section of these comments, it only considers a single operating scenario with implausibly low usage of the DCP ignoring the project objectives which are focused on scenarios with much higher	of crop distribution for the entire study area available during the preparation of the EIR. Land IQ data is also relied upon in Chapter 13, Terrestrial Biological Resources, and DWR intended to use a consistent source of land use data across chapters within the EIR whenever possible to facilitate public review. It is acknowledged that crop patterns are dynamic. As such, please refer to Common Response 13, Agricultural Resources, regarding crop choices. As discussed in Common Response 13, current and future crops choices by agricultural operators are largely driven by market forces which can be highly dynamic; crop choices in the San Joaquin Valley are effectively private business decisions which are not under DWR's authority and hence outside the scope of this EIR analysis. Additionally, the EIR evaluates the ability of project operations to protect agricultural beneficial uses based on adherence to State Water Resources Control Board Water Right Decision 1641 (D-1641) water quality standard. Such salinity standards are thus set not by DWR but by the State Water Resources Control Board for protection of beneficial uses throughout the entire system. The State Water Resources Control Board balances a variety of beneficial uses for the Delta, including but not limited to agricultural use. These proposed intakes will have a certain designed maximum conveyance capacity, but they would often be restricted in how much water is diverted at any given time due to regulatory restrictions, such as maintaining water quality standards, and protecting existing water rights since the proposed Delta Conveyance Project will not involve any new water rights.

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	diversions from the north Delta intakes and thus would have larger water quality impacts. Finally, the chapter inaccurately assumes that south-of- Delta agricultural users will participate in the project, and that they will receive water supply benefits greater than their costs.	
525-74	[ATT 1] 2.1.1. Omits current studies of salinity impacts on Delta crops. The DEIR section on Crop Salinity Tolerances (pages 15-18,19) does not include any references from the last decade, omitting a series of reports over the past decade that show greater salinity impacts on Delta crops than assumed in the DEIR. [Footnote 14: see comment 75] Instead, the DEIR's primary conclusion that salinity is not a problem for Delta agriculture is drawn from Table 15-5 which is not based on data from the Delta itself, but assumes that soil conditions with leaching fractions of 15-20% are found throughout the Delta. Not only is this table contradicted by the studies described below, but it is also contradicted by observations in the narrative of the DEIR itself, "Areas of the south Delta that grow processing tomatoes, which are particularly salt- sensitive in seedling and blooming growth stages, have been documented to exhibit seedling mortality and bloom loss resulting from salt burning during irrigation that have resulted in reduced yields and crop quality during certain years." (pages 15-19, lines 16- 20) A few lines below this quote, in Table 15-5, the DEIR shows that tomatoes would not experience any loss in yield until irrigation water salinity exceeds 2.5 dS/m, a level three times higher than D-1641 standards and double the maximum daily	The commenter asserts that the use of an estimated 15%–20% leaching fraction in the table in Chapter 15, Agricultural Resources, titled Crop Tolerance and Yield Potential of Selected Crops as Influenced by Irrigation Water Salinity (ECw) or Soil Salinity (ECe) in DeciSiemens per Meter (dS/m) does not accurately represent conditions in the Delta. This assertion is not supported by the evidence. Leinfelder-Miles 2016 measured leaching fractions for seven commercial alfalfa fields in the south Delta region (Leinfelder-Miles 2016). The study found that localized leaching rates can be variable but does not establish a leaching rate for the study area that conflicts with the estimate used by Ayers and Westcot (1985) and presented in Chapter 15 of the EIR in Crop Salinity Tolerance table. The commenter also states that the table titled Crop Tolerance and Yield Potential of Selected Crops as Influenced by Irrigation Water Salinity (ECw) or Soil Salinity (ECe) in DeciSiemens per Meter (dS/m) indicates that tomatoes would not experience any loss in yield until irrigation water salinity exceeded 1.5 dS/m. However, this table presents the 100% ECw (irrigation water salinity) value for tomatoes as 1.7 dS/m and the 100% ECe (soil salinity) value for tomatoes as 2.5 dS/m; i.e., it is expected that tomato yield losses could be anticipated if applied irrigation water salinity exceeded 1.7 dS/m, assuming an estimated 15%-20% leaching fraction. Given that salinity levels in irrigation water can be modeled or directly measured using existing water quality monitoring stations within the study area (whereas measurements of soil salinity are more challenging to collect and not readily available throughout the Delta), the salinity of irrigation water (ECw) was the main consideration for evaluating whether operations of the proposed project would adversely affect crops. Local soil conditions

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	level recorded in twenty-five years at various south Delta monitoring locations according to a California EPA report examining data from 1986 to 2011. [Footnote 15: Section F.2 of the Evaluation of San Joaquin River Flow and Southern Delta Water Quality Objectives and Implementation. 2016. Available at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/2016_sed/docs/appx_f2.pdf. (Attached as Exhibit J [See ATT 1 ATT 10.)] The DEIR makes no attempt to reconcile its reference of observed tomato damage which clearly would not occur if its table of estimated salinity tolerances were accurate. Far more problematic is the failure to update this section with any new references since this section was originally published in the 2013 Bay Delta Conservation Plan (BDCP) DEIR.	and irrigation practices can also play a factor in affecting whether the level of applied irrigation water salinity triggers yield losses. For example, if salts have been previously allowed to accumulate in the soil profile, additional water needs to be applied to flush the salts out of the rooting zone; otherwise, crop yields may start to decline even if the area is irrigated with very low salinity irrigation water. As highlighted by the commenter, the EIR does acknowledge observations of tomato crop damage in the south Delta during certain years as a result of salt exposure even with Delta water operations in compliance with D-1641 standards. These observations reflect the fact that soil conditions and irrigation practices in the study area are not homogenous; certain areas may have a higher leaching requirement than the general average for Delta farmland. Overall, though, it is appropriate to assume an estimated 15%–20% leaching fraction and ECw for assessing the effects of the project on crop yields within the study area.
525-75	[ATT 1] [Footnote 14] In fact, this section of the DEIR [Pages 15-18, 119] is a lightly edited, nearly verbatim version of the DEIR of the 2013 Bay Delta Conservation Plan. Given it has been nearly a decade since its original publication, it should be presented as a quote from the 2013 BDCP DEIR, so it is clear to readers that the information is not updated and current. Chapter 14, Agricultural Resources, of the Bay Delta Conservation Plan Draft EIR/EIS. 2013. Available at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/exhibit4/docs/Public_Draft_BDCP_EIR-EIS_Chapter_14_-_Agricultural_Resources.sflb.pdf. (Attached as Exhibit I [See ATT 1 ATT 9].)	The sources referenced in this chapter reflect the most accurate information available regarding agricultural resources in the study area. Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding best available science.
525-76	[ATT 1] The first important analysis ignored by the DEIR was produced by the Brattle Group for DWR in support of the BDCP. The model used in the Draft BDCP Statewide Economic Impact Report [Footnote 16: Draft Bay Delta Conservation Plan	Please see Common Response 12, Agricultural Resources, regarding effects of the project's operation on salinity levels. Ultimately, the Delta is an estuarine system and historically portions of the Delta were saline. The gradient of freshwater conditions within the Delta has driven the

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	Statewide Economic Impact Report. August 2013. Jonathan Hecht, ICF International and David Sunding, The Brattle Group. Available at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/CDWA%20et%20al/SDWA_136.pdf. (Attached as Exhibit K [See ATT 1 ATT 11].)] was also included in the Delta Protection Commission's 2012 Economic Sustainability Plan (ESP). The analysis, which was praised by the ESP peer-review panel, is an econometric, multinomial logit model that estimates the sensitivity of cropping patterns in the Delta to salinity and other factors over a nearly 10-year period. It utilized data from 6,000 crop fields and measured salinity at 50 points in the Delta. The model controls for a variety of physical (e.g., elevation, soil type, temperature, field size, irrigation water salinity) and market variables (e.g., prices) that impact crop choices. The results showed that the salinity of irrigation water had statistically significant effects on cropping patterns in the Delta at the 99% confidence level, even when examining data over a time period that the DWR claims was in compliance with D-1641. Thus, the model shows that change in water quality from the DCP can impact Delta agriculture and create economic harm to Delta farmers even if it is able to maintain salinity below the D-1641 standard. The BDCP Statewide Economic Impact Report examined a scenario in which the Delta tunnels cause a 1.1% increase in average salinity from 347 mS/cm to 351 mS/com, a modest change that would seem to be in compliance with D-1641 standards and of the scale described as less than significant in the DEIR. Nevertheless, the BDCP Statewide Economic Impact Report estimates that even this small change	distribution of crop types in the Delta. Areas with fresher water, such as the north Delta along the Sacramento River, are where many orchards and vineyards were planted, whereas the western Delta was more often planted in alfalfa and managed as pasture due to the naturally higher salinity water that was available in the channels. Please see Chapter 17, Socioeconomics, to reference the socioeconomic analysis performed, which describes economic effects of the project, including on agricultural operations in the Delta. Please see response to comment 525-20 regarding the 6,000-crop field study.

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	in salinity due to the tunnels would result in a $1.8 million decrease in crop revenue in the Delta just from shifts to lower-value crops over time. This analysis was extended and updated by Chaudry et. al. (2020) who found that growers who switched crops were more likely to plant salt tolerant crops when water salinity increased after controlling for a variety of other factors affecting crop choice.[Footnote 17: Chaudhry, A.M., Stone, J.M., Fairbanks, D.H.K., and Michael, J. 2020. Salinity and crop choice in the Sacramento-San Joaquin Delta. Final report submitted to Delta Protection Commission January 24, 2020. (Attached as Exhibit L.[See ATT 1 ATT 12])]	
525-77	[ATT 1] The tables [Table 15-5] assumption of high leaching fractions of 15-20% throughout the Delta is also called into question by recent research. In a study of salinity management for alfalfa at seven different locations throughout the Delta [Footnote 18: Leinfelder-Miles, Michelle. 2016. Management of Salinity in Alfalfa. Available at https://alfalfa.ucdavis.edu/+symposium/2016/PDFfiles/9%20Leinfelder-Miles%20Michelle.pdf. (Attached as Exhibit M. [See ATT 1, ATT 13])], Michelle Leinfelder-Miles found leaching fractions at 5 of the 7 study locations were less than half the value assumed in DEIR Table 15-5, and leaching fractions exceeded 20% at the other two locations. From this study, as well as observed crop damage throughout the Delta, it appears that soil conditions can vary widely across the Delta and that the DEIR's conclusions of insignificant impacts of salinity based on Table 15-5 are not accurate. In 2021, the Delta Stewardship Council published a current review and synthesis of research on Delta agriculture as a technical memorandum to its Delta Adapts: Creating A Climate Resilient Future report that includes these studies. [Footnote 19: Delta Stewardship Council. January 2021. Delta Adapts: Creating a Climate Resilient	The study referenced by the commenter provides measured leaching fractions for seven commercial alfalfa fields in the south Delta region (Leinfelder-Miles 2016). The study found that localized leaching rates can be variable but does not establish a leaching rate for the study area that is in conflict with the estimate used by Ayers and Westcot (1985). Additionally, the EIR evaluates the ability of project operations to protect agricultural beneficial uses based on adherence to State Water Resources Control Board Water Right Decision 1641 (D-1641) water quality standard. The State Water Resources Control Board balances a variety of beneficial uses for the Delta, including but not limited to agricultural use. Please refer to Chapter 9, Water Quality, which concludes that while there could be some increases in salinity (based on modeled electrical conductivity) at some Delta locations in some months, these effects would be less than significant. The Delta Stewardship Council's Delta Adapts: Creating A Climate Resilient Future (Delta Stewardship Council 2021) states that sea level rise may increase salinity exposure of crops in some regions of the Delta and that by 2100, increases in salinity or salinity variability may encourage transitions in some regions of the Delta from higher value crops to crops with less sensitivity to salinity. The analysis provided in Delta Adapts is consistent

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	Future. Draft Technical Memorandum Crop Yield and Agricultural Production. Available at https://www.deltacouncil.ca.gov/pdf/delta-plan/2021-01-15-delta-adapts-crop-yield-and-agricultural- production.pdf. (Attached as Exhibit N.[See ATT 1, ATT 14])] It is stunning and misleading to the public that the DCP DEIR omits all of this current, readily-available information on one of the more important and controversial topics regarding Delta conveyance, and instead simply recycles BDCP materials from 2013.	with the analysis provided in the EIR. In Appendix 15C, Agricultural Resources 2040 Analysis, it is stated that as a result of climate change in the study area by 2040, fallowing or conversion to salt-tolerant crops may result in some land no longer being considered Important Farmland. As discussed in Appendix 9L, Water Quality 2040 Analysis, climate change and sea level rise are primary drivers of water quality changes, including salinity levels, in the study area. As such, it is reasonable to expect that there may be some changes in crop types in the Delta in future decades, as operators adjust to changing baseline conditions and shift to crop types that are more tolerant of higher salinity levels in applied irrigation water. Such a change would be triggered regardless of whether any of the proposed project alternatives were implemented.
525-78	[ATT 1] 2.1.2. DEIR's approach to estimating water quality effects on agriculture understates the project's impacts by ignoring crop yields and crop selection. As discussed in the previous section, the DEIR ignores current scientific evidence regarding salinity effects on Delta agriculture. However, even if the DEIR updated its information on salinity tolerance of Delta crops, it would still understate impacts due to the criteria it uses. Specifically, the DEIR uses two criteria: 1) whether land would go out of agricultural production due to water quality, and 2) compliance with D-1641 water quality standards. The focus on land conversion and compliance with a regulatory standard understates potential agricultural effects by ignoring changes to crop yields and crop choice that would occur even if land stays in production and water quality complies with a regulatory standard. For example, the DEIR attempts to support an insignificant finding of salinity on agricultural resources by stating that no	The commenter states that the Draft EIR understates the project impacts on agriculture by inadequately considering how the project may influence future crop yields and crop selection. Please see Common Response 12, Agricultural Resources, regarding effects of the project's operation on salinity levels. Ultimately, the Delta is an estuarine system and historically portions of the Delta were saline. The gradient of freshwater conditions within the Delta has driven the distribution of crop types in the Delta. Areas with fresher water, such as the north Delta along the Sacramento River, are where many orchards and vineyards were planted, whereas the western Delta was more often planted in alfalfa and managed as pasture due to the naturally higher salinity water that was available in the channels. Furthermore, as discussed in Common Response 12, current and future crops choices by agricultural operators are largely driven by market forces which can be highly dynamic; crop choices in the Delta are effectively private business decisions which are not under DWR's authority and hence outside the scope of this EIR analysis. As discussed in Appendix 9L, Water Quality 2040 Analysis, climate change and sea level rise are primary drivers of water quality changes, including salinity levels, in the study area during the timeframe for when the project would become operational. As such, it is reasonable to expect that there may be some

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	farmland is converted to nonagricultural use, "changes in the level of salinity in the western Delta under the project are not expected to result in exceedance of any significance thresholds for this chapter because it is not anticipated that these changes specifically would trigger a substantial conversion of Important Farmland to nonagricultural use." (DEIR, page 15-51) "None of the modeled changes to salinity during the times of year when the Bay-Delta WQCP does not identify EC targets for agricultural beneficial uses (i.e., post August 15) would be expected to trigger a substantial conversion of Important Farmland to nonagricultural use." (DEIR, page 15-52) Further, the DEIR states (pages 15-26,27) that its analysis is based on the number of days when salinity objectives exceeded D-1641 standards. It finds there is no significant impact because the project description in Chapter 3 states that it will be operated in compliance with D-1641. However, D-1641 standards have been exceeded at several locations in the past few years, and D-1641 standards are routinely waived in drought years, further calling into question the efficacy of using D-1641 as a significance threshold. [Footnote 20: https://www.waterboards.ca.gov/waterrights/water_issues/programs/compliance_monitoring/sacramento_sanjoaquin/ and https://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/tucp/] The problem with the DEIR's approach (focusing on land conversion and water quality standard compliance) is that it does not consider the two primary ways that increased salinity	changes in crop types in the Delta in future decades, as operators adjust to changing baseline conditions and shift to crop types that are more tolerant of higher salinity levels in applied irrigation water. Such a change would be triggered regardless of whether any of the proposed project alternatives were implemented.

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	would affect Delta agricultural production: crop-shifting and crop yields. While land is not expected to go out of production, as discussed in the previous section, farmers would lose revenue by shifting to lower value more salt- tolerant crops as salinity rises. The previous section also discusses research that finds crop yields in some Delta soils can be negatively affected by water quality even when there is compliance with D- 1641. Finally, as discussed in the next section, it is important to note that the DEIR only models water quality effects for a single operating scenario where the DCP is used sparingly.	
525-79	[ATT 1:] 2.1.3. In conflict with stated project objectives, DEIR only analyzes a single operating scenario with very low usage of the north Delta intakes. The DEIR only analyzes an operational scenario where the DCP is used on a very limited basis, representing only 13% of total Delta exports, and going unused for the entirety of most months. However, as discussed in Section 1, three of the four project objectives for the DCP (climate resiliency, seismic resiliency, operational flexibility) describe scenarios in which the north Delta intakes would be used much more extensively. From these objectives, it is clear that the DWR expects and plans to use the DCP more than indicated in the single operating scenario it has modeled. Higher use of the DCP would likely reduce Delta water quality and create larger negative impacts on Delta agriculture.	Please refer to Common Response 3, Alternatives Development and Description, regarding the range of operational scenarios and suggestions that a scenario maximizing use of north Delta intakes should have been analyzed. The assertions that three of the four project objectives would require much more extensive use of the north Delta intakes do not reflect the project that DWR has proposed, which is focused on increasing the SWP's ability to capture high flows. Additionally, the EIR considers whether the effects of the project would change if more SWP diversions are shifted from the south Delta to the north Delta to exercise flexibility. Please refer to response to comment 525-62 regarding the content of Appendix 4B, North Delta Diversion Priority Sensitivity Analysis. The appendix demonstrates that differences compared to the project are overall small and would be unlikely to cause comparatively higher degradation of water quality or impacts on fish species.
525-80	[ATT 1] 2.1.4. Finding of positive effects on south of Delta agricultural contractors is unsupported, and contradicted by agricultural users already opting out of the project due to cost.	Please see Common Response 7, Implementation Considerations, regarding project costs, project funding, and financial feasibility of the proposed project. As noted in Common Response 7, the economic analysis described in the comment is not a CEQA requirement. Under CEQA, economic effects alone are not treated as impacts on the physical environment. DWR and

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	As discussed in Section I of these comments, the DEIR is not supported by a cost estimate, benefit-cost analysis, financial feasibility analysis, cost-effectiveness analysis or any economic and financial analysis that would typically support the planning of a project of this scale. The majority of south-of-Delta agricultural water agencies have already opted out of the project due to cost, including the entire Central Valley Project which represents nearly half of Delta water exports. Several south-of-Delta state water contractors, primarily agricultural, have also already indicated their intention to opt out of paying for the DCP. Others are likely to opt out at a later date. Despite providing zero evidence regarding cost-effectiveness, and the readily observable actions of many agricultural water agencies that already opted out over cost-concerns, the DEIR implausibly makes completely unsupported statements about all the benefits to agriculture south-of-the-Delta even stating without evidence that it will reduce costs to agricultural suppliers in these regions (page 17-86). The entire Section "17.3.3.7 Effects in the South-of-Delta SWP/CVP Export Service Areas" including the finding "ECON-7: Socioeconomic Effects in the South-of-Delta SWP/CVP Export Service Areas" is unsupported due to the lack of appropriate cost estimates, economic and financial analysis in addition to the contradictory evidence clearly observed in the opt-out behavior of so many agricultural contractors. Notably, the entire section lacks even a single reference to support its statements.	potential project beneficiaries will conduct their own economic analyses before committing funding to the project. While not all SWP users have expressed interest in participating in the project, many SWP users continue to see the need for (see Chapter 2, Purpose and Project Objectives) the Delta Conveyance Project and benefits that it would provide. ECON-7 in Chapter 17, Socioeconomics, does not attempt to provide a benefit-cost analysis of potential water supply reliability stabilization provided by the project alternatives in the south-of-Delta export service areas. It also does not attempt to analyze the effects of the project alternatives relative to any other potential projects not part of this EIR. It seeks to provide a qualitative analysis of potential socioeconomic effects associated with the estimated water supply reliability stabilization provided by the project alternatives. ECON-7 identifies that among potential socioeconomic effects in the south-of-Delta export service areas related to water supply reliability stabilization could be cost savings for participating water suppliers if the project is cost effective relative to other supplemental water alternatives. It does not ascertain that the project is expected to reduce costs for any specific water suppliers. ECON-7 identifies other socioeconomic effects that could be realized by contractors in the south-of-Delta export service areas, including agricultural and urban suppliers, but does not make any claims about which specific contractors would experience specific effects. ECON-7 is based on substantial evidence described in the chapter and in the EIR. Specifically, results and information from Chapter 6, Water Supply, regarding estimated water supply is used to discuss water supply reliability. Please see also information from Chapter 31, Growth Inducement, regarding how water supply reliability stabilization affects urban regions. And, see Common Response 1, CEQA Process, General Approach to Analysis, and Other

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		Environmental Review Issues, regarding the definition of substantial evidence and the use of substantial evidence throughout the EIR.
525-81	[ATT 1] 2.2. Community Benefits Program (Chapter 34 and Appendix 3G) The Community Benefits Program is described in Appendix 3G and evaluated in Chapter 34. It is good that DWR is finally acknowledging the very unusual situation where a community that bears the impacts of such a massive infrastructure project receives none of the on-going benefits. While an initial step, after more than a decade of planning Delta Conveyance, this program should be adequately developed to include specific projects and financial commitments. Instead, the DEIR primarily consists of voluminous dumps of outreach meeting materials. Once again, the problems with this section are rooted in the lack of cost estimates, economic and financial feasibility analysis. When the project proponents have put forward no financial plan or compelling evidence that the beneficiaries of the DCP are willing and able to pay for the DCP itself, there certainly is no reason to expect them to fund a robust Community Benefits Program (an additional cost) when it was not included in the WaterFix plan that failed to get financial commitments from many water agencies due to cost. Due to the general lack of credibility of this program expressed in the above paragraph (and numerous public comments included in Appendix 3G), there is not much point in commenting on the specific projects that it mentions could be included. However, it is worth mentioning one program that is not included and has relevant California precedent, a business interruption fund, that directly compensates local businesses	As described in Appendix 3G, Community Benefits Program Framework, no decisions will be made regarding community benefits funding or specific actions until the completion of CEQA review and DWR considers whether to approve of the proposed project or a project alternative. Appendix 3G specifically lists identification of funding limits and potential actions to be financed as a next step that will be developed with community input upon the completion of CEQA review and DWR approval of the project. As described in Appendix 3G, the Delta Community Fund could support potential actions that would enhance the economy in the region, such as a Business Interruption Fund. Please also refer to Chapter 3, Description of the Proposed Project and Alternatives regarding the Ombudsman Program which would provide a single point of contact for all project-related inquiries or questions and assist with any formal processes that are established to address project issues. The Ombudsman would then coordinate with the appropriate DWR or DCA representatives as needed. Please also refer to Common Response 7, Implementation Considerations, regarding project costs and funding.

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	for lost sales during the disruptive construction period. A highly-relevant recent California example is in Los Angeles, where businesses impacted by Metro Rail's tunneling and other construction activities related to expanding the transit network are eligible for compensation for lost business from Metro's Business Interruption Fund (BIF). [Footnote 21: https://www.dropbox.com/s/19fmbk425uyh0yl/2021_Q2_BIF_Fact_Sheet.pdf?dl=0, and http://media.metro.net/projects_studies/bif/images/bif_faqs.pdf]. Metro describes BIF as follows: "Metro's Business Interruption Fund (BIF) provides financial assistance to small "mom and pop" businesses located along the Crenshaw/LAX Transit Project, the Little Tokyo area and the 2nd/Broadway segment of the Regional Connector, and Section 1 and Section 2 of the Purple Line Extension that are impacted by transit rail construction. Transit rail construction can mean growth opportunities for small "mom and pop" businesses located along transit corridors; however, transit construction also can be challenging for them. Metro wants small businesses to continue to thrive throughout construction and post construction. Through the establishment of the BIF, Metro can provide financial assistance to directly impacted small businesses through grants to cover certain fixed operating expenses." The DEIR emphasizes the potential of DCP construction to boost Delta business sales, and the Community Benefits Program includes components designed to steer project spending towards local businesses. By committing to a BIF for	

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	the DCP, the DWR would have a strong incentive to follow through on the promises made in the Community Benefits Program in order to reduce claims made against the BIF. The failure to include a commitment to a BIF, a well-established mechanism to support local businesses during disruptive construction projects, is another reason to doubt the credibility of the Community Benefits Program.	
525-82	[ATT 1: 2.3. Recreation and Tourism Impact Analysis Is Truncated and Incomplete Recreation/tourism are only analyzed qualitatively in the Socioeconomic chapter - and it is stated that impacts are minimal. (17-39, lines 35-37 acknowledge recreation impacts will occur but do not model them) Traffic and noise impacts are likely to substantially reduce recreation and tourism during the construction period. This is also connected to the recommended BIF [Business Interruption Fund] in section 2.2 [see comment 81] of these comments. If the DEIR's analysis of minimal impacts is correct, then establishing a BIF would not be costly due to low claims. If DWR made a commitment to BIF [Business Interruption Fund], the DEIR's claims of minimal impacts would be much more credible.]	The comment alleges recreation and tourism impact analysis is truncated and incomplete. This allegation is not supported by the analyses in the EIR. Please refer to the analysis of recreation resources and impacts in Chapter 16, Recreation, along with the further analysis of recreation and related tourism in Chapter 17, Socioeconomics, particularly in ECON-5. As noted in the recreation analysis, the Delta provides a large area of recreation opportunities and facilities with multiple points of ingress and egress. Further, the project is sited away from recreation facilities, other than under Alternative 5 at the Bethany Reservoir. There is no indication recreation and tourism to Delta recreation areas would be substantially reduced, particularly given the large number of recreation areas and multiple access routes, as outlined in Chapter 16. There is also no indication that recreationists would not frequent the abundant recreation sites throughout the Delta during construction, particularly the many sites that offer opportunities well away from the construction locations; therefore, the proposed project would not lead to a substantial reduction in use levels. Also see Chapter 20, Transportation, and Chapter 24, Noise and Vibration, for further analysis and proposed mitigation measures. See response to comment 525-81 regarding establishing a Business Interruption Fund.
525-83	[ATT 1: In addition, the Recreation 2040 Analysis (Appendix 16B) is highly truncated, based solely on estimated changes in flow from assumed operations in which the north Delta intakes are	Chapter 18, Aesthetics and Visual Resources, Impacts AES-1 through AES-4 evaluate potential impacts of construction, operation, and maintenance of the project. Please see Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding

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	rarely used. It does not consider the aesthetic/visual and navigation effects of the large intake structures on an important part of the Sacramento River from both the water and the scenic highway. It does not consider water quality and fish abundance impacts on recreation. It does not consider how altering operations to satisfy the project goals for climate resiliency, seismic resiliency, or operational flexibility would affect recreation and Delta visitation. These omissions render the recreational impact analysis inadequate.]	the CEQA baseline used in the analysis. As noted in Appendix 16B, Recreation 2040 Analysis, the analysis is provided for informational purposes to disclose whether any of the impact conclusions documented in Chapter 16, Recreation, would change when considered under future conditions (when construction is complete and the project fully operational). The 2040 analysis compares the No Project Alternative under the 2040 scenario to the project alternatives under the 2040 scenario and does not make CEQA conclusions. The 2040 scenario analysis relied on potential changes in flow because changes in water flow would have the greatest influence on boating (navigation) in the Delta. Recreation 2040 conditions of the Delta included the project effects for residents and viewers alike. Please refer to Appendix 9L, Water Quality 2040 Analysis, and Appendix 12C, Fish and Aquatic Resources 2040 Analysis, regarding the analysis of those resources once the project is fully constructed and operational. Please also refer to Common Response 9, Hydrologic Modeling and Approach, regarding how changes in flows over the life of the project were determined.
525-84	[ATT 1] 2.4. Regional Economic Impact Analysis of DCP Construction The DEIR estimates Delta regional economic effects from construction of the DCP using the IMPLAN model. Because there is no cost estimate for the DCP, the DEIR takes the somewhat unusual approach of estimating these economic impacts from direct construction job estimates in the DCP, and entering direct employment impacts into the IMPLAN model rather than construction spending. The DEIR for the WaterFix took the same approach for direct construction employment impacts and thus provides an interesting comparison that has	Using direct employment changes to estimate total changes in employment and labor income is a standard feature of IMPLAN's current and previous software packages, and input-output models in general. It should be noted that in the socioeconomic analysis the defined 'construction-phase' lasting up to 15 years also includes preliminary field investigation jobs, which are expected to last two years prior to start of actual construction. This is explained further in the section titled Methods for Analysis in Chapter 17, Socioeconomics. The comment refers to the California WaterFix project. Thus, the comment does not directly address the Delta Conveyance Project Draft EIR and DWR is not required to respond to comments on projects that are no longer

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	implications for the likely costs of the DCP. According to the DEIR, DCP construction would take up to 15 years and generate a cumulative total of 19,839 FTE employment years of direct construction employment (see detailed tables on pages 17-A-34 through 17-A-38). For comparison, the comparable estimate for the twin-tunnel WaterFix was 14 years of construction and a cumulative total of 23,201 employment years of direct construction employment. [Footnote 22: This is detailed in Appendix 16A of the Partially Recirculated DEIR for the Bay Delta Conservation Plan. Available at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/exhibit3/docs/RDEIRS/Ap_A_Rev_DEIR-S/App_16A_Regional_Imp.pdf (Attached as Exhibit O. [ATT 1, ATT 15])] Thus, the DWR estimates direct construction labor for the one-tunnel DCP to be 85.5% of what was required for the twin-tunnel WaterFix. Non-construction costs such as legal, planning, management, and right-of-way acquisition are unlikely to be reduced for a one-tunnel configuration. Thus, one of the most interesting aspects of the socioeconomic assessment is this indirect evidence that cost savings for the DCP relative to the WaterFix are minimal. Given the financial challenges of WaterFix, this suggests that DCP is likely to fail in its project objective to be cost-effective, and may explain why DWR has not released any cost estimates, economic or financial analysis to support the DEIR.	being pursued. However, DWR has reviewed the comment's content to determine whether the comment may be applicable to the proposed Delta Conveyance Project. The following response is provided for those elements of the comment that are applicable to the Delta Conveyance Project Draft EIR. Employment effects in the Delta Conveyance Project EIR Chapter 17 were analyzed using the methodology described in this EIR and are not related to nor intended to be compared with employment effects described for any other project in any other environmental document. Project costs are not disclosed in the EIR, so drawing conclusions about the cost effectiveness of the project based on information in the EIR would be speculative. Please refer to Common Response 7, Implementation Considerations, regarding the scope of economic analysis in an EIR, the approach used in Chapter 17, and information about cost benefit and financial analyses.
525-85	[ATT 1] A second interesting finding from the construction employment impact estimates is how low DCP employment impacts are relative to the expected spending. Total	This comment compares employment numbers found in the EIR with a cost estimate from a different source. The IMPLAN analysis uses changes in direct employment provided by project cost estimators as input for analysis of total employment and labor income changes. Please see Common

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	employment impacts, including direct, indirect and induced "spillover" effects are estimated by their IMPLAN analysis to be 33,594 job years over 15 years, with peak total employment impact of 5,119 in year 7. Conservatively using a $15.9 billion cost estimate provided to the Design and Construction Authority, this would equate to 2.1 job years per $1 million of public spending. In my experience, a typical IMPLAN analysis of public works spending finds about 8 job years per $1 million of public spending. It is likely that the unique nature of DCP tunnel construction, such as the reliance on extremely expensive tunnel boring machines that are not locally produced and very specialized skill requirements for workers, result in a project that is not labor intensive relative to its cost. From a statewide perspective, it is likely that the net statewide employment impacts of building the DCP are negative, as the DEIR states that more construction of alternative projects would take place in the absence of the DCP as water agencies invest their resources in alternatives. The DEIR should consider and report the likelihood of negative statewide employment impacts from building the DCP relative to the no project alternative. As a result of the specialized nature of DCP construction, not only are the DCP employment impacts per dollar spent low, many of these jobs would likely be filled by workers from outside the Delta region. Indeed, the DEIR states that this is likely the case and presents an estimate that 15% of DCP construction workers (DEIR, page 17-61) will have to move from outside the region due to the demand for specialized skills that can't be found in the local labor force.	Response 7, Implementation Considerations, for more information regarding the scope of economic analysis in an EIR and the approach used in Chapter 17, Socioeconomics. The table titled Examples of Potential Socioeconomic Effects as a Result of Activities Occurring under the No Project Alternative in section No Project Alternative in Chapter 17 identifies potential socioeconomic effects of other projects that may be pursued in the absence of the Delta Conveyance Project. These other projects and potential related socioeconomic effects are discussed qualitatively because specific cost, schedule, and employment information is not available for these projects. Therefore, it would be speculative to try to compare these other projects' employment effects with the employment effects of the project alternatives analyzed in ECON-1, and whether the net employment effects regionally and statewide would be negative, positive, or neutral. It would also be speculative to try to compare the share of workers who would come from outside regions for these other projects versus the share that is expected for the Delta Conveyance Project. Common Response 4, No Project Alternative Description and Analysis, provides additional discussion regarding the local and regional water supply projects water agencies may implement and how they were treated in the EIR. Approval of the project neither prevents nor requires the pursuit of any potential future local water supply projects by State Water Contractors. The projects identified in the No Project Alternative could occur even if the project is implemented.

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525-86	[ATT 1] 2.4.1 Transportation impact analysis is truncated and does not recognize the unusually critical role of transportation to the local economy. Transportation is of enormous and growing importance to the economy of the Delta region, especially San Joaquin County (Stockton-Lodi Metropolitan Statistical Area). Out of 384 MSAs in the United States, the Stockton-Lodi MSA has the third highest (top 1%) location quotient for Transportation and Warehousing employment. [Footnote 23 San Joaquin County Index, 2020. University of the Pacific Center for Business and Policy Research. https://www.pacificcbpr.org/wp-content/uploads/2020/12/SJC-Index-2020spread-1.pdf. (Attached as Exhibit P.)] The DEIR Socioeconomics chapter also shows that Transportation and Warehousing employment is by far the fastest growing employment sector in the Delta counties in Table 17-8, but the DEIR fails to note the significance of this data or connect the Transportation impacts of the project to its Socioeconomic impacts.	Chapter 17, Socioeconomics, identifies the importance of transportation to the local economy in the Delta region. Employment trends by industry are shown in Chapter 17, table titled Delta Region Counties Annual Employment and Shares by Major Industry, 2014-2019. This data is from the California Employment Development Department (EDD) and uses the same industry groupings as the EDD. As this table shows, the transportation, utilities, and warehousing industry grew by an average annual rate of 7.1%, which was higher than for other industries. This industry group represented 4.5% of employment in the region. Estimated secondary effects to this industry group's total employment and labor income related to project construction employment changes are shown in Appendix 17A. Other, qualitative components of the socioeconomic analysis are directly connected to findings from the transportation analysis. Chapter 20, Transportation, and its appendices identify impacts and mitigation measures related to project construction and operations. The impact analyses and mitigation measures from Chapter 20 are discussed in ECON-3 as they affect community cohesion, ECON-5 as they affect recreational experience, and ECON-6 as they affect agricultural economics.
525-87	[ATT 1] In addition to the high dependence on transportation for local jobs, the Stockton-Lodi MSA recently ranked number one in the nation for super-commuters, [Footnote 24: Fitzgerald, Michael. Stockton Metro Area Ranked No. 1 Super Commuter Region. The Record (Apr. 26, 2018). Available at https://www.recordnet.com/story/opinion/columns/2018/04/27/stockton- metro-area-ranked-no/12388734007/ (Attached as Exhibit Q.)] highlighting the critical role of connectivity to the Bay Area to support Stockton area incomes. Transportation routes between San Joaquin County and the Bay Area are particularly critical and involve travel over the Altamont pass or	The commenter's claim that the Draft EIR fails to adequately evaluate the project's transportation impacts on routes connecting San Joaquin County and the San Francisco Bay Area is not consistent with the CEQA findings in Chapter 20, Transportation, section titled Summary Comparison of Alternatives where the project alternatives' potential impacts on transit, roadways, bicycle and pedestrian facilities, rail transportation, marine transportation, and navigation were analyzed. The Draft EIR states that for CEQA Impact TRANS-1, construction of the project alternatives would result in additional VMT to the regional transportation system and increase the total amount of driving and distances traveled for home-based work trips.

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	through the Delta itself. In this context, anything that disrupts transportation in these corridors can have substantial negative economic impacts. The failure of the DEIR to acknowledge this setting and conduct such a limited and truncated transportation analysis, completely failing to link it to socio-economic impacts, is an egregious oversight.	The Delta Conveyance Engineering Project Reports (EPRs) (Delta Conveyance Design and Construction Authority 2022g, 2022h) include construction management and design requirements to reduce effects on the community from construction-related traffic on Delta roadways. These requirements are intended to enhance public safety and reduce traffic congestion during construction. Although they are not related to VMT, the VMT analysis considers their effect on traffic patterns. The Draft EIR also includes detailed provisions and requirements that DWR has incorporated into Mitigation Measure TRANS-1, that would reduce the severity of Impact TRANS-1 by implementing transportation measures that would decrease the total amount of construction employee travel on Delta roadways, incentivize carpooling and vanpooling, and establish state, regional, or local agency coordination to construct the park-and-ride lots and roadway improvements that are designed to minimize VMT-related transportation issues. The commenter's claim that the Draft EIR fails to link transportation to socioeconomic impacts is not consistent with the analysis in the EIR. The impact analyses and mitigation measures from Chapter 20 are discussed in Chapter 17, Socioeconomics, under Impacts ECON-3 as they affect community cohesion, ECON-5 as they affect recreational experience, and ECON-6, as they affect agricultural economics.
525-88	[ATT 1] The methodology used for the Transportation Analysis is inadequate to determine the socioeconomic impact of transportation service losses. The CEQA preferred standard, Vehicle Miles Traveled per construction employee, is the focus of the analysis and not relevant to socioeconomic impacts. Appendix 20A has the beginnings of a detailed analysis of level of service on economically critical transportation routes, but it	The transportation analysis uses the correct methodology per CEQA. For more information on why a VMT analysis is used instead of a level of service analysis, please refer to Common Response 14, Transportation. Please refer to Common Response 7, Implementation Considerations, regarding the scope of the socioeconomic analysis and how the impacts determined for other resource assessments were considered in the socioeconomic assessment. The results of the transportation analysis were

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	uses an approach that obscures the negative transportation impacts. Specifically, the analysis does not identify changes to the level of service for roadway segments that are already below acceptable levels of service under existing conditions prior to construction of the DCP. This is the situation for all segments of the most important inter-regional roadways that connect San Joaquin County and the Bay Area, especially I-580 and SR 12. For these roads, the DEIR only states that they are below an acceptable level of service "under both existing 2020 conditions and existing 2020 conditions with project alternatives." (DEIR 20A-36) Of course, these roads are below an acceptable level of service under current conditions specifically because of their growing economic importance. It is certainly possible to make an unacceptable situation far worse and create significant socioeconomic effects. It is likely that DCP construction traffic could displace or interfere with transportation trips that provide substantial income to San Joaquin County residents, but the DEIR obscures these effects by using a threshold analysis that automatically precludes any consideration of negative effects on some of the most critical regional transportation routes.	considered as part of ECON-3, ECON-5, and ECON-6 in Chapter 17, Socioeconomics.
525-89	[ATT 1:] REFERENCES A. Resume of Dr. Jeffrey Michael B. Boxall, Bettina. Water District Vote Deals Major Blow to California's Delta Tunnel Project. Los Angeles Times (Sept. 19, 2017). C. California Department of Water Resources. 2018.	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter. DWR has reviewed all comments and will consider all comments in its decision-making process.

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	Economic Analysis of Stage I of the California WaterFix; Costs and Benefits to Urban and Agricultural Participants. Prepared by The Brattle Group and David L. Sunding, Ph.D. D. Boxall, Bettina. California Moves Ahead with One Delta Tunnel, Scaling Back Ambitious Water Delivery Project. Los Angeles Times (Feb. 8, 2018). E. Letter from Governor Brown to Board Members of the Metropolitan Water District of Southern California dated April 9, 2018. Available at https://www.ca.gov/archive/gov39/wp-content/uploads/2018/04/Governor-Brown-Letter-to-MWD-4.9.18.pdf. F. See page 62 of page 103 of the agenda packet for the August 20, 2020, meeting of the Board of Directors of the Delta Conveyance Design and Construction Authority. Available at https://www.dcdca.org/wp-content/uploads/2020/09/2020-08-20-DCABoardPkgVF-1.pdf. G. Department of Water Resources & Department of Fish and Game. 2008. Risks and Options to Reduce Risks to Fishery and Water Supply Uses of the Sacramento/San Joaquin Delta. Available at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/CDWA%20et%20al/SDWA_143.pdf. H. Letter from Jeffrey A. Michael, Ph.D., University of the Pacific, to Department of Water Resources dated December 15, 2011. Available at https://www.waterboards.ca.gov/waterrights/water_issues/pr	

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	ograms/bay_delta/california_wat erfix/exhibits/docs/CDWA%20et%20al/SDWA_142.pdf I. Chapter 14, Agricultural Resources, of the Bay Delta Conservation Plan Draft EIR/EIS. 2013. Available at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/exhibit4/docs/Public_Draft_BDCP_EIR-EIS_Chapter_14_-_Agricultural_Resources.sflb.pdf. J. Section F.2 of the Evaluation of San Joaquin River Flow and Southern Delta Water Quality Objectives and Implementation. 2016. Available at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/2016_sed/docs/appx_f2.pdf. K. Draft Bay Delta Conservation Plan Statewide Economic Impact Report. August 2013. Jonathan Hecht, ICF International and David Sunding, The Brattle Group. Available at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/CDWA%20et%20al/SDWA_136.pdf. L. Chaudhry, A.M., Stone, J.M., Fairbanks, D.H.K., and Michael, J. 2020. Salinity and crop choice in the Sacramento-San Joaquin Delta. Final report submitted to Delta Protection Commission January 24, 2020. M. Leinfelder-Miles, Michelle. 2016. Management of	

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	Salinity in Alfalfa. Available at https://alfalfa.ucdavis.edu/+symposium/2016/PDFfiles/9%20Leinfelder-Miles%20Michelle.pdf. N. Delta Stewardship Council. January 2021. Delta Adapts: Creating a Climate Resilient Future. Draft Technical Memorandum Crop Yield and Agricultural Production. Available at https://www.deltacouncil.ca.gov/pdf/delta-plan/2021-01-15-delta-adapts-crop-yield-and- agricultural-production.pd O. Appendix 16A of the Partially Recirculated DEIR for the Bay Delta Conservation Plan. Available at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/exhibit3/docs/RDEIRS/Ap_A_Rev_DEIR-S/App_16A_Regional_Imp.pdf. P. San Joaquin County Index, 2020. University of the Pacific Center for Business and Policy Research. https://www.pacificcbpr.org/wp-content/uploads/2020/12/SJC-Index-2020spread- 1.pdf. Q. Fitzgerald, Michael. Stockton Metro Area Ranked No. 1 Super Commuter Region. The Record (Apr. 26, 2018). Available at https://www.recordnet.com/story/opinion/columns/2018/04/27/stockton-metro-area-ranked- no/12388734007/.	
525-90	[ATT 1 of ATT 1: Dr Jeffrey A. Michael Statement of Qualifications]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter. DWR has reviewed all comments and will consider all comments in its decision-making process.

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525-91	[ATT 2:] I have reviewed portions of the above DEIR relative to Delta levees and flood control. This review included Chapter 7- Flood Protection, and any other engineering reports and Technical Memoranda relative to levees and soils. As described, below, the DEIR does not provide project description for the through Delta portion of the alternatives that include dual conveyance, it also fails to evaluate settlement caused by vibration of the tunnel boring machines, and it also mischaracterizes levees in the Delta which could lead to erroneous analyses.	Please refer to Tunnel-Bore Ground Settlement section of Chapter 10, Geology and Seismicity, which discusses the hazard of ground settlement above the tunnel during boring. Specifically, Impact GEO-4 analyzes the potential for tunnel-induced ground settlement and surface structure-related ground settlement. The impact was determined to be less than significant. Furthermore, the Tunneling Effects Assessment technical memorandum (Delta Conveyance Design and Construction Authority 2022f) provide a sufficient level of detail to show that settlement will be minor overall and that future geotechnical studies would determine what site-specific measures would be needed to protect existing infrastructure and buildings.
525-92	[ATT 2:] The DEIR Fails to Fully Describe the Through Delta Portion of the Dual Conveyance Alternatives The DEIR fails to provide complete project descriptions for the dual conveyance alternatives. Several of project alternatives, including the preferred alternative, describe the alternative as “dual conveyance”. Operational descriptions of the alternatives also indicate that the tunnel intakes will only be in operation a small percentage of the time. It is assumed that this means for the majority of the time, the existing south Delta export pumps will be in use; constituting a “dual conveyance”. However, the DEIR does not describe the recommended improvements to the levees that provide the freshwater pathway from the Sacramento River to the south Delta pumps. Some sections of the DEIR, are critical of these levees and cite their deficiencies, so in order provide for a dependable water supply, there must be a description of how these levees will be improved, the impacts of doing so, and what additional work will be needed to account for sea level rise and climate change. A previously	Please refer to Common Response 3, Alternatives Development and Description, regarding operations and operational criteria descriptions of dual conveyance and levee repairs and upgrades as components of the proposed project and alternatives. In addition, see Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, regarding DWR’s role in levee management throughout the Delta. Please also see Chapter 7, Flood Protection, regarding how the proposed temporary and permanent levees that carry State Route 160 adjacent to the Delta Conveyance Project intakes and modified flood control levee improvements around Bouldin Island or Lower Roberts Island will meet or exceed the current level of flood protection and USACE standards. However, Delta-wide levee work is beyond the scope of the Delta Conveyance Project. No change has been made to the project description.

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	proposed conveyance project known as the Bay Delta Conservation Plan included an armored pathway as part of the project description, thus acknowledging the levee improvements needed to sustain the freshwater corridor portion of the dual conveyance system directing water from the Sacramento River to the export pumps in the south Delta.	
525-93	[ATT 2] The DEIR Fails to Analyze the Potential Settlement Caused by Vibration of the Tunnel Boring Machines The DEIR only performs a very cursory evaluation of settlement caused by vibration of the tunnel boring machine. In addition, it is based on very generalized soils data. Based on the very limited deep soil borings presented in the DEIR at the intake locations, these borings show the underlying the [sic] surficial peats, clays, sands & silts, a majority of the soil from the ground surface to the tunnel depth consists of sands, coarse sands and gravel. This is typical throughout the Delta. These soils are present as a result of 15,000 years of sea level rise and reflect a time when the Delta's elevation was higher in the watershed, above tidal zone, and heavier sediment from prehistoric floods was deposited. These noncohesive soils tend to consolidate when vibrated. The constant vibration from the TBM's could consolidate these soils and the consolidation could present itself at the surface as settlement. This settlement should be evaluated since it has the potential to damage buildings, levees and other structures along the path of the tunnel. In addition, with over 40 miles of tunneling, soils will vary a lot over the length of the tunneling, with soils varying along the way. Therefore, an adequate evaluation cannot be performed until soil borings along the entire length of tunneling are compiled.	Please see response to comment 525-19 regarding the analysis of settlement related to tunnel-boring vibration in Chapter 10, Geology and Seismicity. In addition, it is not necessary to conduct borings the entire length of an alignment to adequately characterize the settlement impacts for the purposes of CEQA. The impact analyses in Chapter 10 are informed by the settlement analysis in the Tunneling Effects Assessment technical memorandum (Delta Conveyance Design and Construction Authority 2022f). This technical memorandum describes the approach for the settlement analysis, key parameters, critical analysis locations, and methods to reduce settlement.

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525-94	[ATT 2] The tunnel will pass near and under the community of Hood. There is a potential for this [settlement caused by vibration of the tunnel boring machines] to damage buildings in Hood. Also, there are a number of buildings along the way that could also be damaged. Attached is a report [see ATT 2 ATT 1] of damage to buildings and monitoring of settlement in regard to the Elizabeth Line of the Crossrail Project in London. As the report describes, settlement occurred and buildings were damaged as a result of the tunnel boring machine vibration. The soils under the Delta are more susceptible to consolidation which could result in settlement than the London soils and therefore this should be analyzed.	Please see response to comment 525-19 regarding the analysis of settlement related to tunnel-boring vibration. As described in Chapter 10, Geology and Seismicity, in the discussion of Impact GEO-4, the tunnel alignment would not cross beneath nearby communities. Settlement along the tunnel alignment near the community of Hood is considered in the Tunneling Effects Assessment technical memorandum (Delta Conveyance Design and Construction Authority 2022f). This analysis indicates that minimal settlement of 0.1 to 0.4 inches could occur at the ground surface along the tunnel alignment with implementation of specific actions, which are part of the project design. The technical memorandum describes the use of changing the tunnel boring machine operations and/or using ground improvement methods such as soil grouting to reduce the settlement potential.
525-95	[ATT 2] In addition, the DEIR presents current conditions of levees along the tunnel alignment and describes that some have less than 1-foot of freeboard above the 100-year flood. Therefore, any settlement will impact levees that may be deficient in freeboard and static stability. The location and extent of levee settlement [from tunnel boring machines] should be evaluated at [sic] part of the DEIR analyses.	Please see response to comment 525-19 regarding the analysis of settlement related to tunnel-boring vibration. In addition, as described in the Tunneling Effects Assessment technical memorandum (Delta Conveyance Design and Construction Authority 2022f) and Impact GEO-4, a project-specific instrumentation monitoring program would be developed as part of the project design, which would be used during construction to monitor the performance of the construction and adjust TBM operations to further limit settlement. Specifically, inclinometers and extensometers would be installed in vertical borings along levees at the intakes, Bouldin Island, Lower Roberts Island, and Byron Tract and along levees near bridge improvements along Hood-Franklin Road over Snodgrass Slough, State Route 12 over Little Potato Slough, the access road to Mandeville Island over Connection Slough, the access road to Lower Roberts Island over Burns Cut and Turner Cut; and the bridge across the California Aqueduct near Byron Highway.
525-96	[ATT 2] The DEIR Mischaracterizes the Current State of the Delta Levee System	As described in Chapter 2, Purpose and Project Objectives, the fundamental purpose of the Delta Conveyance Project is to restore and protect the reliability of SWP deliveries. The proposed project is not a flood control project but has been designed to ensure that intake structures on

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	The DEIR Chapter 7 -- Flood Protection, and Technical Memorandum 050 CE-H Flood Risk Management, attempt to describe the state of the current levee system and impacts that the conveyance project may have on the system. However, in many instances in Chapter 7 makes incorrect statements about the levees of the Delta. It seems to assume that Delta levees act only as flood control structures. It does not necessarily acknowledge that in addition to flood control, water supply reliability relies on Delta levees as they provide the channels that are used to direct water from the Sacramento River to the south Delta export pumps.	the Sacramento River and modifying flood control levees would not reduce the protection afforded by the existing flood control system. Chapter 2 identifies the importance of Delta levees not only for flood control, but also for water conveyance reliability. The EIR adequately describes levees and flood control facilities related to project facilities. The section titled North Delta Intakes in Chapter 3, Description of the Proposed Project and Alternatives, provides a detailed discussion of the north Delta intakes that indicates that the level of flood control afforded by the existing levee would be maintained during and after construction. At the intake sites, the jurisdictional levee would be constructed before the existing levee was removed to allow intake construction, thereby not changing the existing protection level. At the reception and maintenance shaft sites, the tunnel shaft would be raised at a height greater than the flood elevation and this would occur prior to construction of the tunnel shaft opening. At the tunnel launch shaft sites, either the island levees would be improved (Bouldin or Lower Roberts Islands) or a ring-levee would be constructed (Twin Cities Complex). The tunnel launch shaft sites at the Southern Complex would be protected by existing levees; and the Bethany Complex would not be susceptible to major flooding.
525-97	[ATT 2] Several instances of questionable statements are described, below: DEIR Chapter 7 Page 7-3, Lines 13 -- 17 The DEIR indicates that the levees protecting the launch sites on Bouldin Island and Roberts Island would be improved to the Delta Specific Public Law 84-99 standard and therefore would be out of the 100-year flood hazard area due to levee	The information in Chapter 7, Flood Protection, that the commenter refers to regarding the 100-year flood protection has been clarified; however, as noted in the chapter, the levees would be improved to meet PL 84-99 geometric and geotechnical standards to limit long-term flood risk. See also the discussion of Impact FP-2 in Chapter 7. The improvements to the levee system are intended to protect construction-related activities. Levee improvements at Bouldin and Roberts Islands are warranted during construction, given the long duration of construction activities at these sites. Therefore, as described in the Delta Conveyance Design and Construction Authority Intake Flood Management

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	improvements. This is not true since 100- year flood protection would have to be certified by FEMA and the PL 84-99 standards would not suffice. In addition, improving levees in areas where weak foundations exist requires continual maintenance and rehabilitation in order to maintain their level of protection. These levees would require continual maintenance and have to continually worked on to keep up with sea level rise and climate change in order to assure some level of protection of project features for the life of the project.	technical memorandum (Delta Conveyance Design and Construction Authority 2022d), elevated pads with access ramps would be constructed to create a work platform equal to, or above the projected 2040 100-year water surface elevation. The final elevation of the top of the tunnel shafts would be designed to be higher than the 100-year flood event with sea level rise in Year 2100 and freeboard requirement. Additionally, as described in Chapter 2, Purpose and Project Objectives, the fundamental purpose of the Delta Conveyance Project is to restore and protect the reliability of SWP deliveries. The proposed project is not a flood control project but has been designed to ensure that intake structures on the Sacramento River and modifying flood control levees would not reduce the protection afforded by the existing flood control system. As described in Areas Subject to Flooding section of Chapter 7, federal regulatory requirements represent the minimum level of compliance needed, while state and local requirements may be more stringent.
525-98	[ATT 2] Several instances of questionable statements are described, below: DEIR Chapter 7 Page 7-11 Lines 22-26 The text suggests that Delta levee failures would only impact water quality during the initial rush of water following levee breaches. However, even if a levee breach does not impact water quality during the initial breach, levee breaches may disrupt through Delta conveyance by interrupting the pathway that directs water from the Sacramento and San Joaquin Rivers to the export pumps in the south Delta. Recent studies have also shown that long term breaches of certain Delta levees will	The commenter incorrectly describes the information in Chapter 7, Flood Protection. The text in Chapter 7, lines 22–26, of the Draft EIR only draws attention to the importance of flood protection and possibility of saline water intrusion into freshwater system, if the levees were to breach, contaminating the water quality. The text identified by the commenter does not describe the temporal nature of these potential impacts, nor does it lay any emphasis on the initial rush. For a complete description of water quality within the Delta, please see Chapter 9, Water Quality.

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	increase the tidal exchange enough impact water quality.	
525-99	[ATT 2] Several instances of questionable statements are described, below: DEIR Chapter 7 Page 7-11 Lines 38-45 This section describes the north Delta channels as having lack of capacity to contain combined flows of the Cosumnes River, Mokelumne River and Dry Creek and uses certain issues that occurred during 1986 to justify this assertion. This statement does not consider the fact that since 1986, the levees along the Mokelumne/Cosumnes system have had millions of dollars invested in them and are much improved since 1986. In fact, the largest flood on record in this area occurred in 1997, and all the levees conveyed flood waters through the system without any major problems. McCormack-Williamson Tract overtopped in 1997, but it has a restricted height levee as required by agreements with upstream landowners since the 1930's, and a California Central Valley Flood Protection Board permit issued in the 1940's. Deadhorse Island flooded in 1997, but only due to the surge of water flowing out of McCormack-Williamson Tract as the island filled and its downstream levee breached along Deadhorse Cut. In 2017, a flood that was identical to 1986 passed through without any failures. The key river gage in the area is the Mokelumne River near Thornton (aka Benson's Ferry) which is just downstream of the confluence of the Mokelumne and Cosumnes Rivers. Attached is a bar chart [ATT 2 of ATT 2] showing annual peak stages at the gage for the period 1983-2018. Since 1997 and 2017 met, or exceeded, the 1986 flood water surface elevation, shows	The commenter notes text in Chapter 7, Flood Protection, that describes a specific example of an incident where a flood event resulted in levee failure. It is understood that improvements to Delta levees have occurred since the time of the cited incident (1986); however, it is also recognized that additional levee improvements are needed in the Delta, and the Delta is still at risk due to flooding. The information provided by the commenter is complementary to data that was provided in the existing setting of the EIR and would not change the findings in the EIR. Therefore, no changes were made. As described in Chapter 2, Purpose and Project Objectives, the basic objective of the Delta Conveyance Project is to restore and protect the reliability of SWP water deliveries. The proposed project is not a flood control project but has been designed to ensure that intake structures on the Sacramento River and modifying flood control levees would not reduce the protection afforded by the existing flood control system. Factors such as the continuing subsidence of lands, risk of seismic activity and levee failures within the Delta, sea level rise, precipitation change, warmer temperatures, and wider variations in hydrologic conditions associated with climate change threaten the reliability of the current SWP water conveyance system. Please also refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding use of best available tools and science. During engineering conceptual design, major construction project sites under all alternatives were subject to an assessment of flood risks and a levee vulnerability assessment based on current conditions; see the Delta Conveyance Design and Construction Authority Intake Flood Management technical memorandum and the Levee Vulnerability Assessment technical

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	that channel capacity is not the issue the DEIR describes. Page 7-13, Lines 25-33 Similar to the above description, this section incorrectly assumes that the same issues that affected the levees in 1986 still exists.	memorandum (Delta Conveyance Design and Construction Authority 2022d, 2022e). These documents identify potential vulnerabilities within the Delta levee systems; evaluate Delta flood risk; include management measures, emergency response, and flood inundation mapping; and provide site-specific recommendations for structure flood risk mitigations to major construction locations. Intakes, tunnel shafts, Southern Complex, and Bethany Complex structures would be designed for long-term operations to be protected from the 200-year flood event with climate change-induced hydrology, sea level rise for Year 2100, and freeboard criteria.
525-100	[ATT 2] Several instances of questionable statements are described, below: DEIR Chapter 7 Page 7-15, Lines 6-9 These lines suggest that the Yolo Bypass only floods every 33 years on the average. This is not correct. A more correct estimate is that the Yolo Bypass has a 33% chance of flooding in any one year. In other words, it floods about once every 3 years.	Chapter 7, Flood Protection, in the Final EIR has been revised to more accurately characterize the flooding frequency of the Yolo Bypass. In response to this comment, the text has been revised to indicate that Yolo Bypass conveys flood waters about once every 3 years. However, the Delta Conveyance Project would not affect the frequency or duration that the Yolo Bypass would convey flood waters. Please note that revisions in Chapter 7 do not change the findings in the EIR.
525-101	[ATT 2] Several instances of questionable statements are described, below: DEIR Chapter 7 Page 7-16, Lines 15-19 This section describes Sacramento River Flood Control Project levees having 200-year protection for urban areas, and 100-year protection for smaller, unincorporated areas such as small	Please see response to comment 525-99 regarding details on flood protection. Further, text in Chapter 7, Flood Protection, has been revised to remove mention of small communities having 100-year flood protection. The revision did not result in a new significant environmental impact, substantial increase in the severity of an environmental impact, or additional mitigation measures to which DWR was unwilling to commit.

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	Delta communities. The urban levees protecting Sacramento and West Sacramento are striving to meet the 200-year level of protection. However, asserting that the small communities have 100-year protection is not true. If it was true, Figure 7-1 on page 7-3 would not show all the agricultural areas of Delta within the 100-year floodplain. None of the SPFC levees in the north Delta that protect agricultural areas and small communities provide 100-year protection, and there are no plans to improve them to 100-year protection. In fact, the levee on which the DCP intakes will be constructed (Maintenance Area 9 South) is estimated to have an approximate 15-year level of protection (Delta Levees Investment Strategy, Final Report, Delta Stewardship Council, July 2017).	
525-102	[ATT 2] Several instances of questionable statements are described, below: DEIR Chapter 7 Page 7-16 Lines 42-45 These lines describe the levees along the west side of the Sacramento River and Cache Slough as non-SPFC [State Plan of Flood Control] levees. This is not totally correct. Although they are not SPFC levees, they are technically part of the Yolo Bypass and protect land with flowage easements, so they are not meant to provide full flood control protection as they have restricted height by order of the State Flood Protection Board and designed to overtop at certain flood levels. SPFC levees west of these levees that protect RD's 536 and 2060 are flood control levees designed to contain flood flows in the Yolo Bypass.	Please see response to comment 525-99 regarding details on flood protection.

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525-103	[ATT 2] Several instances of questionable statements are described, below: DEIR Chapter 7 Page 7-17, Lines 1-5 This section describes the inspection of SPFC [State Plan of Flood Control] levees. Although the annual inspections may be presented in reports every 5 years, they are actually presented in annual reports so that local maintaining agencies can plan their maintenance to correct any unacceptable items. This is very important because poor results on an annual inspection could affect PL84-99 eligibility during the next flood.	The statement the commenter notes regarding Draft EIR Chapter 7, Flood Protection, page 7-17, lines 1-5 has been clarified in the Final EIR. The revision did not result in a new significant environmental impact, substantial increase in the severity of an environmental impact, or additional mitigation measures to which DWR was unwilling to commit.
525-104	[ATT 2] Several instances of questionable statements are described, below: DEIR Chapter 7 Page 7-17, Lines 6-17 This section attempts to describe the disaster assistance available to non-project levees. It references the 1983 Hazard Mitigation Plan for which the state and FEMA entered into an agreement which assured the state that if certain conditions were met, FEMA would be available to assist qualifying reclamation districts during a federally declared disaster. The 1983 HMP described 2 conditions to remain eligible for FEMA assistance. The first condition, known as the short-term HMP standard required reclamation districts to meet a geometric standard and maintain its levee to that standard in order to qualify for disaster assistance. The second condition required	As noted by the commenter, Chapter 7, Flood Protection, states that the Delta Hazard Mitigation Plan was not renewed by FEMA. The comment does not raise a significant environmental issue relating to the proposed project or address the adequacy, accuracy, or completeness of the analysis contained in the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.

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	that within 20 years, the reclamation districts would be required to meet the DWR Bulletin 192-82 standard. Due to shortfalls in funding, it took reclamation districts longer than expected to reach short-term HMP, so the requirement to meet the Bulletin 192-82 standard was extended beyond the initial 20 years. When the agreement was up for renewal in 2013, the state could not commit to providing funding to meet the Bulletin 192-82, or Delta Specific PL 84-99 standards, and the HMP agreement was allowed to expire.	
525-105	[ATT 2] Several instances of questionable statements are described, below: DEIR Chapter 7 Page 7-21, Lines 34-37 These lines describe the Bulletin 192-82 levee design as having a landside slope of 1 (vertical) to 3 (horizontal). The March 1989 DWR Draft Memorandum Report, "Minimum Geometry Criteria for Rehabilitating Existing Levees in Sacramento-San Joaquin Delta", further describes the landside slope would vary from 3:1 to 7:1 based on levee height and thickness of peat. It also allows for a toe berm with varying slopes based on levee height and thickness of peat.	The section in Chapter 7, Flood Protection, titled Levee Standards and Compliance has been revised to address the comments regarding design standards for Bulletin 192-182. The revision did not result in a new significant environmental impact, substantial increase in the severity of an environmental impact, or additional mitigation measures to which DWR was unwilling to commit.
525-106	[ATT 2] Several instances of questionable statements are described, below: DEIR Chapter 7 Page 7-23, Lines 12-20 This section describes land subsidence and the effect it has on	Please see response to comment 525-99 regarding details on flood protection. As described in the Tunneling Effects Assessment technical memorandum (Delta Conveyance Design and Construction Authority 2022f), information from the future field investigations, will be used to develop a monitoring program during construction on, near, or under major levees, roads, railroads, and pipelines. The geotechnical information will also be used to

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	levee stability. It describes that as elevation of the land subsides, the resulting increase in the difference between the water surface and ground provides increased hydraulic loading and raises the risks to stability, seepage, piping, and slope stability. This is true to a certain extent. Based on foundation conditions, there is a certain effective area where this is true. Beyond that point, subsidence does not affect the levee. This effective area is recognized by the Delta Levee Subventions what allows purchase of easements up to 400-feet from the levee toe to limit farming practices that cause subsidence as an eligible levee maintenance practice. Beyond this 400-foot effective area, DWR does not consider subsidence to be a problem for levees.	establish criteria for allowable settlement, in coordination with the owners and operators of the infrastructure. During construction, monitors will be installed at these infrastructure crossings. If observed settlement is greater than allowable criteria, construction activities will halt and restoration and protection efforts will be implemented in accordance with the design phase recommendations. Refer to Chapter 3, Description of the Proposed Project and Alternatives, section titled Field Investigations; and Chapter 11, Soils, section titled Methods for Analysis for additional discussion on the monitoring activities DWR will conduct to address settlement. The assertion that DWR did not consider subsidence effects beyond 400 feet from levee toes is inaccurate. No where does Chapter 7, Flood Protection, limit the analysis area to 400 feet or state that constructing the tunnel or other facilities would not result in subsidence in areas more than 400 feet from a levee. Moreover, the procurement of easements to control surface activities within or beyond 400 feet from a levee, as suggested by the commenter, will not address subsidence attributable to tunneling or other project construction activities. As discussed in Chapter 7, DWR will purchase land and construct new levees at the intakes that meet USACE/CVFPB standards. Thus, easements to restrict future land uses at the intakes would not be required. DWR will monitor ground movement along the length of the tunnel and at shaft locations to ensure ground movement/settlement does not adversely affect surface features, as noted above.
525-107	[ATT 2] Several instances of questionable statements are described, below: DEIR Chapter 7 Page 7-47, Lines 12-15 These lines describe the discharge of water into the local	Impact FP-2, in Chapter 7, Flood Protection, indicates that "All project features would be constructed to not increase peak runoff flows into adjacent storm drains, drainage ditches, rivers, or sloughs." As described in the Process and Method of Review for Impeding or Redirecting Localized Flood Flow section of Chapter 7, and in the Local Water Supply, Drainage, and Utilities section of Chapter 3, Description of the Proposed Project and Alternatives, the location and capacity of existing

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	drainage channels. Although the intent is not to exceed the capacity of these channels, any increase in flows during the irrigation season may raise the water table to the point where it impacts the crop root zones. This impact would occur long before reaching the channel capacity.	drainage and irrigation facilities that may be affected by construction of the Delta Conveyance Project would be determined and the capacity of this infrastructure to convey drainage or irrigation water would be maintained. At all construction sites, all stormwater and dewatering flows generated at every construction site would be collected, treated on-site, and stored on-site for re-use on-site to minimize the need for diverting other waters. The storage facilities would also eliminate the "peak flow" stormwater flows into existing drainage channels. Additionally, as discussed under Impact FP-2 in Chapter 7, a review of the drainage systems will be performed to assess the impacts of tunneling operations, dewatering, and drainage as part of the final design.
525-108	[ATT 2] Technical Memorandum 050 CE-H Flood Risk Management Section 2.2 Seismic Risk This section describes the seismic risk to levees due to earthquakes. It references the Delta Risk Management Strategy (DRMS) as the source. However, data used in DRMS is outdated. Since the 2014 Napa earthquake when the USGS was able to monitor shaking in the Delta due to newly installed motion sensors, it is well known that DWR's Delta Risk Management Strategy erroneously predicted that the Delta soils would amplify ground acceleration, but in fact the 2014 data show that the soils dampened the ground acceleration. The DSC Delta Independent Science Board held a symposium in 2016 to highlight this fact. Proceedings from the symposium can be found online. Subsequent studies by Metropolitan Water District, using consultants used by the DCP, concluded that levee deformations due to an extreme seismic event would be less than previously predicted and could be lessened by wider levees and toe berms. Any sections of the DEIR, TM's and engineering reports referencing the DRMS seismicity	Section 2.2 of the Flood Risk Management technical memorandum (Delta Conveyance Design and Construction Authority 2022c) and other chapters of the Draft EIR provide information about potential seismic risk in the Delta based on information published by the U.S. Geological Survey, which was referenced in the DRMS Study (California Department of Water Resources 2009). As described in Chapter 7, Flood Protection, section titled Seismic Activity of the Draft EIR, DWR acknowledges that recent investigations suggest that earthquake-induced ground shaking affecting Delta levees may be less severe, but it still considers the potential for a seismic event that poses a significant threat to Delta levees. Various EIR chapters and referenced technical memoranda present information obtained from DRMS reports related to Delta soil conditions, levee stability, and flood and seismic risk. Some of the information has been updated, as noted in various places in the EIR, based on recent studies performed since DRMS reports were published. The project alternatives considered in the Draft EIR are based on conceptual level engineering analysis and the best available scientific information. As summarized in the Chapter 10, Geology and Seismicity, section titled Crustal Faults, the seismic hazard analyses study performed for the Delta

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	conclusions should be updated to the best available science.	Conveyance Project by Lettis Consultants International (Lettis Consultants International 2021) used a seismic source model that was updated from the Delta Risk Management Strategy (DRMS) seismic hazard study. As appropriate, the geometry of some of the fault sources, and other parameters such as seismogenic crustal thickness and slip rate, were modified from the DRMS model to incorporate new data and interpretations, some of which are included in the more recent Uniform California Earthquake Rupture Forecast, Version 3 (UCERF 3). In addition, the potentially active local faults such as West Tracy and Midland faults were characterized and incorporated based on best available fault data developed since the DRMS model. The updated model was used to estimate the Maximum Considered Earthquake for the project facilities. Please see Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding use of best available science and for a discussion of how the project is designed to protect the State Water Project from a seismic event. Please also see Common Response 3, Alternatives Development and Description, for a discussion of the alternatives development process, including non-tunnel alternatives.
525-109	[ATT 2] Thank you for the opportunity to review the DEIR and provide these comments. If you have any questions, or would like additional information, please let me know.	This information provides general conclusionary text. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.
525-110	[ATT 2 of ATT 1: Report on damage assessment and monitoring for buildings on the Elizabeth line in London, England, regarding settlement of sediments from tunnel boring.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-111	[ATT 2 of ATT 2: Bar graph of Annual Maximum Storage of the Mokelumne River near Thornton (DWR B95175).]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.

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525-112	[ATT 2 of ATT3: Curriculum Vitae of Gilbert Cosio Jr.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-113	[ATT 3] The San Joaquin County Department of Public Works has reviewed the transportation-related materials within the July 2022 Draft Environmental Impact Report (DEIR) for the Delta Conveyance Project. Our review identifies instances in which the DEIR fails to adequately evaluate the project's transportation impacts and relies on unenforceable mitigation. As a result, the DEIR underestimates and inadequately addresses transportation-related impacts caused by the project's construction. An updated DEIR should be provided to properly assess and mitigate the potential transportation impacts that the project would create.	The commentor's statement that the Draft EIR fails to adequately evaluate the project's transportation impacts and relies on unenforceable mitigation is not consistent with the CEQA findings in Chapter 20, Transportation, specifically in the section titled Summary Comparison of Alternatives, where the project alternatives' potential impacts on transit, roadways, bicycle and pedestrian facilities, rail transportation, marine transportation, and navigation were analyzed. The Draft EIR states in Chapter 20 under Impact TRANS-1 that construction of the project alternatives would add VMT to the regional transportation system and increase the total amount of driving and distances traveled for home-based work trips. The Draft EIR includes detailed provisions and requirements that DWR has incorporated into Mitigation Measure TRANS-1 that would reduce the severity of Impact TRANS-1 by implementing enforceable transportation measures that would decrease the total amount of construction employee travel on Delta roadways through a combination of incentivizing carpooling and vanpooling, and establishing state, regional, or local agency coordination to construct the park-and-ride lots and roadway improvements that are specifically designed to minimize VMT-related transportation issues. To offset the project alternatives' projected increase in VMT above 22.5 miles per employee during the construction period, it was determined that 25% of the construction workforce would need to carpool to and from the park-and-ride lots. Because of the uncertainty that this goal would be achieved, Impact TRANS-1 is considered significant and unavoidable with mitigation. A conclusion of a significant and unavoidable impact is not, as the commenter suggests, an underestimate of the project's impact.

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525-114	[ATT 3] General 1. An encroachment permit shall be required for all work within road right-of-way. (Note: Driveway encroachment permits are for flatwork only - all vertical features, including but not limited to fences, walls, private light standards, rocks, landscaping, and cobbles are not allowed in the right- of-way.)	DWR will obtain an encroachment permit for all work within San Joaquin County right-of-way prior to construction of any roadway, intersection, or project site improvement.
525-115	[ATT 3] Chapter 20 1. While the DEIR mentions improvements to various roads and bridges within the area, there is no mention of what entity would construct and deliver the improvements or how improvements would be maintained. There is also mention of new facilities as a part of the project, the delegation of maintenance and operation of these new facilities should be discussed in the DEIR.	The costs of improvements, including various roads and bridges, that are needed to construct the project are included in the total cost of the project and would be constructed by DWR-selected contractors. Prior to construction of these improvements, Geometric Approval Drawings would be developed by DWR for review, comment, refinement, and approval by San Joaquin County Department of Public Works. After construction of the improvements on public roads and bridges, these new and/or improved transportation facilities would be part of the transportation system serving San Joaquin County and maintained and operated by San Joaquin County Department of Public Works. Operations and maintenance of project-specific access roads would be the responsibility of DWR.
525-116	[ATT 3] Chapter 20 2. The project study area appears to be much larger than what is currently analyzed in the DEIR. The studied roads and intersections in Appendix A show that the DEIR only analyzed roads that are within the Sacramento-San Joaquin Delta. All impacted roads within the defined study area should be reviewed and addressed. Additionally, special attention should be paid to State Route 99, as it appears to have been omitted from this analysis and would likely be utilized by construction traffic (Page 19, Appendix A, Figure 20A-1 and Figure 20A-2).	As described in Chapter 20, Transportation, the study area evaluated for potential transportation impacts extends beyond the Sacramento–San Joaquin Delta (Delta) area. The vehicle miles traveled (VMT) study area for potential transportation impacts consists of the entire length of the home-based work trip to and from facility construction areas, including the regional State Highway System and local roadway segments that could be affected by construction-related and operations and maintenance employee traffic. Therefore, project-generated VMT that utilize the regional and local transportation system (including SR 99) are included in the VMT analysis.

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		Even though Level of Service (LOS) is no longer the primary analysis criteria for the CEQA document, the study segment analysis contained in Appendix 20A, Delta Conveyance 2020 Traffic Analysis, and Appendix 20C, Delta Conveyance 2040 Traffic Analysis, was developed based on potentially affected travel routes of construction workers and truck traffic delivering project materials to and from project features within the Sacramento-San Joaquin Delta. The Notice of Preparation and Scoping Process (January 2020) with the California Department of Transportation (Caltrans) identified a total of 66 Caltrans freeway and highway segments that were located adjacent to or within the alignments of the project alternatives. During this scoping process, Caltrans excluded SR 99 because they considered this parallel facility of I-5 to be beyond the area of potential effect.
525-117	[ATT 3] Chapter 20 3. The environmental impact of new facilities and road improvements are not properly addressed. As an example, a major road improvement for Bethany Reservoir Pumping Plant and Surge Basin includes installing a new bridge over Union Pacific Railroad tracks and Byron Highway. The DEIR must address the environmental lead-time and challenges anticipated with this type of planned construction (Pages 29 to 32).	Refer to Chapter 3, Description of Project and Alternatives, for a description of roadway improvements that would be implemented as part of the project. Additional information regarding these facilities and roadway improvements is available in the Engineering Project Reports and technical memoranda (Delta Conveyance Design and Construction Authority 2022g, 2022h). Contrary to the commenter's assertion, potential environmental impacts associated with these improvements were evaluated throughout the resource analyses of the EIR, and as necessary, mitigation measures were identified to reduce the effects of potentially significant impacts. An overview of the permits and coordination required for the project, including those related to roadway improvements, is provided in Chapter 1, Introduction.
525-118	[ATT 3] Chapter 20- 4. The DEIR should address all impacted roads in San Joaquin County in the traffic study including, but not limited to, Bethany Road, Corral Hollow Road, South Lammers Road,	Chapter 20, Transportation, analyzed VMT as required by CEQA Guidelines Section 15064.3, enacted pursuant to SB 743 and included all roadways that construction employees automobiles and construction employees trucks (i.e., pick-up and work trucks) would use based on the Delta Conveyance Engineering Project Reports (EPRs) (Delta Conveyance Design

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	Howard Road, Tracy Boulevard, South Reeves Road, Middle River Bridge, Roberts Road, South Klein Road, Bacon Island Road, West Lower Jones Road, Holt Road, Clifton Court Road, Bonnet Road, etc.	and Construction Authority 2022g, 2022h), as shown in the figure titled Transportation Study Area for the Delta Conveyance Project Alternatives. All roadways identified by the commenter were included in the transportation impact and VMT analysis presented in Chapter 20. The EPRs also included construction management and design requirements to reduce effects on the community from construction-related traffic on Delta roadways, including minor delta roadways in San Joaquin County similar to South Reeves Road and South Klein Road. A combination of transportation management plans (described in Mitigation Measure TRANS-1) and improvements to the transportation system would be developed in coordination with the State of California and San Joaquin County to reduce potential traffic safety hazards at key intersections and emergency access to Delta communities within San Joaquin County.
525-119	[ATT 3] Chapter 20 Additionally, the DEIR should ensure that truck routes to and from project locations are adequately researched as some turning movements along these routes would require widening at specific locations to allow for safe traffic movements for larger vehicles such as trucks.	Impacts TRANS-3 and TRANS-4 in Chapter 20, Transportation, address potential construction impacts as they relate to truck route access, roadway improvements, and emergency access to project construction sites. DWR considered the road and bridge conditions (and size) during the design process to determine whether improvements should be included in the project alternatives. Although the project alternatives incorporate considerable roadway, access road, bridge, and intersection improvements to reduce the potential for construction traffic safety hazards on haul routes and project feature site access roads, the volume of construction traffic at some study area locations has the potential to create traffic safety issues with resident and commuter traffic, recreational vehicles, and seasonal farming operations. A combination of transportation management plans (described in Mitigation Measure TRANS-1) and improvements to the transportation system would be developed in coordination with the State of California and San Joaquin County Department of Public Works to reduce potential traffic safety hazards at

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		key Delta roadways serving San Joaquin County.
525-120	[ATT 3] Chapter 20 5. There are major roadway improvements included for each of the alternatives, but the DEIR fails to indicate how the changes to the road would adequately accommodate the construction traffic and overall quality of the affected road.	The major roadway improvements included for each of the alternatives were developed in the Delta Conveyance Engineering Project Reports (EPRs) (Delta Conveyance Design and Construction Authority 2022g, 2022h). The EPRs include detailed construction management and design requirements to reduce effects on the community from construction-related traffic on Delta roadways. These limitations are intended to enhance public safety and reduce traffic congestion during construction of the project. Major road improvements were included in the conceptual design of the project alternatives. As explained in Chapter 20, Transportation, truck trips for construction of the project alternatives are included in the roadway segment and intersection analysis contained in Appendix 20A, Delta Conveyance 2020 Traffic Analysis, and Appendix 20C, Delta Conveyance 2040 Traffic Analysis. The analyses contained in these appendices include both automobile and trucks to aid in the understanding of potential major increases to traffic volumes on roadways and vehicle delay at intersections and development of improvements during the construction phase of the project with the State of California and local agencies. DWR has clarified the intent of road rehabilitation in Chapter 3, Description of Proposed Project and Alternatives, in the section titled Access Roads.
525-121	[ATT 3] Chapter 20- 6. The DEIR fails to identify any remediation work proposed after project completion to repair roads back to pre-project condition. The DEIR must address how the project intends to mitigate road deterioration due to heavy construction traffic.	After the completion of a project site construction, the condition of the access roads for each construction site will be analyzed, and remediation of roadways will be completed as needed to return the facility to the improved conditions that were constructed by DWR to improve these access roads prior to construction of the Delta Conveyance Project. Environmental Commitment EC-11 also requires construction contractors to protect and maintain all disturbed areas, including access roads. Site restoration and rehabilitation activities are accounted for in the equipment and vehicle inventory used to assess air quality and noise impacts. DWR

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		has clarified the intent of road rehabilitation in Chapter 3, Description of Proposed Project and Alternatives in the section titled Access Roads.
525-122	[ATT 3] Chapter 20- 7. The DEIR states that construction traffic will only use specific roads to minimize impacts, however, this mitigation is unenforceable. Additionally, requiring construction employees to use Park and Ride facilities, or carpool to and from the site is unlikely. This analysis also fails to consider employees who may be dropped off and/or picked up by someone else, which would generate a greater Vehicle Miles Traveled (VMT) (Page 29 and page 41).	The Delta Conveyance Engineering Project Reports (EPRs) (Delta Conveyance Design and Construction Authority 2022g, 2022h) include construction management and design requirements to reduce effects on the community from construction-related traffic on Delta roadways. These requirements are intended to enhance public safety and reduce traffic congestion during construction and would be included in the construction specification bid documents. These types of conditions are regularly used on construction projects, including those completed by the State of California. DWR is committed to enforcing these provisions. Under Mitigation Measure TRANS-1, DWR will be responsible for verifying that the transportation demand management (TDM) plans and traffic management plans (TMPs) are implemented prior to beginning construction at each project feature. If necessary, to minimize unexpected operational and safety related impacts or delays during construction, DWR will also be responsible for modifying the TDMs and/or the TMPs to reduce potential effects identified by the applicable transportation entities identified above throughout the duration of the contract. The scenario of a construction employee being dropped off and/or picked up by someone else would be considered carpooling and could reduce that construction worker's VMT for their home-based work trip. This would not change the TRANS-1 conclusion that all of the project alternatives would temporarily increase VMT per employee during construction of the Delta Conveyance Project facilities.
525-123	[ATT 3] Chapter 20 8. While the DEIR does mention that traffic conflicts and safety conditions can occur, it fails to describe the specific safety concerns that may be present. The DEIR should fully disclose	Please refer to Impacts TRANS-3 and TRANS-4 in Chapter 20, Transportation, which address potential construction impacts as they relate to access, roadway improvements, safety, and emergency access. A combination of transportation management plans (described in Mitigation Measure TRANS-1) and geometric design improvements to the

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	the safety hazards that would be created by the construction of new roads, the intersection of new roads with existing roads, and the increase of construction vehicles on existing roads and intersections. The DEIR should also include detailed mitigations to minimize any safety concerns identified (Pages 53 to 54).	transportation system would be developed and approved in coordination with the State of California and San Joaquin County Department of Public Works to reduce potential traffic safety hazards at key roadways and intersections.
525-124	[ATT 3] Chapter 20 9. Additionally, per the Office of Planning and Research's (OPR) Technical Advisory on Evaluating Transportation Impacts, a proposed project exceeding a level of 15 percent below existing regional VMT per employee may indicate a significant transportation impact. Chapter 20 only utilizes "home-based work VMT to determine whether the project alternatives would affect the environment by increasing the amount of commute miles that construction workers would drive in their automobiles (personal car or truck) to and from the project work sites daily when compared to the regional average of home-based work VMT per employee" (Page 23). The DEIR should explain why a 15 percent reduction is not utilized as the significance threshold for VMT.	The comment assertion that the Draft EIR does not justify the project VMT threshold is not supported by the information presented in Chapter 20, Transportation, in the section titled Thresholds of Significance. Please refer to responses to comments525-28 and 525-29 and Common Response 14, Transportation, regarding the VMT analysis and threshold of significance used in the EIR.
525-125	[ATT 3] Appendix A 1. Figure 20A-1 is unclear as the labels do not appear to be placed correctly. The DEIR should correct the figure and accompanying Table 20A-1 to match the labels and locations.	The Appendix 20A, Delta Conveyance 2020 Traffic Analysis, figure titled Existing 2020 Conditions-120 Roadway Segments has been corrected to be consistent with the location and numbers of roadway segments in the Appendix 20A table titled Roadway Study Segments Analyzed. The revision did not result in a new significant environmental impact, substantial increase in the severity of an environmental impact, or additional mitigation measures to which DWR was unwilling to commit.
525-126	[ATT 3] Please feel free to contact us with any questions or to discuss our comments further.	This information provides clarification on the submittal of the comment letter. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.

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525-127	[ATT 4] Per your request, I reviewed the Draft Environmental Impact Report ("Draft EIR") for the proposed Delta Conveyance Project published in July 2022 for public review by the California Department of Water Resources ("DWR") as the lead agency to meet the requirements of the California Environmental Quality Act ("CEQA"). [Footnote 1: DWR, Public Draft Environmental Impact Report Delta Conveyance Project, July 2022, prepared by ICF, Sacramento, CA, ICF 103653.0.003.] My comments focus on Draft EIR, Chapter 23, Air Quality and Greenhouse Gases and Alternative 5, the proposed project, though these comments are also relevant to other project alternatives with similar air quality and greenhouse gas implications.	This information describes the structure or organization of the comment letter. It is not a comment on the contents of the EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.
525-128	[ATT 4] My qualifications as an environmental expert include a doctorate in Environmental Science and Engineering from the University of California Los Angeles. I am a court-recognized expert and have prepared comments and testimony on air quality, public health, and global climate change in the environmental review process of numerous projects under CEQA, the National Environmental Policy Act ("NEPA"), and the federal and state Clean Air Acts, including for a number of large-scale development projects and specific plans (e.g., the Los Angeles World Airports Expansion Master Plan, the City of Sacramento Railyards Specific Plan, and the City of Vacaville General Plan). I previously commented on the draft and recirculated draft environmental impact report/statement for the Bay Delta Conservation Plan/California WaterFix project, the predecessor to the water conveyance project presented in the Draft EIR at hand. My résumé is attached to this letter.[see ATT 4 of ATT 1]	This information describes the background of the individual commenter. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.

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525-129	[ATT 4] As discussed below, the Draft EIR does not meet the CEQA requirements for an informative and reliable document. Specifically, the Draft EIR is poorly documented, and its quantitative analyses are not supported. (See Comment II and III below). [see comments 132 through 149] Further, the Draft EIR substantially underestimates emissions of criteria pollutants and their precursors and consequently fails to identify and mitigate significant impacts. (See Comment IV.) [see comments 150 through 163] Because the Draft EIR's health risk assessment relies on these underestimates, it consequently underestimates assessed health risks and likely fails to identify significant cancer risks. (See Comment V.) [see comment 164] Finally, the Draft EIR substantially underestimates greenhouse gas emissions and consequently fails to adequately mitigate the Project's significant contribution to impacts on climate change. (See Comment VI.)[see comments 165 through 188]	This information expresses opinions of the commenter based on comments provided in an attachment to letter 525. Please see responses to comments 525-132 through 525-149 and Common Response 15, Air Quality and Greenhouse Gases, for discussion on the adequacy of information provided by DWR to support public review of the EIR air quality analysis. See also Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the length and complexity of the EIR. Refer to responses to comments 525-153 through 525-163 and Common Response 15 regarding technical methods for the estimation of criteria pollutants. Refer to response to comment 525-164 regarding the estimation of potential health risks from construction generated emissions. See responses to comments 525-166 through 525-188 and Common Response 15 regarding technical methods for the estimation of GHG emissions. The information contained in the individual responses and Common Response 15 does not support the assertions by the comment that the EIR underreports air quality and GHG emissions or is otherwise inconsistent with CEQA requirements for the analysis and disclosure of GHG impacts. The analysis contained in Chapter 23, Air Quality and Greenhouse Gases, and supporting appendices meets the CEQA requirement to make a good-faith effort at full disclosure of potential air quality and GHG impacts of the project.
525-130	[ATT 4] I. Project Description The proposed project and alternatives evaluated in the Draft EIR involve the construction and operation of new conveyance facilities for the movement of water entering the Sacramento-San Joaquin Delta ("Delta") from the Sacramento Valley watershed to the existing State Water Project ("SWP") and, potentially, to Central Valley Project ("CVP") facilities in the	This comment does not raise a significant environmental issue relating to the proposed project or address the adequacy, accuracy, or completeness of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.

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	south Delta, which would result in a dual- conveyance system. The Draft EIR analyzes environmental impacts for the no project alternative and nine project alternatives and identifies Alternative 5, the Bethany Reservoir Alignment, as the proposed project ("Project"). [Footnote 2] The Draft EIR also analyzes related amendments to the long-term water supply contracts that may be needed. [Footnote 3] The Project's new water conveyance facilities would divert up to 6,000 cubic feet per second ("cfs") of water from two new north Delta intakes and convey it via a single tunnel on an eastern alignment directly to a new pumping plant and aqueduct complex between Byron Highway and Mountain House Road near Mountain House in the south Delta, discharging it into the Bethany Reservoir for delivery to existing SWP export facilities. This complex is called the Bethany Complex and is described in detail in Draft EIR, Chapter 3, Project Description, Section 3.14. The Project would operate the new conveyance facilities in conjunction with SWP's existing south Delta export facilities at Clifton Court Forebay, creating a dual conveyance system. Water could be diverted from the new diversion facilities in the north Delta, the existing SWP south Delta export facilities, or both.[Footnote 4] Figure 1 shows the Project alignment and major facilities. The Project would be constructed within parts of three air basins, the Sacramento Valley Air Basin ("SVAB"), the San Francisco Bay Area Air Basin ("SFBAAB"), and the San Joaquin Valley Air Basin ("SJVAB"), which are under the jurisdiction of four air districts: the SVAB under the Sacramento Metropolitan Air Quality Management District ("SMAQMD"), the SFBAAB	

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	under the Bay Area Air Quality Management District ("BAAQMD"), and the SJVAB under joint jurisdiction of the San Joaquin Valley Air Pollution Control District ("SJVAPCD") and the Yolo-Solano Air Quality Management District ("YSAQMD"). [Footnote 2] Draft EIR, p. 3-6. [Footnote 3] Draft EIR, p. 3-1. [Footnote 4] Draft EIR, p. ES-13.	
525-131	[ATT 4, Exhibit 1: Figure 1 from the Draft EIR on page ES-23 of project alignment and major facilities.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter. DWR has reviewed all comments and will consider all comments in its decision-making process.
525-132	[ATT 4] II. The Draft EIR Fails to Provide Supporting Documentation for Its Analyses of Air Quality and Greenhouse Gases DWR's Project website, which posts the Draft EIR, appendices, and other supporting documents, fails to provide the supporting documentation that forms the basis for Draft EIR's conclusions presented in Chapter 23, Air Quality and Greenhouse Gases, including: • Spreadsheets used to calculate criteria pollutant and precursor and greenhouse gas emissions from heavy-duty off-road equipment, motor vehicles, locomotives, marine vessels, electricity consumption, circuit breakers, striping, paving, demolition, land clearing, conveyance transfer, stockpile wind erosion, truck and railcar loading, concrete batching, wastewater treatment, helicopters, etc. per the emission calculation methodology described in Draft EIR, Appendix 23A Mass Emissions Estimation Methodology, Section 23A.1 Construction;	The EIR contains all the necessary information to evaluate the adequacy of the technical methods used to quantify air quality and GHG emissions and health risks. DWR provided supporting air quality calculation spreadsheets upon public request during the Draft EIR public review period. See Common Response 15, Air Quality and Greenhouse Gases, for additional discussion on the adequacy of information provided by DWR to support public review of the EIR air quality analysis. Please also see Common Response 2, Public Outreach Activities, for information regarding distribution of documents and materials. The bullet identifies spreadsheets used to calculate criteria pollutant emissions from project construction, which were provided to the commenter promptly upon request, as discussed further in response to comment 525-139.

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525-133	[ATT 4] II. The Draft EIR Fails to Provide Supporting Documentation for Its Analyses of Air Quality and Greenhouse Gases DWR's Project website, which posts the Draft EIR, appendices, and other supporting documents, fails to provide the supporting documentation that forms the basis for Draft EIR's conclusions presented in Chapter 23, Air Quality and Greenhouse Gases, including: • Spreadsheets used to calculate criteria pollutant and precursor and greenhouse gas emissions from maintenance activities, operational SWP pumping and displaced purchases of CVP electricity usage per the methodology described in Draft EIR, Appendix 23A Mass Emissions Estimation Methodology, Section 23A.2 Operations & Maintenance;	Please see Common Response 15, Air Quality and Greenhouse Gases, regarding the distribution of documents and materials and for additional discussion on the adequacy of information provided by DWR to support public review of the EIR air quality analysis. Please also see Common Response 2, Public Outreach Activities, for information regarding distribution of documents and materials. The bullet identifies spreadsheets used to calculate criteria pollutant emissions from project maintenance, which were provided to the commenter promptly upon request, as discussed further in response to comment 525-139.
525-134	[ATT 4] II. The Draft EIR Fails to Provide Supporting Documentation for Its Analyses of Air Quality and Greenhouse Gases DWR's Project website, which posts the Draft EIR, appendices, and other supporting documents, fails to provide the supporting documentation that forms the basis for Draft EIR's conclusions presented in Chapter 23, Air Quality and Greenhouse Gases, including: • Spreadsheets and input/output modeling files for determining health risks and localized criteria pollutant modeling as described in Draft EIR, Appendix 23C Health Risk Assessment and Ambient Air Quality Analysis Methodology	Please see Common Response 15, Air Quality and Greenhouse Gases, regarding the distribution of documents and materials and for additional discussion on the adequacy of information provided by DWR to support public review of the EIR air quality analysis. Please also see Common Response 2, Public Outreach Activities, for information regarding distribution of documents and materials. The bullet identifies modeling files for health risks and localized criteria pollutant concentrations, which were provided to the commenter promptly upon request, as discussed further in response to comment 525-139.

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525-135	[ATT 4] II. The Draft EIR Fails to Provide Supporting Documentation for Its Analyses of Air Quality and Greenhouse Gases DWR's Project website, which posts the Draft EIR, appendices, and other supporting documents, fails to provide the supporting documentation that forms the basis for Draft EIR's conclusions presented in Chapter 23, Air Quality and Greenhouse Gases, including: • Spreadsheets and input/output modeling files for criteria pollutant health impact assessment as described in Draft EIR, Appendix 23D Criteria Pollutant Health Impact Assessment Methodology. [Footnote 5: See DWR, Delta Conveyance Project, Draft Environmental Impact Report; available at: https://www.deltaconveyanceproject.com/read-the-document.]	Please see Common Response 15, Air Quality and Greenhouse Gases, regarding the distribution of documents and materials and for additional discussion on the adequacy of information provided by DWR to support public review of the EIR air quality analysis. Please also see Common Response 2, Public Outreach Activities, for information regarding distribution of documents and materials. The bullet references modeling files for the photochemical analysis and assessment of community health effects. Photochemical modeling outputs were not requested by the commenter's legal representation or any other entity that submitted a request for air quality analysis files.
525-136	[ATT 4] Access to this supporting documentation [including spreadsheets used to calculate criteria pollutant and precursor and greenhouse gas emissions as well as spreadsheets and input/output modelling files for health risk assessment and localized criteria pollutant modelling] is integral to any meaningful independent review and verification of Draft EIR the air quality, health risk, and greenhouse gas analyses presented in Chapter 23 Air Quality and Greenhouse Gases; without access, the reviewer's only choice is to accept the presented results (e.g., estimates of emissions or additional cancer risk) at face value.	The information expresses an opinion held by the commenter. The EIR was prepared to be accessible to the general public, consistent with CEQA requirements. Supporting documentation is of public record and was available to commenter upon request. See Common Response 15, Air Quality and Greenhouse Gases, for discussion on the adequacy of information provided by DWR to support public review of the EIR air quality analysis. Please also see Common Response 2, Public Outreach Activities, for information regarding distribution of documents and materials.
525-137	[ATT 4] Most disconcerting is the fact that Draft EIR does not provide adequate support for the assumptions that go into calculating	Please see Common Response 15, Air Quality and Greenhouse Gases, regarding the distribution of documents and materials and for additional discussion on the adequacy of information provided by DWR to support

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	emissions and modeling impacts on air quality and associated health risks. The Draft EIR provides only the equations it used to estimate emissions in Appendix 23A Mass Emissions Estimation Methodology and engineering and activity inputs in Appendix 23B Air Quality and GHG Analysis Activity Data. However, the Draft EIR does not provide the emission factors it relied upon, for example, for heavy-duty equipment, locomotives, marine vessels, etc. Instead, the Draft EIR only generically refers to where it obtained the respective emission factors but does not provide the actual emission factors, which in some cases were "adjusted" without explaining what the adjustments are. [Footnote 6: See Draft EIR, Appx. 23A Mass Emissions Estimation Methodology.] As discussed in my comments below, the Draft EIR's assumptions for several emission factors are incorrect and result in substantial underestimates of emissions.	public review of the EIR air quality analysis. See Common Response 15 and responses to comments 525-153 through 525-163 regarding technical methods for the estimation of construction emissions, including emissions from construction equipment. As described in these individual responses and Common Response 15, the EIR analysis does not underestimate emissions from diesel-powered off-road construction equipment.
525-138	[ATT 4] In my extensive experience with the public review process under CEQA, this documentation [including spreadsheets used to calculate criteria pollutant and precursor and greenhouse gas emissions as well as spreadsheets and input/output modelling files for health risk assessment and localized criteria pollutant modelling] is routinely provided in appendices and, in the few cases it was unintentionally omitted, was supplied upon request without delay. It is not acceptable that an environmental review document of this magnitude (several Gigabytes of information on tens of thousands of pages) that analyzes a long-term project with implications as far reaching and impacts a severe as the Project does not provide this essential information to the public and reviewing agencies, including the affected air districts.	Please see Common Response 15, Air Quality and Greenhouse Gases, for discussion on the adequacy of information provided by DWR to support public review of the EIR air quality analysis. Refer to response 525-139 for additional discussion on the specific request made by the commenter.

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525-139	[ATT 4] Upon request, DWR provided a set of spreadsheets and modeling files in mid-August 2022. However, most spreadsheets relating to construction and operational and maintenance emissions were password-protected, did not allow for examination of formulas, and displayed several reference errors (#REF!) instead of calculation results. In other words, DWR provided spreadsheets that could not be used to verify the results presented in the Draft EIR's summary tables for the affected air districts presented in Chapter 23 Air Quality and Greenhouse Gases. After several additional requests, DWR provided some, but not all, of the requested spreadsheets on November 9, 2022. The provided files relate to Project construction emissions; DWR did not provide accessible spreadsheets for Project emissions during operation and maintenance. Again, the provided spreadsheets were password-protected, this time with formulas and results visible, but not allowing for cross-referencing of formulas, sorting, filtering, or any other capabilities that would facilitate review.	DWR received several requests for the air quality calculation spreadsheets and promptly replied to each. The specific request from the commenter's legal representation was made on August 4, 2022, and was fulfilled by DWR on August 11, 2022 (one week). As noted by the commenter, the files were password protected. The password protection in the Excel files secured the proprietary architecture and structure of the computer software. The foundational formulas used to quantify emissions for the air quality mass emissions analysis are disclosed in Appendix 23A, Mass Emissions Estimation Methodology. Activity inputs (e.g., equipment operating hours) for every phase of construction are provided in Appendix 23B, Air Quality and GHG Analysis Activity Data. Accordingly, the documentation made available for public review during the public comment period for the EIR provided full disclosure and transparency of the air quality technical method, inputs, and assumptions, and thus was sufficient to conduct a meaningful review of the analysis. With respect to the reference errors noted by the commenter, these were inadvertently rendered by Excel when the files were extracted from their native location and packed for delivery to the commenter. DWR corrected these reference errors in a secondary submission to the commenter within the extended public review period such that there was adequate time for the commenter to review the information.
525-140	[ATT 4] My review of the provided spreadsheets for construction emissions shows that they contain multiple incorrect assumptions, for example, for emission factors, and consequently underestimate emissions (see Comments IV.A.1 and IV.A.2 below [see comments 152 through 163]), demonstrating how important it is to subject this information to public review.	Please see responses to comments 525-153 through 525-163 and Common Response 15, Air Quality and Greenhouse Gases, regarding technical methods for the estimation of construction emissions, including emissions from construction equipment. Common Response 15 presents revisions made to the air quality analysis for the Final EIR in response to public comments and resulting from other technical refinements. None of revisions described in Common Response 15, or made in Chapter 23, resulted in a new significant environmental impact, substantial increase in the severity of an environmental impact, or required additional mitigation measures to which DWR was unwilling to

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		commit. DWR provided supporting air quality calculation spreadsheets upon public request during the Draft EIR public review period. See Common Response 15 for additional discussion on the adequacy of information provided by DWR to support public review of the EIR air quality analysis.
525-141	[ATT 4] Further, unlike most CEQA documents, the Draft EIR does not provide any tables for the contribution of individual Project phases, activities, or equipment to support the summary tables with total estimated emissions in Section 23.3.3 Impacts and Mitigation Approaches. Such supporting tables should include, for example, emission estimates for construction equipment, haul trucks, locomotives, marine vessels, etc. For operations, supporting tables would include emission estimates for electricity demand, helicopters, maintenance activities, etc. Without such supporting tables, the reviewer has no way to know how much individual phases, activities, or equipment contribute to total emissions, and whether proposed mitigation or environmental commitments properly address these emissions. While such tables do not necessarily have to be provided within the Draft EIR's main body, although they often are, they must at the very least be provided in appendices for reviewers to verify that the Draft EIR summarized total emissions correctly.	The EIR air quality chapter analyzes a construction period of up to 14 years, depending on the alternative, and over 200 discrete features across nine project alternatives covering three air districts and basins. Emissions generated by construction of these features may be generated by up to 14 sources. Including tabular outputs by source, feature, alternative, and year in the EIR would have required hundreds if not thousands of pages of tables, which would have reduced the navigability of the EIR. Rather than convoluting the EIR with these data tables, DWR released the air quality calculation spreadsheets to all parties that requested them during the EIR comment period. These spreadsheets provide the emission results by source and feature, as requested by the commenter.
525-142	[ATT 4] III. The Draft EIR's Comparison of Impacts on Air Quality and Greenhouse Gas Emissions by Alternative Fails to Fulfill its	The commenter paraphrases and quotes content from the Executive Summary of the EIR. As described in the Executive Summary and quoted by the commenter, the table titled Comparison of Impacts on Air Quality and

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	Intended Purpose The Draft EIR's Executive Summary attempts to provide a comparison of impacts on air quality (due to emissions of criteria pollutants and precursors) and greenhouse gas emissions for the nine analyzed alternatives (1, 2a, 2b, 2c, 3, 4a, 4b, 4c, and 5) in Table ES-21. (Chapter 23, Air Quality and Greenhouse Gases provides the same content in Table 23-0. [Footnote 7: Draft EIR, pp. 23-5 and 23-6.]) The Draft EIR, page ES-97, explains the content of Table ES-21 as follows: "Table ES-21 provides a summary comparison of impacts on air quality and GHGs by alternative. The table presents the CEQA findings after all mitigation is applied. If applicable, the table also presents quantitative results after all mitigation is applied. This table also provides information on the magnitude of the most pertinent and quantifiable impacts on air quality and GHGs that are expected to result from construction and operation and maintenance (O&M) of the alternatives. Impacts to consider are to the extent construction and maintenance emissions of ozone precursors and criteria pollutants exceed local air district thresholds which are designed to achieve regional attainment with federal and state ambient air quality standards. Individuals residing near the water conveyance alignment may also be exposed to increased health risks from air pollution resulting from construction and long-term O&M, including changes in State Water Project (SWP) and Central Valley Project (CVP) pumping operations, would generate GHG emissions and contribute to global climate change." (The same explanation is provided in Chapter 23 Air Quality and Greenhouse Gases for Table 23-0 and all comments below	Greenhouse Gases by Alternative in the Executive Summary and the table titled Comparison of Impacts on Air Quality and Greenhouse Gases by Alternative in Chapter 23, Air Quality and Greenhouse Gases, present quantitative information for selected air quality indicators; they do not provide an exhaustive presentation of emissions results. The commenter is referred to Chapter 23, Impacts AQ-1 through AQ-4, for a full summary of construction and operational emissions. Please also see Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the length and complexity of the EIR.

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	are equally applicable to this table.) Table ES-21 fails to fulfill its intended purpose, i.e., to provide the general public with the major takeaways of the Draft EIR's analyses of the individual impacts and an easily accessible comparison across alternatives. Instead, the information as presented is incomprehensible to the general public (and even subject matter experts) and incomplete, as discussed below [see comments 143 through 149]. Some of the following comments use Alternative 5, the proposed project, as a specific example to explain the shortcomings of the Draft EIR's presentation, but these comments are equally applicable to all other project alternatives.	
525-143	[ATT 4] First, Table ES-21 provides quantitative results for daily NOx emissions from construction during operation and maintenance ("O&M") in pounds per day ("lbs/day"); modeled 24-hour PM10 concentrations from construction in micrograms per cubic meter ("µg/m3") (note: the Draft EIR incorrectly specifies "µ/m3"); additional cancer risk per million from construction and standby engine generator testing; and net additional greenhouse gas emissions in metric tons carbon dioxide-equivalents ("metric tons CO2e") from construction, operation and maintenance, and land use change. The Draft EIR does not clarify whether the presented quantitative results relate to "quantitative results after all mitigation is applied" or the "magnitude of the most pertinent and quantifiable impacts."	The comment paraphrases content from the Executive Summary of the EIR. The Executive Summary discloses that all information presented in the table titled Comparison of Impacts on Air Quality and Greenhouse Gases by Alternative in the Executive Summary is after mitigation is applied. The Executive Summary also discloses that quantitative results are only presented for selected indicators of air quality for each impact. See response to comment 525-147 for additional information on the selection of indicators. Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the length and complexity of the EIR.
525-144	[ATT 4] Second, the quantitative results presented in Table ES-21 are meaningless to the general public because the table fails to put these quantitative results in perspective. For example, for	The information presented in the Executive Summary does not support the commenter's assertions that the table titled Comparison of Impacts on Air Quality and Greenhouse Gases by Alternative in the Executive Summary fails to provide meaningful information. Notably, the referenced table

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	Impact AQ-1: Result in Impacts on Regional Air Quality within the Sacramento Metropolitan Air Quality Management District, Table ES-21 provides maximum daily NOx emissions from any construction year in the SMAQMD for Alternative 5 of 591 lbs/day. A reviewer who turns to the Draft EIR's Executive Summary as a quick way to understand the Project's impacts on air quality during construction or to compare alternatives is left in the dark about what to make of this emission estimate. Is this a high value and of concern or is it low? Is this the value before or after implementation of mitigation and, if the former, is it significant before implementation of mitigation? There is no way to know from the summary table. Instead, the reviewer must comb through the 203-page Chapter, 23 Air Quality and Greenhouse Gases and locate Table 23-22 on page 23-71 to understand that these are maximum daily NOx emissions before implementation of mitigation (in calendar year 7). Then, as the second step, the reviewer must find the applicable threshold of significance for construction emissions in the SMAQMD (in the bottom row of Table 23-22 or in Section 23.3.2.2, Table 23-9, page 23-49), to understand the significance of these emissions. This threshold is 85 lbs/day. Only then, will the reviewer realize that maximum daily unmitigated NOx emissions during construction of Alternative 5 are estimated at 7 times the threshold of significance established by the SMAQMD to protect the health of residents under its jurisdiction. (Note that every air district has its own set of significance thresholds, making cross-comparison of alternatives even more challenging.) Similarly, Table ES-21 provides maximum additional cancer risk of 8 per million from any construction year in the SMAQMD for Alternative 5. Again, without having to refer to Chapter 23 Air	provides qualitative impact conclusions for all resources and thresholds of significance addressed in the EIR. Please see response to comment 525-143 regarding this table and the information conveyed in this table, as well as Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the length and complexity of the EIR. The commenter is referred to Chapter 23, Air Quality and Greenhouse Gases, for a full presentation of air quality impacts, including the analysis related to potential cancer risks fully described in Impact AQ-6.

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	Quality and Greenhouse Gases to determine the applicable significance threshold, 10 in one million, there is no way for the reviewing public, including "affected individuals near the water conveyance alignment," to know what this means for their health. As such, the mere presentation of quantitative results without providing any context provides no additional value to the information presented in Executive Summary Table ES-2, Summary of Delta Conveyance Project Impacts and Mitigation Measures on page ES-44. DWR should revise Table ES-21 to identify the mitigation status of the quantitative results it presents and include the applicable thresholds of significance or find other ways to provide context.	
525-145	[ATT 4] Third, Table ES-21 presents only CEQA conclusions (LTS = less than significant or SU = significant and unavoidable), i.e., after implementation of mitigation but does not identify whether the impacts were significant before (without) mitigation. This presentation fails to provide adequate information. Typically, summary tables in CEQA documents present impact findings before and after implementation of the proposed mitigation and to aid the reviewer in understanding the proposed mitigation effectiveness. For example, for criteria pollutants and precursors this typically includes 1) quantifying emissions before implementation of the proposed mitigation; 2) determining the impact conclusion before implementation of the proposed mitigation by comparison to a threshold of significance; 3) quantifying the emission reductions provided by the proposed mitigation; 4) quantifying the remaining emissions after implementation of the proposed mitigation; and 5) determining the CEQA conclusion. DWR should revise	The information presented in the Executive Summary is compliant with CEQA Guidelines Section 15123, which in relevant part requires a brief summary of each significant effect with proposed mitigation measures and alternatives that would reduce or avoid the effect. The commenter requests that the table titled Comparison of Impacts on Air Quality and Greenhouse Gases by Alternative in the Executive Summary be revised to present impact conclusions before and after mitigation. This is not the purpose of the table titled Comparison of Impacts on Air Quality and Greenhouse Gases by Alternative in the Executive Summary. As explained in the Executive Summary, the purpose of this table is to present selected quantitative results after all mitigation is applied to enable a comparison of impacts across project alternatives. The commenter is referred to the table titled Summary of Delta Conveyance Project Impacts and Mitigation Measures in the Executive Summary for a summary of impact conclusions before and after mitigation.

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	Executive Summary Table ES-21 to resolve this deficiency. There are several ways this information could be presented. Table 1 below [See ATT 4, Exhibit 2, comment 146], provides one example for maximum daily Nox emissions during construction. (Note: Table 1 displays the results provided by the Draft EIR in Tables 23-14 and 23-22 for the SMAQMD; this does not imply that I agree with the Draft EIR's emission estimates, significance findings, or CEQA conclusions.)	
525-146	[ATT 4, Exhibit 2: Example revised presentation for Table ES-21 for maximum daily NOx emissions during construction (filled in for Alternatives 1 and 5 and SMAQMD)]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-147	[ATT 4] Fourth, review of Chapter 23, Air Quality and Greenhouse Gases shows that maximum daily PM10 emissions during construction would exceed the thresholds of significance established by the SMAQMD and SJVAPCD (Draft EIR, Tables 23-22 and 23-32). Yet, the summary tables for Impacts AQ-1 (SMAQMD) and AQ-2 (SJVAPCD) do not provide quantitative results for maximum daily PM10 emissions (only for maximum daily NOx emissions) and the Draft EIR provides no explanation why these significant PM10 emissions are not considered a "pertinent and quantifiable impact" for inclusion in the summary tables.	As described in the Executive Summary, the table titled Comparison of Impacts on Air Quality and Greenhouse Gases by Alternative presents quantitative information for selected air quality indicators. The indicators were selected based on the availability of quantifiable data and severity of predicted impacts presented in Chapter 23, Air Quality and Greenhouse Gases. For example, nitrogen oxide (NO_X) emissions are presented as an indicator of regional air quality impacts (Impacts AQ-1 through AQ-4) because all project-area air districts have established at least one NOx threshold and the EIR air quality analysis indicates that those thresholds would be exceeded during construction in three of the four air districts prior to mitigation. Impacts of all other pollutants under Impacts AQ-1 through AQ-4 would be of a lesser geographic scope, either due to the magnitude of estimated emissions or provision of air district threshold. For example, as noted by the commenter, PM10 emissions during construction would exceed thresholds in only two of the four project-area air districts, depending on the alternative. Refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, for additional discussion regarding the length and complexity of the EIR.

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525-148	[ATT 4] Fifth, Executive Summary, Table ES-21, Impact AQ-5: Result in Exposure of Sensitive Receptors to Substantial Localized Criteria Pollutant Emissions, provides modeled maximum 24-hour PM10 concentrations in ambient air resulting from Project construction emissions. This presentation is deceptive. Rather than providing total maximum modeled 24-hour PM10 concentrations, i.e., including existing background concentrations of the pollutant, the Draft EIR provides maximum modeled 24-hour PM10 concentrations above (minus) the applicable threshold of significance, i.e., the California Ambient Air Quality Standard ("CAAQS"). Executive Summary Table ES-21 does not point this out; this only becomes clear when reviewing the detailed tables in Chapter 23 Air Quality and Greenhouse Gases, section Impact AQ-5. People do not inhale ambient air pollutant concentrations above the CAAQS, but breathe in, and experience health effects from, total ambient air pollutant concentrations including background concentrations. As such, the information as presented is deceptive.	The presentation of coarse particulate matter (PM10) concentrations in table titled Comparison of Impacts on Air Quality and Greenhouse Gases by Alternative in the Executive Summary is consistent with applicable thresholds for the local air quality study area. Background concentrations of PM10 at several locations within the local air quality study area exceed the 24-hour PM10 ambient air quality standard. Because the background PM10 concentrations already exceed the standard, adding them to the modeled project contribution would not provide any meaningful information to evaluate if the project would contribute significantly to existing air pollution. Accordingly, in areas where background concentrations already exceed the ambient standard, the analysis compares the maximum incremental project contribution to the applicable significant impact level established by the EPA (see Chapter 23, Air Quality and Greenhouse Gases). Table titled Comparison of Impacts on Air Quality and Greenhouse Gases by Alternative in the Executive Summary clearly labels the PM10 concentrations presented in the table as maximum project values and is thus not deceptive. As explained above, presenting total ambient PM10 concentrations, as recommended by the commenter, would mask the project-level contribution to existing localized air quality impacts.
525-149	[ATT 4] Finally, review of Executive Summary Table ES-21 would be much aided by additional formatting, including, for example, separating impacts by thicker borders and indicating significant and unavoidable impacts in bold typeface ("SU"). Executive Summary Table ES-2. Summary of Delta Conveyance Project Impacts and Mitigation Measures is illegible without magnifying glasses and should be presented in larger font size for greater accessibility by the public.	The comment provides formatting recommendations and does not raise a significant environmental issue relating to the project. The EIR complies with applicable accessibility laws, including Assembly Bill 434 and WCAG 2.1 AA.

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525-150	[ATT 4] IV. Impacts on Air Quality due to Project Emissions of Criteria Pollutants and Precursors Are Significant and Not Adequately Mitigated The Draft EIR evaluates the significance of engine exhaust emissions of criteria pollutants and their precursors, including reactive organic gases ("ROG") and nitrogen oxides ("Nox"), which are both ozone precursors, carbon monoxide ("CO"), particulate matter equal to or smaller than 10 micrometers ("PM10"), particulate matter equal to or smaller than 2.5 micrometers ("PM2.5") and fugitive dust emissions of PM10 and PM2.5 by affected air district. [Footnote 8: See Draft EIR, Impacts AQ-1 through AQ-4.] As discussed below [see comments 151 through 163], the Draft EIR substantially underestimates Project construction emissions by a) misinterpreting SJVAPCD's guidance regarding the calculation of daily emissions; and b) making incorrect assumptions for exhaust emissions from heavy-duty diesel-powered construction equipment.	This information summarizes multiple assertions presented in individual comments from the letter. Please see response to comment 525-151 for discussion on SJVAPCD's AAQA trigger. Please see responses to comments 525-153 through 525-163 and Common Response 15, Air Quality and Greenhouse Gases, regarding technical methods for the estimation of criteria pollutants, including exhaust emissions from construction equipment.
525-151	[ATT 4] IV.A The Draft EIR Underestimates Daily Construction Emissions for the SJVAPCD The Draft EIR, Table ES-21 (and Table 23-0), presents maximum daily emissions from any construction year for the SMAQMD, BAAQMD, and YSAQMD; for the SJVAPCD, the Draft EIR provides maximum average daily emissions from any construction year. Table ES-21 does not provide an explanation for this inconsistent presentation of daily construction emissions. One must dig deep into the details of the Draft EIR to find an explanation for this discrepancy.	Please refer to response to comment 525-143 regarding information contained in the table titled Comparison of Impacts on Air Quality and Greenhouse Gases by Alternative in the Executive Summary, as well as Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the length and complexity of the EIR. The EIR correctly applies SJVAPCD's guidance for calculating daily emissions for comparison to their ambient air quality analysis (AAQA) trigger. As excerpted by the commenter, SJVAPCD's (2018:3) guidance states "emissions should be calculated on a pollutant-by-pollutant basis by calculating the maximum potential to emit on a daily basis utilizing project-

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	In Appendix 23A, Mass Emissions Estimation Methodology, Section 23A.1.7, Daily and Annual Emissions Estimates, page 23A-24, the Draft EIR provides: "The analysis assumes that project construction would occur over multiple phases. Daily criteria pollutant and GHG emissions generated by construction of each phase were quantified using the methods described above in Section 23A.1.4, Emissions Estimation. The daily estimates were converted to annual totals based on the detailed construction schedule and identified maximum daily emissions, based on concurrent construction activity, within the BAAQMD, YSAQMD, and SMAQMD, consistent with air district requirements. The highest daily emissions in each construction year were selected as the peak day for analysis purposes. This approach is conservative and based on available information; therefore, it is not necessarily representative of actual daily emissions that would occur during the construction period. Average daily emissions per year in the SJVAPCD were calculated by dividing annual emissions by the number of working days per year, consistent with SJVAPCD guidance (2018b:3)." And in Footnotes b and e to Tables 23-24 through 23-32, in Chapter 23, Air Quality and Greenhouse Gases, which support the emission estimates presented in Table ES-21, the Draft EIR provides with respect to average daily construction emissions in the SJVAPCD: b Presents the average emissions estimate during a single day of construction in each year. Average emissions are	specific information where available." The commenter is incorrectly relating "maximum potential to emit" to a "maximum daily emissions analysis" where emissions from overlapping construction phases are added together. Consistent with the policy language, construction emissions were calculated considering the "maximum potential" for equipment and vehicles to emit on each day of activity over the course of a year. The resulting emissions are then annualized considering the construction schedule and presented in terms of pounds per day. Regardless of presentation, the AAQA is not used as the basis for significance of any air quality impact in the EIR. As discussed in Chapter 23, Air Quality and Greenhouse Gases, and consistent with SJVAPCD (2015:80) guidance, the significance of regional air quality impacts is assessed by comparing modeled mass emissions to SJVPACD's annual thresholds. The significance of localized air quality impacts is assessed by comparing modeled pollutant concentrations to the federal and state ambient air quality standards or significant impact levels, as appropriate. The SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts (2015:94) recommends the AAQA trigger only be used as an indicator for when an AAQA should be conducted. The EIR goes above and beyond this recommendation and conducts an AAQA for all localized criteria pollutants (PM10, PM2.5, CO, SO_2, and NO_2) regardless of whether emissions exceed the AAQA trigger of 100 pounds per day. Accordingly, the EIR's analysis and disclosure of potentially significant regional and localized air quality impacts is valid and consistent with air district guidance.

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	presented in SJVAPCD (rather than maximum emissions), consistent with (San Joaquin Valley Air Pollution Control District 2018a:3) guidance for correct application of its 100-pound-per-day AAQA [ambient air quality assessment] screening criteria. e The 100-pound-per-day threshold is a screening-level threshold to help determine whether increased emissions from a project would cause or contribute to a violation of the CAAQS [California ambient air quality standard] or NAAQS [national ambient air quality standard]. Projects with emissions below the threshold would not be in violation of the CAAQS or NAAQS. Projects with emissions above the threshold would require an AAQA to confirm this conclusion (San Joaquin Valley Air Pollution Control District 2015a:93). In developing the annual thresholds, SJVAPCD considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project- level thresholds would be cumulatively considerable.[Footnote 9: Draft EIR, pp. 23-80 through 91.] However, review of the cited SJVAPCD guidance, Project Ambient Air Quality Analysis Applicability Determination under CEQA, shows that the Draft EIR's interpretation is incorrect. SJVAPCD's guidance for calculating construction emissions reads as follows:[Footnote 10: SJVAPCD, Project Ambient Air Quality Analysis Applicability Determination under CEQA, APR-2030, June 12, 2018; available at: http://www.valleyair.org/policies_per/Policies/APR-2030.pdf.] "Construction Emissions The daily construction emissions should be calculated on a pollutant-by-pollutant basis by calculating the maximum	

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	potential to emit on a daily basis utilizing project-specific information where available, and it should include on-site emissions from construction emission sources. If project-specific information is not readily available, the daily construction emissions may be calculated by dividing the total construction emissions by the total days the construction will occur on, including on-site emissions from construction emission sources." SJVAPCD's guidance clearly states that the maximum potential to emit on a daily basis should be calculated where project-specific information is available, which is the case here. The guidance only allows for calculating average daily construction emissions where "project-specific information is not readily available." Here, project- specific information is readily available. For example, the Draft EIR relies on a detailed construction schedule, including the start date, end date, working days, and days per week for each of the many individual construction phases, [Footnote 11: Draft EIR, Appx. 23B, Table 23B-3.] and detailed equipment lists, including horsepower, equipment hours per day, load factors, etc.[Footnote 12: Draft EIR, Appx. 23B, Tables 23B-4 through 23B-11.] to calculate emissions during Project construction. (These assumptions are presented in the 500-page Appendix 23B.) Thus, project-specific information is readily available and the Draft EIR should have calculated maximum daily emissions in comparison to the SJVAPCD's screening thresholds. Because maximum daily emissions can be substantially higher than average daily emissions, the Draft EIR likely fails to identify significant impacts on air quality in some construction years for the SJVAPCD.	

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525-152	[ATT 4] IV.B The Draft EIR Underestimates Emissions from Diesel-powered Off-road Construction Equipment As discussed below, the Draft EIR quantification of emissions generated during Project construction by diesel-powered off-road construction equipment underestimates the emissions of criteria pollutants and precursors because: a) Environmental Commitment EC-7 does not support the Draft EIR's assumptions regarding the use of renewable diesel; b) Environmental Commitment EC-7 does not support the Draft EIR's assumptions regarding the use of Tier 4 Final engines; c) the Draft EIR assumes incorrect emission factors; and d) the Draft EIR's emission calculations fail to account for engine deterioration.	This information summarizes multiple assertions presented in individual comments from the letter. Please see response to comment 525-153 regarding the use of renewable diesel fuel. Please see responses to comments 525-154 through 525-161 and Common Response 15, Air Quality and Greenhouse Gases, regarding use of Tier 4 Final engines and associated emission factors. Please see responses to comments 525-162 and 525-163 regarding engine deterioration. As described in these individual responses and Common Response 15, the EIR analysis does not underestimate emissions from diesel-powered off-road construction equipment.
525-153	[ATT 4] IV.B.1 Environmental Commitment EC-7 Does Not Support Draft EIR's Assumptions for Emission Reductions Associated with Use of Renewable Diesel The Draft EIR explains its assumptions for emission reductions from diesel-powered off-road construction equipment exhaust due to the use of renewable diesel (in place of traditional petroleum diesel): "Environmental Commitment EC-7: Off-Road Heavy-Duty Engines also requires that off-road equipment utilize renewable diesel. Renewable diesel would reduce particulate matter and NOx emissions generated by Tier 0 to Tier 3 engines by 30% and 10%, respectively (California Environmental Protection Agency 2015:8). Accordingly, control efficiencies of 30% and 10% were applied to the quantification	Part of the comment paraphrases and quotes content from Appendix 3B, Environmental Commitments and Best Management Practices, of the EIR. It also provides a definition of renewable diesel. This information is not a comment on the contents of the EIR. As noted by the comment, Environmental Commitment EC-7 in the Draft EIR was written to support narrow exemptions from use of renewal diesel fuel. Since the development of Environmental Commitment EC-7, the California Air Resources Board (CARB) adopted amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation (In-Use Regulation). Pursuant to the amended In-Use Regulation and effective January 1, 2024, renewable diesel must be used in all vehicles owned or operated in California that are subject to the Off-Road Regulation (California Air Resources Board 2022a:50). The In-Use Regulation allows two exceptions to this mandate: 1) fleets solely operating attainment areas and 2) fleets comprised entirely of vehicles with Tier 4 Final engines. Neither of these exemptions will apply to fleets used to construct the project. As discussed in Chapter 23, Air Quality

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	of PM10 and PM2.5 and NOx, respectively, for engines without Tier 4 emission standards. No reductions were applied to emissions quantified for Tier 4 engines pursuant to Environmental Commitment EC-7. [Footnote 13: Draft EIR, Appx. 23A, p. 23A-5.] (Note: "Tier" refers to emissions standards established by the U.S. Environmental Protection Agency ("EPA") to reduce emissions of particulate matter ("PM"), NOx, hydrogen carbons ("HC")/nonmethane hydrocarbons ("NMHC"), and CO from new, non-road (off-road) diesel engines. Starting with the first federal standards (Tier 1), which were adopted in 1994 and became effective between 1996 and 2000 depending on engine horsepower, these emissions standards were designed to progressively tighten over time. At present, Tier 4 is most stringent set of standards adopted by EPA, with effective dates between 2008 and 2013 for engines <75 hp, depending on engine horsepower. [Footnote 14: For an overview, see, e.g., DieselNet, Emission Standards, United States: Nonroad Diesel Engines, Revision 2022.01; available at: https://dieselnet.com/standards/us/nonroad.php.]) Environmental Commitment EC-7 requires the following with respect to the use of renewable diesel for diesel-powered construction equipment: All diesel equipment will be required to meet the following standards. 1. Use renewable diesel fuel meeting the most recent ASTM D975 specification for Ultra Low Sulfur Diesel and having a carbon intensity no greater than 50% of diesel with the lowest	and Greenhouse Gases, the project is in a nonattainment or maintenance area for one or more criteria pollutants. While Tier 4 Final engines are required pursuant to Environmental Commitment EC-7, this mandate only applies to equipment equal to or greater than 25 horsepower. Accordingly, equipment less than 25 horsepower and not Tier 4 Final certified will be required to use renewable diesel fuel, pursuant to the In-Use Diesel Regulation. Environmental Commitment EC-7 has been revised to reference the In-Use Regulation and remove the exemptions excerpted by the commenter. As revised, Environmental Commitment EC-7 requires all diesel equipment less than 25 horsepower (i.e., not subject to the Tier 4 Final mandate) use renewable diesel fuel. This is consistent with the assumptions made in the EIR air quality emissions analysis. As stated in Appendix 23A, Mass Emissions Estimation Methodology, no renewable diesel benefits were applied to emissions quantified for Tier 4 Final engines. Accordingly, the EIR does not underestimate emissions from project construction with respect to use of renewable diesel fuel. The language of Environmental Commitment EC-7 does not support the comment assertion that the commitment lacks enforcement and monitoring. Environmental Commitment EC-7 specifically requires all construction contractors maintain and submit records verifying compliance with the renewable diesel mandate. Text has been slightly revised to clarify that contractors for each project facility will be required to monitor and enforce the commitment, per the comment request. Affirmation of compliance through submission of equipment and fuel records is consistent with statewide reporting requirements under the In-Use Regulation. The renewable diesel mandate will be identified in contractor bid specifications and enforced as a condition of individual construction contracts, pursuant to the Mitigation Monitoring and Reporting Program (MMRP). Refer to Common Response 1, CEQA Process, General Approach

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	carbon intensity among petroleum fuels sold in California. This criterion may not be practicable at smaller road modification construction sites. Each contractor will provide DWR with monthly and annual reports of renewable diesel purchase records and equipment and vehicle fuel consumption. Exemptions to use traditional diesel can be made where renewable diesel is not available from suppliers within 200 miles of the project site. Contractors must identify the quantity of traditional diesel purchased and fully document the availability and price of renewable diesel to meet project demand. [Footnote 15: Draft EIR, p. 3B-18.] (Explanation of terms: Renewable diesel is a biomass-based diesel fuel similar to biodiesel but with important differences. Renewable diesel is a hydrocarbon that is chemically equivalent to traditional petroleum diesel and can be used as a drop-in biofuel with or without blending. Renewable diesel can be produced from nearly any biomass feedstock, including agricultural waste products, vegetable oils and animal fats, using a hydrogenation process. In contrast, biodiesel, which is produced by transesterification of vegetable oils and animal fats, cannot be used as a drop-in fuel but requires blending with traditional petroleum diesel/distillate. Renewable diesel meets the American Society for Testing and Material ("ASTM") specification for petroleum diesel, ASTM D975 Standard Specification for Diesel Fuel Oils. [Footnote 16: EIA, Biofuels Explained; available at: https://www.eia.gov/energyexplained/biofuels/biodiesel-rd-other-basics.php.] (ASTM D975 is a specification that describes 13 tests and their acceptable limits, which a diesel fuel must meet at the time of delivery. [Footnote 17: See, for example, Polaris Laboratories, What You Need to Know about ASTM	to Analysis, and Other Environmental Review Issues, for additional information on the MMRP and enforceability of project mitigation and environmental commitments. With respect to the comment request to provide "preferential fueling of engines without Tier 4 certification"; such a mandate is not necessary since only engines without Tier 4 certification would be required to use renewable diesel. None of the revisions to Environmental Commitment EC-7 described above resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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	D975; available at: https://polarislabs.com/decoding-astm-d975/.]) Carbon intensity is expressed in grams of carbon dioxide equivalent per megajoule of energy provided by that fuel. The carbon intensity calculation takes into account the greenhouse gas emissions associated with all of the steps of producing, transporting, and consuming a fuel—also known as a complete life cycle of the fuel. [Footnote 18: CARB, Low Carbon Fuel Standard, September 10, 2020; available at: https://ww2.arb.ca.gov/sites/default/files/2020-09/basics-notes.pdf.]) While commendable in its intent, Environmental Commitment EC-7 as written does not support the Draft EIR's assumptions. Environmental Commitment EC-7 provides that the use of renewable diesel "may not be practicable at smaller road modification construction sites" and permits the use of traditional diesel "where renewable diesel is not available from suppliers within 200 miles of the project site." The Draft EIR does not take these exceptions into account; instead, it assumes that all diesel-fueled off-road construction equipment engines would be fueled with renewable diesel at all times with the corresponding assumed emission reductions for engines that are not Tier 4-certified. Consequently, the Draft EIR underestimates emissions from Project construction whenever renewable diesel is not used. (It should also be noted that Environmental Commitment EC-7 does not specify the responsible party who would monitor and enforce the implementation of renewable diesel use. It is not known whether DWR would designate someone internally for this task or contract it out. Since there is no requirement for a construction site manager in the Environmental Commitments	

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	or Mitigation Measures, the proposed measures are not enforceable in the field, i.e., at the construction site. Further, simply submitting this information to DWR without an accompanying reporting requirement makes this measure unenforceable. Further, the commitment should be revised to require preferential fueling of engines without Tier 4 certification with renewable diesel. In sum, Environmental Commitment EC-7 as written does not support the Draft EIR's assumptions regarding control efficiencies. DWR should also revise Environmental Commitment EC-7 to prioritize fueling of the dirtiest equipment on site (by ascending tier certification) if the quantity of required renewable diesel on site exceeds the available quantity.)	
525-154	[ATT 4] IV.B.2 Environmental Commitment EC-7 Does Not Support Draft EIR's Assumptions for EPA Tier 4 Final Certification The Draft EIR provides the following explanation in support of its calculations of exhaust emissions from diesel-powered off-road construction equipment: "Pursuant to Environmental Commitment EC-7: Off-Road Heavy-Duty Engines (refer to Appendix 3B), Tier 4 emissions rates were modeled, where established, instead of calendar year averages that are based on a mix of equipment meeting various engine tiers." [Footnote 19: Draft EIR, Appx. 23A-5, internal citations omitted.] (Note: for engines of ≥75 hp, EPA adopted two sets of Tier 4 standards, with phase-in over several years. The initial standards for PM compliance are sometimes referred to as interim Tier 4 ("Tier 4i"), transitional Tier 4, or Tier 4A, while the final standards for NOx and HC compliance are sometimes	Part of the comment paraphrases and quotes content from Appendix 3B, Environmental Commitments and Best Management Practices, of the EIR. This information is not a comment on the contents of the EIR. The comment assertion that Environmental Commitment EC-7 includes exemptions for use of Tier 4 compliant engines is incorrect. Environmental Commitment EC-7 does not allow exemptions from the Tier 4 engine certification. All off-road diesel engines greater than 25 horsepower used to construct the proposed project must use at least EPA certified Tier 4 Final engines. Environmental Commitment EC-7 has been revised to specifically define "all relevant equipment" as "off-road diesel engines greater than or equal to 25 horsepower" per this comment. This will be mandated in contractor bid specifications and construction contractors will be required to meet the engine certifications. The term "if commercially available" applies to engine certifications more stringent that Tier 4 Final, which may be adopted in the future throughout the course of project construction. Because future standards are not yet known, they cannot be required by Environmental Commitment EC-7.

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	referred to as final Tier 4 (“Tier 4 Final”) or Tier 4B. Tier 4 Final became effective in 2014 for engines ≤75 hp and ≤750 hp and in 2015 for engines >750 hp.[Footnote 20: For an overview, see, e.g., DieselNet, Emission Standards, United States: Nonroad Diesel Engines, Revision 2022.01; available at: https://dieselnet.com/standards/us/nonroad.php.]) Review of the spreadsheets provided by DWR show that the Draft EIR’s calculations rely on Tier 4 Final emission rates for all off-road diesel-powered equipment with engines greater than 20 hp for the entire Project construction period (with equipment engine sizes ranging from 3 hp to 900 hp). (See Table 2 below [see ATT 4 Exhibit 4].) This assumption is not supported by Environmental Commitment EC-7. Environmental Commitment EC-7 specifies with respect to the use of EPA Tier 4 Final certified engines for Project construction: “DWR will require all relevant equipment to utilize EPA certified Tier 4 Final or more advanced engines, if commercially available. A copy of each unit’s certified tier specification, emissions rating and any required California Air Resources Board (CARB) or air pollution control district operating permit will be made available to DWR at the time of mobilization of each piece of equipment. Each contractor will keep a written record (supported by equipment-hour meters where available) of equipment usage during project construction and maintenance for each piece of equipment. Each contractor will provide DWR with monthly and annual reports of equipment operating hours documenting compliance. DWR will consider use of electric or hybrid-electric off-road equipment (including	However, DWR wanted to acknowledge the likely adoption of more stringent emission standards, which will likely be required, and allow construction contractors to use engines meeting future standards that exceed the level of protection afforded by Tier 4 Final standards. The commitment has been revised to clarify that "if commercially available" applies only to more advanced engine standards and not the Tier 4 Final mandate, per the comment. No emission reductions beyond those achieved by Tier 4 Final standards for equipment greater than or equal to 25 horsepower were assumed in the air quality modeling. Accordingly, the emissions modeling and conclusions of the EIR are supported by Environmental Commitment EC-7. The comment also expresses concern about the ability of commercial contractors to use EPA Tier 4 Final off-road engines, as required by Environmental Commitment EC-7. The comment contends that the In-Use Regulation only requires construction contractors to gradually retire equipment, and because of this, older (Tier 0, Tier 1, and Tier 2) equipment still comprise a portion of the statewide fleet. The comment therefore suggests that the air quality analysis is unsupported in its assumption that all off-road diesel equipment used to construct the project would meet USEPA Tier 4 Final emission standards. As noted above, Environmental Commitment EC-7 requires all off-road diesel engines greater than or equal to 25 horsepower to use EPA certified Tier 4 Final engines. The commitment does not exclude use of engines meeting more stringent emission standards that may be adopted in the future throughout the course of project construction. For example, CARB is working on proposed rulemaking that would require new model year engines to meet more stringent Tier 5 standards beginning in 2028 (California Air Resources Board 2023). However, because Tier 5 standards have not yet been adopted, they cannot be required by Environmental

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	generators) over diesel counterparts to the extent that they become commercially available and earns [sic] a track-record for reliability in real-world construction conditions and become cost effective. [Footnote 21: Draft EIR, p. 3B-18.]" While the intent of Environmental Commitment EC-7 to require EPA Tier 4 Final certified engines is commendable, it does not support the Draft EIR's assumed emission rates. First, Environmental Commitment EC-7 includes exemptions, requiring the use of EPA-certified Tier 4 Final equipment only for "all relevant equipment" and only "if commercially available" (Note: Environmental Commitment EC-7 neither provides a definition for these terms nor does it specify the responsible party for determining relevancy and commercial availability. This determination may not be left to contractors' assertions.) Thus, the Environmental Commitment EC-7 assumption that all construction equipment >20hp would be Tier 4 Final certified is unfounded. Second, even if Environmental Commitment EC-7 supported the Draft EIR's assumptions, which it does not, commercial contractors, such as those that would be contracted by DWR for Project construction, do not turn over their entire existing construction fleet and purchase all new equipment with the highest tier when it becomes available. This is because compliance with EPA certification tiers is only required for manufacturing of new off-road diesel-powered equipment. Further, while all horsepower groups are now subject to Tier 4 Final standards, manufacturers are still producing and selling many engines that meet Tier 4i or even Tier 3 emissions standards. [Footnote 22: CARB, 2017 Off-Road Diesel Emission	Commitment EC-7 and were not assumed in the air quality emissions modeling. The Tier 4 Final certification standard mandated by Environmental Commitment EC-7 goes above and beyond the In-Use Regulation. As noted in the comment, the In-Use Regulation requires contractors phase-out older (Tier 0, Tier 1, and Tier 2) off-road equipment between 2024 and 2036. The In-Use Regulation also restricts the addition of Tier 3 and Tier 4 Interim engines to fleets. By requiring all engines greater than 25 horsepower meet Tier 4 Final emission standards at the time of project construction, Environmental Commitment EC-7 accelerates implementation of the In-Use Regulation for project construction fleets. Contractors for the project will not be allowed to "gradually" phase-in Tier 4 Final engines, as allowed by the In-use Regulation and acknowledged by the comment. Rather, Environmental Commitment EC-7 requires construction contractors operate at least Tier 4 Final engines in all offroad diesel equipment greater than or equal to 25 horsepower. Because Environmental Commitment EC-7 is more stringent than the In-use Regulation, compliance with the commitment may require some contractors to purchase new equipment, although repowering existing equipment to meet Tier 4 Final standards is also allowable. In developing the Tier 4 Final certification mandate for offroad equipment, DWR performed a detailed review of currently verified equipment control technologies and consulted with industry experts regarding the availability of Tier 4 engines in California. The analysis confirmed that sufficient control technologies will be available at the time of construction to achieve the Tier 4 emission standard for off-road equipment. DWR's conclusion is supported by CARB's (2022a) Public Hearing to Consider Proposed Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation Staff Report on Initial Statement of Reasons (ISOR). In the ISOR, CARB identifies that as of July 2022, the total statewide population of diesel off-road

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	Factor Update for NOx and PM, p. 12; available at: https://sj-admin.s3-us-west-2.amazonaws.com/2017_0000_CARB_OffRoadDieselUpdateNOxPM.pdf.] Rather, commercial construction fleets are composed of a mix of equipment tiers subject to CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation ("Off-Road Regulation"), which was developed to ensure fleets gradually turnover the oldest and dirtiest equipment to newer, cleaner models and prevent fleets from adding older, dirtier equipment. The Off-Road Regulation requires fleets to reduce their fleet-average emissions by retiring older vehicles and replacing the retired vehicles with newer vehicles, repowering older engines, or installing verified diesel emission control strategies in older engines; and by restricting the addition of older vehicles to fleets. CARB requires compliance with fleet-average target emission rates for NOx and PM, which depend on the size of the fleet in terms of total maximum horsepower, with large fleets subject to more stringent requirements. [Footnote 23: CARB, In-Use Off-Road Diesel-Fueled Fleets Regulation; https://ww2.arb.ca.gov/our- work/programs/use-road-diesel-fueled-fleets-regulation.] However, because diesel-powered engines can have a very long life (with some equipment up to 47 years old [Footnote 24: CARB, 2022 CARB Construction, Industrial, Mining and Oil Drilling Emissions Inventory, August 2022, p. 23; available at: https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/off- roaddiesel/appf.pdf.[see ATT 4 ATT3]]), many fleets still operate very old equipment with Tier 0 (uncontrolled), Tier 1, and Tier 2 making up one third of the statewide fleet reported to CARB. [Footnote 25: CARB, Overview of Proposed	engines is comprised of 54 percent Tier 4 Final engines (California Air Resources Board 2022a:53). Accordingly, Tier 4 Final engines comprise a greater fraction of the current statewide offroad fleet than older (Tier 0, Tier 1, and Tier 2) equipment, as cited by the commenter. Implementation of the In-Use Regulation will increase commercial availability of Tier 4 Final engines by the time of project construction. The Tier 4 Final certification mandate will be identified in contractor bid specifications and construction contractors will be required to meet the engine certification as a condition of being awarded a construction contract for the project. Contracting requirements for Tier 4 engines has been widely and successfully used throughout the state, including notably for the High-Speed Rail (HSR) project. HSR contract requirements dictate that contractors use Tier 4 on- and off-road vehicles and technology (California High Speed Rail Authority 2023). Other projects in California have likewise mandated Tier 4 Final engines in CEQA analyses either in the project design or as mitigation measure met through requirements in contracting (Eyestone Environmental 2020:IV-7; Applied Planning Inc. 2021:2-1). The required use of Tier 4 Final engines in equipment greater than or equal to 25 horsepower is supported by Environmental Commitment EC-7. CARB analysis, regulatory drivers, and industry trends verify the marketability of Tier 4 Final engines for use at project construction sites. Exclusive use of Tier 4 Final engines is already being required for construction projects throughout the state. Accordingly, the commenter's concern that contractors will not be able to comply with Environmental Commitment EC-7 or that the Draft EIR air quality analysis underestimates emissions from offroad equipment is unfounded. None of the revisions to Environmental Commitment EC-7 described above resulted in a new significant environmental impact or substantial increase

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	Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation, October 5, 2022; available at: https://ww2.arb.ca.gov/resources/fact-sheets/overview-proposed- amendments-use-road-diesel-fueled-fleets-regulation. [See ATT 4 ATT4]] Figure 2 [see ATT 4 Exhibit 3] presents the current age distribution of diesel-powered equipment by fleet size in California based on reported fleet characteristics in CARB's DOORs inventory as of July 2020. CARB summarizes the key take-aways from this figure [ATT 4 Exhibit 3]: The age distribution of large fleets shows a relatively quick drop in population, reaching half of maximum population by age 7 or 8, which is also reflected in the survival curve for large fleets as shown in Figure 12. The age distribution of medium fleets does not show the same drop in populations until age 18, indicating the average medium fleet maintains equipment longer than the average large fleet. Small fleets take longer than even medium fleets to show an initial decline in age distribution, but then decline at roughly the same rate as medium fleets and show a similar retirement rate from age 20 to 35. [Footnote 26: CARB, 2022 CARB Construction, Industrial, Mining and Oil Drilling Emissions Inventory, op. cit., p. 23.] According to CARB, this very old equipment in fleets contributes a disproportional share of pollutants: Although the population of older vehicles is relatively small - Tiers 0 (or uncontrolled), 1, and 2 only make up one third of the statewide fleet reported to CARB - this small population contributes 60 percent of the Nox and PM emissions in 2022. A	in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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	single, older Tier 0 off-road engine has up to 80 times higher emissions per hour compared to a new Tier 4 Final engine. [Footnote 27: CARB, Overview of Proposed Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation, op. cit.] To address these disproportionate emissions from older equipment, CARB approved an amendment to the Off-Road Regulation to phase out these very old engines in November 2022. The amended regulation requires phase-out of Tier 0 (uncontrolled), Tier 1, and Tier 2, restricts the addition of Tier 3 and Tier 4i engines to fleets, and requires the use of renewable diesel. These regulations will be phased in between 2024 and 2036, depending on fleet size. Until then, fleets will become progressively cleaner, but the complete phase-out of very old equipment (Tiers 0 through 3) will not be required until 2036.[Footnote 28: CARB Approves Amendments to Off-Road Regulation to Further Reduce Emissions, November 17, 2022; available at: https://ww2.arb.ca.gov/news/carb-approves-amendments-road-regulation-further- reduce-emissions. [see ATT 4 ATT 5]] In sum, the Draft EIR's assumption that Project construction would use only new diesel- powered heavy-duty construction equipment >20 hp with EPA Tier 4 Final certified engines for any year during the entire Project construction period is not supported. For these reasons, the Draft EIR substantially underestimates emissions from heavy-duty construction equipment and, consequently, fails to require adequate mitigation.	

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525-155	[ATT 4, Exhibit 3: CARB Age distribution of diesel-powered equipment by fleet size]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter (e.g., response to comment 525-154 regarding diesel-powered equipment).
525-156	[ATT 4] IV.B.3 The Draft EIR Uses Incorrect Tier 4 Final Emission Rates The Draft EIR relies on emission factors for diesel-powered construction equipment from the California Emissions Estimator Model ("CalEEMod"): Emission factors for diesel-powered heavy equipment (e.g., loaders, graders, bulldozers) were obtained from the CalEEMod (version 2016.3.2) User's Guide, which provides values per unit of activity (in grams per horsepower-hour) (Trinity Consultants 2017a:Table 3.5). [Footnote 29: Draft EIR, Appx. 23A-5, internal citations omitted.] Review of the spreadsheets provided by DWR shows that the emission factors the Draft EIR uses to calculate emissions from diesel-powered construction equipment are incorrect. First, the Draft EIR relies on an outdated version of CalEEMod, version 2016.3.2, which was superseded by version 2020.4.0; [Footnote 30: CalEEMod, Download Model: CalEEMod Version 2020.4.0; available at: http://www.aqmd.gov/caleemod/download-model] the corresponding updated User's Guide was released in May 2021. [Footnote 31: CalEEMod, User's Guide for CalEEMod Version 2020.4.0; available at: http://www.aqmd.gov/caleemod/user's-guide.] An even newer, web-based version of the model, version 2022.1 and	CalEEMod version 2022.1 was not officially released until after the close of the public comment period for the Draft EIR. However, DWR has elected to refine the air quality analysis to confirm use of CalEEMod version 2022.1 would not change any of the air quality impact conclusions contained in the Draft EIR. Refer to Common Response 15, Air Quality and Greenhouse Gases, for additional discussion regarding the refinement and the use of CalEEMod version 2022.1. The comment states that the EIR did not correctly correlate off-road equipment emission factors to the project equipment inventory. On rare occasion, correlating the equipment horsepower with the nearest default max horsepower resulted in some equipment being modeled in a lower default bin. Refer to Common Response 15 for additional discussion regarding off-road emissions factors and the project equipment inventory. Revisions made to the air quality analysis for the Final EIR in response to this comment and resulting from other technical refinements are presented in Common Response 15. None of the revisions described in Common Response 15 or made in Chapter 23, Air Quality and Greenhouse Gases, resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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	associated User's Guide (prepared by ICF in collaboration with SMAQMD, Fehr & Peers, STI, and Ramboll) were released in 2022. [Footnote 32: CalEEMod Version 2022.1; available at: https://www.caleemod.com/; and CalEEMod, User Guide for CalEEMod Version 2022.1, April 2022; available at: https://www.caleemod.com/user-guide] The latest web-based release, version 2022.1, corrects several incorrect emission factors in the prior versions of the model. As summarized in Table 2 [see ATT 4 Exhibit 4] below, the correct Tier 4 Final emission factors for PM10/PM2.5 and CO are considerably higher than those that were relied upon by the prior versions of CalEEMod and by the Draft EIR. The analysis in the Draft EIR should have relied on current emissions factors, which were available during the time the Draft EIR was being developed. Second, the Draft EIR did not correctly correlate the engine horsepower and associated emission factors with the emission factors from CalEEMod it allegedly relied upon. Table 2 provides a comparison of the Tier 4 Final emission factors in grams per brake- horsepower-hour ("g/bhp-hr") and engine horsepower bins established by CalEEMod and the engine horsepower bins used by the Draft EIR to group off-road equipment by engine size. As shown, the horsepower bins established by CalEEMod and the Draft EIR do not correspond; in fact, there does not seem to be any rhyme or reason for the Draft EIR's engine aggregation into horsepower bins. For example, engine horsepower bin 25 contains engines ranging from 22 hp to 500 hp; bin 120 contains engines ranging from 80 to 263 hp; and bin 750 contains engines ranging from 670 hp to 900 hp. With respect to emission estimates, this matters most for	

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	equipment over 750 hp for which Tier 4 Final NOx and PM10/PM2.5 emission factors are much higher than for the next lower engine bins. For example, the correct NOx Tier 4 Final emission factor for engines over 750 hp (2.24 g/bhp-hr) is almost 9 times as high as the NOx Tier 4 Final emission factor for engines between 120 hp and 750 hp (0.26 g/bhp-hr) assumed in earlier versions of CalEEMod and the Draft EIR; the Tier 4 Final PM10/PM2.5 emissions for engines over 750 hp (0.020 g/bhp-hr) is twice as high as that for engines between 25 hp and 750 hp (0.010 g/bhp-hr). Thus, the Draft EIR by far underestimates NOx and PM10/PM2.5 emissions from large engines. These engines contribute a large percentage of total emissions, as shown in Figures 2a through 2d, which summarize daily exhaust emissions from diesel-powered construction equipment for construction of "Intakes." I prepared these figures based on data excerpted from spreadsheets provided by DWR ("Intakes.xlsx/Offroad" [see Exhibits 5 through 8 of ATT 4]). As shown in these figures [see ATT 4, Exhibits 5 through 8], very large construction equipment engines with 760 hp and 808 hp (cranes and trenchers) would contribute disproportionately to exhaust emissions during construction compared to smaller horsepower engines even with the incorrect lower emission factors assumed by the Draft EIR. When corrected, emissions from this equipment would be considerably higher than disclosed in the Draft EIR, especially for Nox (almost nine times as high) and PM10/PM2.5 (twice as high). Not only does this issue render the Draft EIR's emission estimates and conclusions invalid, but it also undermines the Draft EIR's conclusions in its health risk assessment, which is	

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	based on these emission estimates.	
525-157	[ATT 4, Exhibit 4: Table 2, Comparison of Tier 4 Final emission factors and engine horsepower bins from CalEEMod and horsepower bins and engine sizes used by Draft EIR]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter (e.g., response to comment 525-156).
525-158	[ATT 4, Exhibit 5: Figure 2a, Daily Nox exhaust emissions from diesel-powered construction equipment by horsepower bin for "Intakes" construction]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter (e.g., response to comment 525-156).
525-159	[ATT 4, Exhibit 6: Figure 2b, Daily ROG exhaust emissions from diesel-powered construction equipment by horsepower bin for "Intakes" construction]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter (e.g., response to comment 525-156).
525-160	[ATT 4, Exhibit 7: Figure 2c, Daily CO exhaust emissions from diesel-powered construction equipment by horsepower bin for "Intakes" construction]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter (e.g., response to comment 525-156).
525-161	[ATT 4, Exhibit 8: Figure 2d, Daily PM10/PM2.5 exhaust emissions from diesel-powered construction equipment by horsepower bin for "Intakes" construction]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter (e.g., response to comment 525-156).
525-162	[ATT 4] IV.B.4 Zero-hour Certified Emission Factors Do Not Reflect Emission Rates for In-use Equipment due to Engine Deterioration The tier-based emission factors per engine horsepower bin incorporated into CalEEMod, including the Tier 4 Final emission factors used here, are based on CARB's Carl Moyer Program Guidelines. CalEEMod, version 2016.3.2, relies on CARB's 2011 Carl Moyer Program Guidelines; [Footnote 33: CalEEMod 2016.3.2, Appx. D, Default Data Tables, October 2017, footnote to Table 3-5 OFFROAD Emission Factor Based on Engine Tier ("Source: ARB. 2011. The Carl Moyer Program Guidelines"); see Draft EIR, References, 23-AirQuality_GHG-Refs, App23A, "TrinityConsultants_2017a.pdf;"available at:	The comment assertion that the Draft EIR air quality analysis underestimates emissions because it uses off-road equipment emission factors from CalEEMod, which do not include adjustments for engine deterioration, is not accurate nor supported by the appropriately selected and applied methodology for calculating emissions in the EIR. There is no requirement for the EIR to use the Carl Moyer Guidelines to quantify project air quality emissions from off-road equipment. The EIR's quantification of criteria pollutant emissions is consistent with industry-standard models and guidance recommended by local air districts. The resulting emissions estimates provide a reasonable representation of expected air quality impacts, consistent with the level of information available for environmental review and expected by CEQA. Refer to Common Response 15, Air Quality and Greenhouse Gases, for additional discussion regarding determining criteria pollutant emissions and industry-

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	https://cadwr.app.box.com/s/3dvdp4kukehlzm82tvypqaqaymcogugz/folder/168799138563.] version 2022.1 relies on CARB's most recent version, the 2017 Carl Moyer Program Guidelines. [Footnote 34: CalEEMod 2022.1, User Guide for CalEEMod Version 2022.1, Appx. G, Default Data Tables, footnote to Table G-13: Offroad Equipment Emission Factor by Engine Tier (grams per horsepower-hour); available at: https://www.caleemod.com/user-guide.[see ATT 4 ATT 7]] CARB's Carl Moyer Program Guidelines provide emission factors for controlled off-road diesel engines ≥25 hp in grams per brake horsepower-hour ("g/bhp-hr"), categorized by engine family bins (range of maximum rated horsepower) and tier certification (Table D-9 in the 2017 guidelines). (Note: CARB's controlled emission factors incorporate fuel correction factors to account for the lower emissions associated with the use of ultra-low sulfur diesel fuel in California compared to the higher sulfur content diesel fuel EPA assumed for its tier certifications (fuel correction factors for Tier 1 and later engines are listed in Table D-23 in CARB's 2017 Guidelines.).) CalEEMod and the Draft EIR rely on these emission factors without accounting for applicable adjustments to these emission factors. Specifically, the fuel-corrected emission factors (Table D-9 in the 2017 Carl Moyer Program Guidelines) represent zero-hour emission factors for new engines for EPA-certification of equipment, and do not reflect the effects of engine deterioration, i.e., the fact that base emissions of engines change as equipment is used due to wear of various engine parts or reduced efficiency of emission control devices as well as due to tampering, malfunctions, and mal-maintenance.	standard models and guidance. The CARB recommendation cited by the comment as evidence that project analyses should consider emissions from engine deterioration is taken out of context and misapplied. While CARB provides this recommendation, it is given in the Carl Moyer Guidelines (California Air Resources Board 2017a:19) and is specific to projects undergoing evaluation under the Carl Moyer Program, not CEQA. This is evidenced by the fact that the method to account for engine deterioration in the Carl Moyer Guidelines cannot be reasonably applied to CEQA evaluations. Chapter 3, Formula C-6, of the 2017 Carl Moyer Guidelines presents the methodology for quantifying annual off-road equipment emissions for Carl Moyer evaluations. The method requires users calculate the deterioration life of each equipment, which is the "expected first year of operation – baseline engine model year + (project life /2)" (California Air Resources Board 2017a:C-5). Construction of the proposed project will require the operation of thousands of individual equipment pieces over up to 14 years. While the total operating hours by equipment category and type of off-road equipment needed to construct the project are known, specific details for individual equipment pieces, including their baseline engine model year, are not known and cannot be known until construction contractors are selected. Accordingly, application of the Carl Moyer calculation method is not possible based on the information typically available at the environmental review stage, and would require DWR to speculate on specific details, which is discouraged by CEQA. The equation presented by the comment is not sourced from the Carl Moyer Guidelines. As noted above, the equation for quantifying annual off-road equipment emissions for Carl Moyer evaluations is presented in Chapter 3 of the 2017 Carl Moyer Guidelines (California Air Resources Board 2017a:C-5). The equation presented by the commenter is from CARB's (2017b) 2017 Off-Road Diesel Emission Factor Update for NOx and

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	CARB uses deterioration rates for its in-use equipment emission inventories and recommends that project evaluation for the Carl Moyer Program consider the emissions that occur due to deterioration of vehicles and emission controls over time to better reflect real-world engine emissions over project lives, and align Moyer calculation methods with those used in CARB planning inventories and State Implementation Plan ("SIP") air quality modeling. [Footnote 35: CARB, The Carl Moyer Program Guidelines 2017 Revisions Volume I: Program Overview, Program Administration and Project Criteria, approved by the Board: April 27, 2017, p. 1-9; available at: https://ww2.arb.ca.gov/resources/documents/2017-carl-moyer-program-guidelines [see ATT 4 ATT6].] The Draft EIR fails to adjust emission factors for engine deterioration. Put another way, the Draft EIR assumes that all equipment with Tier 4 certified engines would be brand new every single day and year of Project construction without any deterioration taking place. Clearly, this assumption is unrealistic and mistaken. CARB's 2017 Carl Moyer Program Guidelines, Table D-9 (the same table that provides controlled emission factors by Tier rating), provides deterioration rates to estimate increased emissions from engine wear and tear and other variables that increase engine emissions over time. CARB provides the following methodology for calculating emission factors for an off-road diesel engine with a given horsepower in a given model year including deterioration for off-road diesel engines: EF = EF0 + (DR * CHrs) where:	PM, which provides technical documentation for CARB's statewide emissions inventory for off-road equipment. The equation is not consistent with the Carl Moyer Guidelines and cannot be extended to the project analysis based on the level of available information. While adjusted emission factors can be calculated based on various increments of cumulative engine operation, as presented by the commenter in ATT 4, Exhibit 9: Table 2, it would be speculative to apply these factors to the project off-road equipment inventory. As noted above, the project equipment inventory includes the total expected operating hours by general equipment type (e.g., 200 hours of crane activity at Intake A). Individual equipment pieces, some of which may be new with 0 existing cumulative hours of operation and others with hundreds of existing operational hours, will be defined by the construction contractors at the time of construction. It is also possible contractors may swap out individual equipment pieces of the same type throughout project construction, further complicating accounting of cumulative engine hours at this stage of project review. Because equipment odometer readings are needed to correctly apply deteriorated emission rates based on cumulative operating hours, such as those calculated by the commenter, adopting the suggested methodology described in the comment would require speculation and likely mischaracterization of off-road equipment emissions during project construction.

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	EF = emission factor, in grams per horsepower-hour (g/hp-hr) EF0 = zero-hour emission factor (g/hp-hr) DR = deterioration rate, or the increase in emissions as the equipment ages in grams per horsepower-hour-hour ("g/hp-hr2") CHrs = cumulative hours [Footnote 36: CARB, 2017 Off-Road Diesel Emission Factor Update for Nox and PM, op. cit., p. 8] This methodology was not followed. I calculated in-use emission factors for Tier 4 Final certified diesel-fueled off-road equipment based on the above formula and assuming deterioration factors provided by CARB's 2017 Carl Moyer Program Guidelines, Table D-9. The results are summarized in Table 2 [see ATT 4, exhibit 9, comment 163]. Table 2 shows that CARB assumes that after 1,000 hours of operation, equivalent to operating equipment for 250 days for 4 hours per day (or 125 days for 8 hours per day), the Nox emission factor increases by 1.3% compared to the zero-hour emission factor, the ROG emission factor by 22%, and the PM10 emission factor by 5.3%. After 1,000 days per year operating for 4 hours per day, Nox emission factors are 5.0% higher, ROG emission factor 88.0% higher, and PM10 emission factors are 21.2% higher than the zero-hour emission rate. Thus, by relying on zero-hour emission factors for new equipment without accounting for engine deterioration during their use over a number of years, the Draft EIR substantially underestimates exhaust emissions from heavy-duty off-road equipment.	

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525-163	[ATT 4, Exhibit 9: Table 2, In-use emission factors for Tier 4 Final certified off-road equipment (g/bhp-hr) assuming deterioration factors (g/bhp-hr2) from CARB 2017 Carl Moyer Guidelines]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter (e.g., response to comment 525-162).
525-164	[ATT 4] V. The Draft EIR's Health Risk Assessment Is Not Supported and Likely Fails to Identify and Adequately Mitigate Significant Impacts The Draft EIR includes a health risk assessment to assess the potential impacts associated with public exposure to diesel particulate matter ("DPM") from diesel- powered engine exhaust during construction and presents the results in Impact AQ-6: Result in Exposure of Sensitive Receptors to Substantial Toxic Air Contaminant Emissions. The Draft EIR finds that Alternative 5, the proposed project, would not result in significant excess cancer risks or chronic or acute health risks. [Footnote 37: Draft EIR, Table 23-64.] However, as discussed in Comment IV.A.1 and IV.A.2 [see comments 152 through 163], the Draft EIR by far underestimates emissions from off-road diesel-powered construction equipment engines, and, consequently, underestimates associated excess cancer risks and chronic or acute health risks. Further, while the Draft EIR acknowledges that Project construction would result in toxic air contaminant emissions from concrete batch plants, review of the modeling files provided by DWR indicates that these emissions were not included in the health risk assessment. In sum, given that the Draft EIR's health risk assessment already finds a maximum excess cancer risk of 8.44 in one	The comment assertion that the Draft EIR underestimates air quality emissions is not accurate nor supported by the analysis and information presented in Common Response 15, Air Quality and Greenhouse Gases. As described in Common Response 15, targeted refinements have been made to the air quality mass emissions analysis. None of the revisions described in Common Response 15 or made in Chapter 23, Air Quality and Greenhouse Gases, resulted in a change to an underlying impact determination upon which the project health risk assessment (HRA) is based. The HRA has been revised for the Final EIR to account for refinements to the diesel particulate matter (DPM) inventory that have occurred as a result of actions discussed in Common Response 15. The revisions did not result in any additional locations or alternatives where modeled DPM concentrations exceeded cancer risk thresholds, and as such, there was no change to an impact determination for Impact AQ-6. Regarding the analysis of batch plants, the HRA has been revised to account for toxic metals associated with concrete batching, as identified in Chapter 23. The contribution of these metals to cumulative health risk is small, and the revised analysis did not identify any new impact locations, as noted above.

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	million for Alternative 5 in the SMAQMD compared to a significance threshold of 10 in one million, [Footnote 38: Draft EIR, Table 23-64, p. 23-149, indicates maximum excess cancer risk of 8 in one million;] it is very likely that excess cancer risks exceed the significance threshold if the errors identified above are corrected; this is a potentially significant impact the Draft EIR fails to identify and mitigate. Finally, to facilitate review, I suggest that DWR, in a revised Draft EIR, include a visual representation of the exact locations where modeled excess cancer risks would exceed thresholds of significance so the public can understand which communities would be exposed to excess cancer risk.	
525-165	[ATT 4] VI. Global Climate Change Impacts due to Project Greenhouse Gas Emissions Are Significant and Not Adequately Mitigated CEQA requires determining the significance of impacts from greenhouse gas ("GHG") emissions. (CEQA Guidelines § 15064.4) Greenhouse gases include carbon dioxide, ("CO2") methane ("CH4"), nitrous oxide ("N2O"), sulfur hexafluoride ("SF6"), and others. (CEQA Guidelines § 15364.5.) The Draft EIR presents estimates of greenhouse gas emissions for Project construction, Project operation and maintenance, increased SWP pumping, and displaced purchases of CVP electricity in metric tons of carbon dioxide-equivalents ("metric tons CO2e" or "mtCO2e"). [Footnote 39: Draft EIR, Tables 23-69 and 23-70.] (Impact AQ-9.) Specifically, the Draft EIR estimates total Project greenhouse gas emissions of 499,102 metric tons CO2e for construction (including compensatory	Please see responses to comments 525-42 and 525-43 and 525-166 regarding tiering from DWR's CAP. Please see responses to comments 525-168 through 525-180 and Common Response 15, Air Quality and Greenhouse Gases, regarding the quantification of GHG emissions from electricity use. Please see responses to comments 525-182 through 525-188 regarding the mitigation of GHG emissions. The information contained in the individual responses and the Common Response does not support the assertions by the comment that the EIR improperly tiers from DWR's CAP, underestimates project GHG emissions, or does not require sufficient mitigation.

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	mitigation); an additional 425 metric tons CO2e per year for operation and maintenance; 254,501 metric tons CO2e per year for increased SWP pumping; and 7,443 metric tons CO2e per year for displaced purchases of CVP electricity. [Footnote 40: Draft EIR, Table 23-70, p. 23-162.] These estimates by individually and in sum by far exceed the net zero significance threshold for greenhouse gas emissions established by the Draft EIR. [Footnote 41: Draft EIR, p. 23-4, 23-53, and 23-56.] The Draft EIR follows a two-pronged approach to determining the significance of greenhouse gas emissions from these activities by relying on separate sections of the CEQA Guidelines: • For greenhouse gas emissions associated with Project operation and maintenance and increased SWP pumping, the Draft EIR contends that these activities are covered by and consistent with DWR's July 2020 update to its Climate Action Plan, entitled "Climate Action Plan Phase 1: Greenhouse Gas Emissions Reduction Plan [Footnote 42: DWR, Climate Action Plan Phase 1, Greenhouse Gas Emissions Reduction Plan, Update 2020, July 2020, see Draft EIR, References, 23_AirQuality_GHG_Refs, Chapter 23, PDFs, "DWR_2020a_CAP_GGERP_Update.pdf;" available at: https://cadwr.app.box.com/s/3dvdp4kukehlzm82tvypqaqaymcogugz/folder/168799138563.] ("Update 2020" or "GGERP"), and can therefore tier from the document pursuant to CEQA Guidelines § 15183.5(b). [Footnote 43: Draft EIR, pp. 23-4, 23-56, and 23-166.] As such, the Draft EIR finds that greenhouse gas emissions associated with these activities are less than significant and does not require any mitigation.	

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	• For greenhouse gas emissions associated with Project construction and displaced purchases of CVP electricity, the Draft EIR relies on CEQA Guidelines § 15064.4 and compares emissions to a performance standard (in this case net zero emissions). [Footnote 44: Draft EIR, p. 23-172.] The Draft EIR finds that implementation of Mitigation Measure AQ9: Develop and Implement a GHG Reduction Plan to Reduce GHG Emissions from Construction and Net CVP Operational Pumping to Net Zero would reduce greenhouse gas emissions to the established net zero performance threshold and, therefore, impacts on global climate change would be less than significant.[Footnote 45: Draft EIR, pp. 23-172, 23-181, and 23-182.] The Draft EIR finds that "through a combination of project-specific mitigation and tiering from DWR's Update 2020, GHG impacts from the Project would be less than significant." [Footnote 46: Draft EIR, p. 23-172.] The Draft EIR's two-pronged approach and conclusions regarding the significance of Project greenhouse gas emissions are not supported. As discussed in the following comments [see comments 166 through 188], the Draft EIR a) improperly tiers greenhouse gas emissions resulting from Project operation and maintenance and increased SWP pumping from DWR's 2020 Update to its Climate Action Plan; b) fails to account for several sources of greenhouse gas emissions in its disclosures and substantially underestimates greenhouse gas emissions from other sources; and c) fails to require adequate mitigation.	
525-166	[ATT 4] VI.A The Draft EIR Improperly Tiers Project Greenhouse Gas Emissions Associated with Operation and Maintenance and	The comment assertion that the EIR incorrectly tiers from DWR's 2020 Update is based on an incorrect understanding of DWR's guidance. The EIR appropriately tiers from the 2020 Update as described in responses to

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	Increased SWP Pumping Activities from DWR's 2020 Update to its Climate Action Plan Update 2020 lays out five steps that must be completed to determine a project's consistency with the DWR's Climate Action Plan and to determine that the cumulative impact analysis of DWR greenhouse gas emissions conducted for Update 2020 analyzes and addresses the emissions for that project. [Footnote 47: Update 2020, p. 64.] Update 2020 also provides an Assessment Form for Consistency with GHG Emissions Reduction Plan in Appendix C to assist DWR in documenting whether a project's future greenhouse gas emissions are entitled to streamlined review. [Footnote 48: Update 2020, Appx. C, Assessment Form for Consistency with GHG Emissions Reduction Plan, Projects Using Only Department of Water Resources Staff and Equipment. ("This form is to be used by DWR project managers to document a DWR CEQA project's consistency with the DWR Greenhouse Gas Emissions Reduction Plan (GGERP). This form is to be used only when DWR is the Lead Agency and when only DWR staff and equipment are used to implement the project.")] The Draft EIR does not complete, or inadequately completes, the five steps laid out in Update 2020, instead relying for the most part on checking off boxes in Update 2020, Appendix C, without providing substantial evidence for its claims. This invalidates the Draft EIR's two-pronged approach to evaluating Project greenhouse gas emissions, as discussed in the following. Step 1: Identify, quantify, and analyze the GHG emissions from the proposed project and alternatives using a method consistent with that described in DWR internal guidance,	comments 525-42 and 525-43. The comment assertion that the EIR provides an abbreviated analysis of GHG emissions is not consistent with the information presented in Chapter 23, Air Quality and Greenhouse Gases. GHG emissions generated by construction and operation of the project were comprehensively quantified following methods recommended by local and state agencies, including DWR. Methods used to quantify emissions are thoroughly described in Appendix 23A, Mass Emissions Estimation Methodology, and summarized in Chapter 23. GHG impacts are assessed in Impacts AQ-9 and AQ-10 using thresholds recommended by state and local agencies and consistent with CEQA Guidelines and case law. The internal guidance document referenced in Step 1 provides guidance for DWR project managers to confirm adequacy of the consistency analysis per the steps outlined in Update 2020. It does not contain quantification methods or procedures. As discussed in responses to comments 525-42 and 525-43, the EIR appropriately follows the steps for tiering from Update 2020 and is thus consistent with DWR guidance. The comment identifies the project as an "Extraordinary Construction Project" under Step 2. The EIR likewise reaches this conclusion and as such, evaluates construction emissions against a net zero threshold. See responses to comments 525-42 and 525-43 for additional discussion. The comment assertion that the EIR does not evaluate project consistency with GHG reduction measures in Update 2020 is not consistent with the information presented in Chapter 23. The GHG reduction measures identified in Update 2020 are reproduced in Chapter 23 in the section titled Impacts on Global Climate Change. Project consistency with these measures is documented in Appendix 23E, Assessment Form for Consistency with GHG Emissions Reduction Plan, as affirmed by DWR's Project Power & Risk Office (PARO). Based on the analysis conducted in

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	"Guidance for Quantifying Greenhouse Gas Emissions and Determining the Significance of their Contribution to Global Climate Change for CEQA Purposes," as such guidance document may be revised. The Draft EIR provides only an abbreviated description of Step 1 [Footnote 49: Draft EIR, p. 23-55. ("Identify, quantify, and analyze the GHG emissions from the proposed project and alternatives.")] which does not mention DWR's internal guidance and does not establish that greenhouse gas emissions from the Project were identified, quantified, and analyzed consistent with methods established in DWR's internal guidance. (Note: DWR's internal guidance is not readily available on DWR's website. The few references found to this document appear to indicate that it was established in 2010.[Footnote 50: See, for example, U.S. Bureau of Reclamation, Mid-Pacific Region, San Joaquin River Exchange Contractors Water Authority, Final Environmental Impact Statement / Environmental Impact Report, Mid-Pacific Region, Water Transfer Program for the San Joaquin River Exchange Contractors Water Authority, 2014–2038, January 2013, SCH No. 2011061057; available at: https://files.ceqanet.opr.ca.gov/232757-6/attachment/m7Xa9dsE9BGnNsMZpAQRiGFGdEBg65esquJ0AP556QblFaDpUAfLYtqvY7uf3RwsVdm aYig7lrAdLkr40; and California Department of Parks and Recreation, Division of Boating and Waterways, Consistency Between Delta Plan Mitigation Measures and the Aquatic Invasive Plant Control Program (AIPCP), January 2018; available at: https://coveredactions.deltacouncil.ca.gov/Services/download.ashx?u=ff65d5b5-4a3b-4a1d-b022- 9e3c7d359331.]	Impact AQ-9, the EIR specifically reaches the conclusion that "the project would not conflict with any of DWR's specific action GHG emissions reduction measures and implements all applicable project-level GHG emissions reduction measures as set forth in Update 2020." The comment assertion that Appendix 23E does not provide written confirmation of DWR's commitment to update the Renewable Portfolio Procurement Plan (REPP) is unfounded and based on expressed concern over terminology. Consistent with the tiering requirements of Update 2020, Appendix 23E includes a letter from DWR's PARO confirming that the energy demand of the project will be met by the resources included in the SWP's diversified power portfolio. The letter is signed and dated by DWR's PARO manager, and represents written confirmation of the project's conformance with DWR's REPP and Update 2020. As outlined in Update 2020 and required by Assembly Bill 1384, DWR is required to update their climate action plan, which includes a GHG inventory, every three years. Pursuant to DWR's commitment to ensure the project's energy demand is met by the REPP, as appropriately documented in Appendix 23E to the EIR, the forthcoming update to DWR's GHG analysis (required by January 2024) incorporates projected emissions from the project. With respect to PARO's letter, the comment notes that it was signed a year before the Draft EIR was published. The GHG analysis was prepared over a period of two years, during which time DWR engaged in external and internal coordination. This advance coordination was necessary to ensure timely completion of the technical analysis for publication in the Draft EIR. While DWR's PARO manager signed the letter a year before the Draft EIR was published, the information and analysis considered by PARO to make the consistency determination has not changed substantively since their review. As allowed by CEQA Guidelines Section 15183.5[b], the EIR tiers the

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	Step 2: Determine that construction emissions levels do not exceed the Extraordinary Construction Project threshold of either 25,000 mtCO2e for the entire construction phase of the project or 12,500 mtCO2e in any single year of construction. Update 2020 defines construction projects as construction, maintenance, or refurbishment work performed on DWR's facilities by an outside contractor. [Footnote 51: Update 2020, p. 24.] The Draft EIR estimates total greenhouse gas emissions during Project construction (including compensatory mitigation) over the 14-year construction phase at 499,102 metric tons CO2e, 20 times as high as the Extraordinary Construction Project threshold for the entire construction phase; the highest single-year greenhouse gas emissions from the Project, 88,352 metric tons CO2e, occur in calendar year 6 and are 7 times as high as the single-year Extraordinary Construction Project threshold. Thus, the Project constitutes an Extraordinary Construction Project. Step 4: Determine that the project does not conflict with DWR's ability to implement any of the specific project GHG emissions reduction measures listed in Chapter VI. Update 2020, Chapter VI, provides twelve specific measures, termed specific actions ("SA"), which the agency plans to implement as individual projects or a series of stand-alone projects. These include seven (7) operational emissions reduction measures (Chapter VI.A) and five (5) maintenance and business practices emissions reduction measures (Chapter VI.C). The Draft EIR does not discuss whether the Project would	cumulative operational GHG impact analysis from the associated CEQA addendum to the negative declaration for the 2012 Plan. The REPP is DWR's plan for reducing SWP GHG emissions by increasing the use of renewable energy. It is a critical component of Update 2020 and DWR's overall plan for achieving its GHG reduction goals. As a state agency, DWR is required to achieve carbon neutrality in its operations by 2035 per Senate Bill 1203. As a component of carbon neutrality, DWR is required pursuant to Senate Bill 1020 to use 100% renewable energy and zero-carbon resources to serve their own facilities by 2035, which will be achieved by the REPP. Full operation of the project would not begin until 2040 at the earliest, which is five years after DWR is required to achieve the Senate Bill 1020 goal. Investment in renewable resources will play a critical role in attainment of the state's future carbon neutrality goals (California Air Resources Board 2022c:8). Decarbonization of the electric grid is a prerequisite to future widespread electrification that is being driven by various regulations like Advanced Clean Cars II, which requires all new passenger vehicles sold in California to be zero-emission by 2035. Statewide legislation for decarbonization, renewable energy deployment, and electrification will work collectively to transition the electric grid to zero-carbon resources. While continued advancements are necessary to transition the electric grid to zero-carbon resources, the state's statutory and regulatory commitments and associated investments support the conclusion that it can be achieved. Even the joint agency report cited in the comment concludes "the goals of SB 100 are achievable, though opportunities remain to reduce overall system costs" (California Energy Commission et al. 2021). At the agency level, DWR will achieve its zero-carbon electricity requirement through the REPP. Power purchase agreements (PPA) typically cover 15 to 20 years. Thus, renewable energy contracts that will support future operation of the project will be negotiated in the next few years and enforced by the REPP thereafter. DWR has successfully implemented the

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	"conflict with DWR's ability to implement" these measures. As such, the Draft EIR does not satisfy the requirements of Step 4 of Update 2020. Instead, the Draft EIR only addresses one of the 12 specific actions, i.e., DWR's SWP Renewable Energy Procurement Plan ("REPP"), also referred to by DWR as the Renewable Power Procurement Plan, as discussed in Step 5 below. Step 5: If implementation of the proposed project would result in additional energy demands on the SWP system of 15 GWh/year [Gigawatthours per year] or greater, the project must obtain a written confirmation from the DWR SWP Power and Risk Office stating that the Renewable Power Procurement Plan will be updated to accommodate the additional load resulting from the proposed project at such time as the proposed project is ultimately implemented. Update 2020 notes: "Individual projects that add 15 GWh/year of additional load to the SWP power portfolio could negatively affect DWR's ability to achieve its GHG emissions reduction goals if the procurement plan is not updated to accommodate the new demand." [Footnote 52: Update 2020, p. 65.] The Project would add an additional 993 GWh/year, a 35% increase over existing net energy consumption associated with SWP operation,[Footnote 53: Draft EIR, Table 22-12, p. 22-23.] and 66 times the threshold DWR identified as requiring an update of the Renewable Power Procurement Plan ("REPP"). The Draft EIR does not provide a "written confirmation" from DWR's SWP Power and Risk Office ("SWP PARO") stating that the REPP "will be updated to accommodate the additional load." Rather, the Draft EIR provides the following one-page	REPP since 2013 and has executed contracts to procure renewable energy from sources including solar, hydroelectric, geothermal, and landfill gas. The REPP is a core component of DWR's GHG reduction strategy. In addition, Update 2020 outlines seven operational, one construction, and 5 maintenance-related emission reduction measures that DWR has implemented or plans to implement to meet their GHG reduction goals. As noted above, applicable measures from Update 2020 are reproduced in Chapter 23, which concludes that the project would not conflict with their implementation. Collectively, the diverse strategies employed by DWR—from their first climate action plan through Update 2020—have reduced their GHG emissions by over 80% since 2010, exceeding statewide commitments and targets. DWR monitors and assesses future risks to resource adequacy as part of its ongoing implementation of Update 2020 and the REPP, and will continue to do so to meet Senate Bill 1020 and ensure 100% renewable energy and zero-carbon resources to serve their own facilities by 2035, including the proposed project.

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	letter from SWP PARO dated July 20, 2021: Use of the facility after construction of the Project is expected to result in additional operational energy demands on the SWP system in excess of 15 GWh/yr. This additional energy demand will become a part of the SWP's overall operational load and will be met by the resources included in the SWP's diversified power portfolio. Given the historical and existing trajectory of GHG emissions reductions associated with the SWP operations, the increase in energy demands associated with operation of the Project after construction is not expected to prevent DWR from achieving its GGERP goals and objectives. The SWP PARO will closely monitor the SWP operational energy demands and associated GHG emissions during operation of the facility and, if necessary, will update the Renewable Portfolio Procurement Plan ("REPP") to accommodate the additional load resulting from operation of the Project. The Environmental Impact Report/Environmental Impact Statement ("EIR/EIS") for the Project identifies modifications to the Renewable Power Procurement Plan detailing the additional gigawatts of renewable energy that DWR expects to purchase annually for operation of each of the analyzed Project alternatives in order to meet the GHG emissions reduction objectives included in the GGERP. [Footnote 54: Draft EIR, Attachment to Appx. 23E (emphasis added).] This letter, signed a year before the Draft EIR was published, neither identifies the additional load the Project would require (other than acknowledging that it would exceed 15 GWh/year), nor does it confirm that the REPP will be updated to accommodate this load. Instead, SWP PARO's letter states that the REPP will be updated "if necessary" without providing any	

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	substantial evidence that procurement of additional renewable energy is feasible by the time the Project goes online. Instead, it simply refers back to the Draft EIR for identifying the "additional gigawatts of renewable energy that DWR expects to purchase." The Draft EIR states: Given the scale of additional emissions the Delta Conveyance alternatives would add to DWR's total GHG emissions, DWR has evaluated the most likely method that it would use to compensate for such an increase in GHG emissions: modification of DWR's REPP. The DWR REPP (GHG emissions reduction measures OP-3 in Update 2020) describes the amount of additional renewable energy that DWR expects to purchase each year to meet its GHG emissions reduction goals. The REPP lays out a long-term strategy for renewable energy purchases, though actual purchases of renewable energy may not exactly follow the schedule in the REPP and would ultimately be governed by actual operations, measured emissions, and contracting. [Footnote 55: Draft EIR, p. 23-163.] The Draft EIR then allegedly "shows how the REPP could be modified" to accommodate the additional demand and "how additional renewable energy resources over what was programmed in the original REPP could be purchased between 2035 and 2045" in Table 23-71. The Draft EIR finds that the "net result of this change is that by 2045, DWR's energy portfolio would contain about 800 GWh or additional renewable energy (in addition to hydropower generated at SWP facilities). This renewable energy," the Draft EIR concludes "is more than the amount required by DWR's original REPP."	

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	Table 23-71 identifies the change in expected renewable energy purchases between the "Original REPP" and "New REPP" at an additional 4,502 GWh. In other words, the original (existing) REPP must be updated to accommodate the Project. Further, neither SWP PARO's letter nor the Draft EIR provide any support that this renewable power will be available when DWR is looking to contract for its additional demand. Thus, the Draft EIR's conclusion that the additional SWP energy demand for operation and maintenance and increased SWP pumping activities are consistent with Update 2020 to DWR's CAP are not supported by substantial evidence. Recent studies cast doubts on the ready availability of renewable (or zero carbon) resources at the time DWR will need to contract them. In 2021, the California Energy Commission ("CEC"), California Public Utilities Commission ("CPUC") and CARB released their first joint agency report [Footnote 56: Liz Gill, Aleecia Gutierrez, Terra Weeks, CEC, 2021 SB 100 Joint Agency Report, Achieving 100 Percent Clean Electricity in California: An Initial Assessment, CEC-200-2021-001, updated September 3, 3021; available at: https://www.energy.ca.gov/publications/2021/2021-sb-100-joint-agency-report-achieving- 100-percent-clean-electricity.] examining how the state's electricity system can become carbon free by 2045. The report is the initial analysis called for in Senate Bill 100 (SB 100, De León, Chapter 312, Statutes of 2018 [Footnote 57: SB-100 California Renewables Portfolio Standard Program: Emissions of Greenhouse Gases, September 10, 2018;	

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	https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB100.]), the state's landmark policy requiring that "eligible renewable and zero-carbon energy resources [Footnote 58: "Eligible renewable energy sources" are defined by the CEC and include biodiesel, biomass, biomethane, fuel cell, geothermal, small hydroelectric, conduit hydroelectric, water supply or conveyance system, incremental hydroelectric, municipal solid waste conversion, ocean thermal, ocean wave, solar, tidal current, and wind. "Zero carbon resources" do not generate any carbon dioxide when it is being used, while "net-zero carbon resources" may generate carbon dioxide, but other processes associated with the resource remove the same amount of carbon dioxide from the atmosphere. An example of a zero-carbon, but non-renewable resource is electricity generated by nuclear power. An example of a net-zero carbon resource can be using a fossil energy resource combined with carbon capture and storage technology if the capture and storage are sufficiently effective (currently it is not).] supply 100 percent of all electric retail sales to California end-use customers by end of 2045. The bill, dubbed "The 100 Percent Clean Energy Act of 2018," was signed into law in 2018 and calls for these resources to replace fossil fuels for generating electricity in the state. The agencies initial analysis demonstrated that while SB100 appears technically achievable, "additional analysis is needed to evaluate reliability and other factors more comprehensively." [Footnote 59: CEC, 2021 SB 100 Joint Agency Report, Achieving 100 Percent Clean Electricity in California: An Initial Assessment, CEC-200-2021-001, March 2021, pp. 16 and 102; available at: https://efiling.energy.ca.gov/EFiling/GetFile.aspx?tn=237167&DocumentContentId=70349.[see ATT 4 ATT 9]] The agencies found:	

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	"California will need to sustain its expansion of clean electricity generation capacity at a record-breaking rate for the next 25 years. On average, the state may need to build up to 6 gigawatts (GW) of new renewable and storage resources annually." By comparison, over the last decade the state has built on average 1 GW of utility solar and 300 megawatts (MW) of wind per year with a maximum annual build of 2.7 GW of utility-scale solar and 1 GW of wind capacity. [Footnote 60: CEC, 2021 SB Joint Agency Report, op. cit., p. 11.] Over the next three years, electricity providers regulated by the CPUC will add another 8 GW of clean energy resources." [Footnote 61: Ibid.]" The Western Electricity Coordinating Council ("WECC") summarizes future risks to resource adequacy and reliability in the West: "The West is experiencing rapid and significant changes in climate, weather, policy, energy consumption patterns, and technology that are challenging the industry's ability to reliably operate and maintain the grid. These changes, coupled with a rapidly transforming resource mix and push for electrification, create risks that will continue to grow over the next decade. These changes are affecting resource adequacy today and are expected to have increasing impacts in future years. [Footnote 62: WECC, Western Assessment of Resource Adequacy, 2022, p. 1; available at: https://www.wecc.org/Reliability/2022%20Western%20Assessment%20of%20Resource%20Adequacy.pdf.] Not only is resource adequacy risk growing, but it is spreading	

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	throughout the year beyond the peak load seasons. … new challenges like supply chain disruption, skilled workforce shortages, and siting issues may impede or delay the build-out of new resources. … Considering that the results of this assessment indicate that the number of planned resources may not keep pace with the increases in variability over the next 10 years, any delays in building planned resources could pose serious risks to reliability. [Footnote 63: Id., pp. 4 and 5.]" The agency expects that total electricity demand in the California/Mexico subregion grow by 10% between 2023 and 2031 and forewarns that imports may not be available when needed: "Additional action will be necessary to ensure future resource adequacy to address increasing demand and resource variability. In addition, reliance on imports will continue to be a challenge for the subregion.[Footnote 64: Western Assessment of Resource Adequacy, California and Mexico (CAMX), November 2022; available at: https://www.wecc.org/ResourceAdequacy/Pages/default.aspx.]" Thus, the Draft EIR's simplistic approach of assuming that an adequate amount of renewable energy will be available at the time DWR will want to contract, is questionable.	
525-167	[ATT 4] VI.B The Draft EIR Substantially Underestimates Greenhouse Gas Emissions from Project Construction and Operation	This information paraphrases content from Chapter 23, Air Quality and Greenhouse Gases, and summarizes assertions presented in individual comments from letter 525. Please see responses to comments 525-168 through 525-180 and Common

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	The Draft EIR estimates total greenhouse gas emissions of 499,102 metric tons CO2e for Project construction (including compensatory mitigation. [Footnote 65: Draft EIR, Table 23-69, pp. 23-160 and 23-161.] The Draft EIR estimates additional annual greenhouse gas emissions for Project operation at 325 metric tons CO2e for operations and maintenance, 254,501 metric tons CO2 for increased SWP pumping and 7.443 metric tons CO2e for displaced purchases of CVP electricity [Footnote 66: Draft EIR, Table 23-70, p. 23-162.] As discussed below, these estimates by far underestimate Project greenhouse gas emissions from these activities [see comments 168 through 180].	Response 15, Air Quality and Greenhouse Gases, regarding the technical methods for the estimation of GHG emissions. The information contained in the individual responses and Common Response 15 does not support the assertion by the comment that the EIR underestimates project construction and operation GHG emissions in Chapter 23.
525-168	[ATT 4] VI.B.1 The Draft EIR Fails to Quantify and Mitigate Significant Indirect Emissions from Concrete and Steel Manufacturing CEQA requires the assessment of whether a project would "generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment." (CEQA Guidelines § 15064.4 and Appendix G.) Indirect emissions are emissions that are a consequence of the activities of one entity but occur at sources owned or controlled by another entity. Here, a brief explanation with respect to direct and indirect emissions is helpful to understand accounting for upstream and downstream emissions in the context of the full "life cycle" of a project: most agencies rely on The Greenhouse Gas Protocol ("GHG Protocol"), the world's most widely used greenhouse gas accounting standards developed as a collaboration between the World Resources Institute ("WRI") and the World Business Council for Sustainable Development	The background information on direct and indirect emissions provided by the comment is not a comment on the contents for the EIR. References to The Greenhouse Gas Protocol are likewise not applicable to the project. The cited protocol is A Corporate Accounting and Reporting Standard, which provides "guidance for companies and other organizations preparing a corporate-level GHG emissions inventory" (World Resources Institute and World Business Council for Sustainable Development 2023). DWR is a state agency, not a corporation, and the emissions analysis presented in the EIR is for construction and operation of a water conveyance project, not a corporate-level GHG emissions inventory. Moreover, while The Greenhouse Gas Protocol is an available framework for the estimation of GHG emissions, none of the project-area air districts reference it in their CEQA guidelines (Sacramento Metropolitan Air Quality Management District 2021; San Joaquin Valley Air Pollution Control District 2015; Bay Area Air Quality Management District 2017). Lead agencies have discretion to select the model used to quantify GHG emissions, pursuant to CEQA Guidelines Section 15064.4. The models and emission factors selected by DWR and used to estimate GHG emissions are recommended by local air districts for the quantification of project-level GHGs in CEQA documents.

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	("WBCSD"). [Footnote 67: GHG Protocol, About Us; available at: https://ghgprotocol.org/about-us; and GHG Protocol, Guidance; available at: https://ghgprotocol.org/guidance-0.] The GHG Protocol establishes comprehensive global standardized frameworks to measure and manage greenhouse gas emissions from private and public sector operations, value chains, and mitigation measures. The GHG Protocol standards and guidance were established for implementation of mandatory and voluntary greenhouse gas reporting programs but have become a commonly adopted methodology that are also employed in environmental review documents. The GHG Protocol categorizes direct and indirect emissions into "scopes" as follows: • Scope 1: All direct greenhouse gas emissions (except for direct CO2 emissions from biogenic sources). [Footnote 68: GHG Protocol, A Corporate Accounting and Reporting Standard, March 2004, p. 25; available at: https://ghgprotocol.org/corporate-standard.] (For the Project this includes, for example, construction equipment exhaust, locomotives, marine vessels, operation and maintenance vehicles and helicopters, etc.) Direct emissions from Project construction and operation are always accounted for in CEQA review documents. • Scope 2: Indirect greenhouse gas emissions associated with the consumption of purchased or acquired electricity, steam, heating, or cooling. [Footnote 69: Ibid.] (For the Project this includes the electricity demand for construction, increase in SWP pumping, and displaced CVP electricity demand.) It is a long-standing practice in CEQA review documents to account for indirect greenhouse gas emissions associated with a	The comment assertion that the EIR should include and mitigate upstream material emissions is not correct. CEQA does not require evaluating embodied emissions from materials. Please refer to response to comment 525-170 and Common Response 15, Air Quality and Greenhouse Gases, regarding further information on embodied emissions.

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	project's electricity demand; these impacts are reasonably foreseeable impacts under CEQA Guidelines, § 15358(a)(2). • Scope 3: All other indirect emissions not covered in Scope 2, such as emissions resulting from the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity (e.g., employee commuting and business travel), outsourced activities, waste disposal, etc.). [Footnote 70: Ibid.] (For the Project this includes, for example, construction materials such as concrete and steel.) Scope 3 emissions are increasingly accounted for CEQA review documents for large projects; these impacts are reasonably foreseeable impacts under CEQA Guidelines, § 15358(a)(2). Figure 3 illustrates scopes and emissions across a value chain.[see ATT 4, Exhibit 10] The Project would require large quantities of concrete and steel for the conveyance infrastructure, including intakes, tunnels and shafts, pumping plant buildings, discharge pipes, and the cement-mortar-lined, welded steel aqueduct system. Manufacturing of these materials is carbon-intensive, i.e., it releases large amounts of greenhouse gases. Concrete, which is made from cement, aggregate, and water, in particular, has a very large carbon footprint resulting from fuel use-related combustion emissions and from calcination of the raw materials (mostly limestone and clay). Combustion for firing the raw materials accounts for about 40% and the calcination process of the raw materials for about 60% of total CO2 emissions from cement manufacturing. [Footnote 71: See, for example, Portland Cement Association, Carbon Footprint,	

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	0020-11-105; available at: https://www.cement.org/docs/default-source/th-paving-pdfs/sustainability/carbon-foot-print.pdf.][Footnote 72:Keegan Ramsden, Princeton University, Cement and Concrete: The Environmental Impact, November 3, 2020; available at: https://psci.princeton.edu/tips/2020/11/3/cement-and-concrete-the- environmental-impact.] These indirect Scope 3 (upstream) emissions should have been included in the Draft EIR's greenhouse gas emissions estimates for Project construction, but are not. (Consequently, the Draft EIR fails to require mitigation for these indirect emissions.)	
525-169	[ATT 4, EXHIBIT 10: Figure 3, GHG Protocol scopes and emissions across a value chain]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-170	[ATT 4] Instead [of quantifying and mitigating significant indirect greenhouse gas emissions from concrete and steel manufacturing], the Draft EIR provides the following in a footnote to Table 23-69, addressing greenhouse gas emissions from cement manufacturing: "Emissions generated upstream (e.g., material manufacturing) and downstream (e.g., recycling) of construction, otherwise known as "lifecycle emissions," are not included in the analysis, consistent with guidance from the California Natural Resources Agency (2018:41–42). While the origin of most raw materials is not known, and thus an emissions analysis would be speculative, construction of the project would require concrete from on- and off-site batch plants. Lifecycle emissions for cement and aggregate manufacturing, which is upstream of the concrete batching process, have been studied in various literature. Accordingly, for the purposes of disclosure,	The comment assertion that the quoted excerpt from the EIR is unsupported and not informative is incorrect. The text is fully cited, and the estimated range of emissions clearly presented in units (metric tons CO2e) is consistently used throughout the EIR. The text also presents the underlying analysis assumptions (concrete compression strength) and cites the source for the emission factors. The information is not given in a footnote, as stated by the commenter. The information is presented in the body of Chapter 23, Air Quality and Greenhouse Gases, as supplemental information to the results presented in table titled Total GHG Emissions from Construction of the Project Alternatives Due to Construction Equipment (metric tons CO_2e). As quoted by the commenter, the California Natural Resources Agency (CNRA) addresses lifecycle emissions in their 2009 and 2018 Final Statement of Reasons for updates to the CEQA Guidelines. Although the 2018 Final Statement of Reasons does not prohibit CEQA documents from including lifecycle emissions in project-level GHG inventories, as noted by the commenter, it affirms that impact analyses are subject to "the rule of

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	upstream CO2 emissions resulting from cement and aggregate manufacturing were quantified using emissions factors from Marceau et al. (2007:Tables E1b and G1b). It was assumed the precast tunnel segments would require a compression strength of 7,500 pounds per square inch and all other infrastructure would require a compression strength of 5,000 pounds per square inch. The analysis indicates that cement and aggregate manufacturing would generate 429,000 to 1.2 million metric tons CO2e, depending on the alternative. These emissions would be generated upstream of construction and through activities for which DWR has no practical control. Furthermore, CARB directly regulates the industrial emissions associated with cement manufacturing and thus those emissions would be regulated by CARB consistent with overall meeting of California GHG reduction targets over time. The emissions associated with cement manufacturing are therefore disclosed for informational purposes only. [Footnote 73: Draft EIR, Footnote a to Table 23-69, p. 23-161.]" First, this unsupported statement and reasoning, buried in a footnote, fail to adequately inform the public of the Project's greenhouse gas emissions. Second, the 2018 guidance from the California Natural Resources Agency ("CNRA") the Draft EIR cites as supporting the exclusion of upstream, or lifecycle, emissions from its estimates of total Project greenhouse gas emissions is not as unequivocal as the Draft EIR implies. CNRA's 2018 guidance (explaining the new subdivision 15126.2(b) of Appendix F to the 2018 Amendments to the state CEQA Guidelines) states: "Finally, new subdivision (b) cautions that the analysis of	reason" and should focus on effects "caused by the project." The 2009 Final Statement of Reasons highlights CEQA Guidelines section 15064(d), which clarifies that CEQA only requires analysis of direct and indirect project impacts. The CEQA Guidelines define an indirect physical change as "a physical change in the environment, which is not immediately related to the project, but which is caused indirectly by the project." The guidelines further clarify that "an indirect physical change is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project. A change which is speculative or unlikely to occur is not reasonably foreseeable." Caution against speculating indirect changes of a project is echoed in the excerpt from the 2009 Final Statement of Reasons provided in the comment. The CNRA recognizes the difference between projects that create general market demand for materials and those that would require additional industry manufacturing. The comment incorrectly characterizes the project as the latter, relying on an unsupported claim that high-strength concrete (i.e., above 6,000 pounds per square inch) is not manufactured in the general market. The extent to which a project would create abnormal demand or require industry-wide change depends on the size and characteristics of the industry, relative to the demand created by the project. California is the second largest cement producing state and in 2019, produced 10.1 million metric tons of cement (California Air Resources Board 2022b:18). Construction of the project (Alternative 5) would require production of 3.01 million cubic yards concrete (see Appendix 23B), with a maximum annual demand of 466,878 cubic yards. Based on the average material composition and weight of concrete (U.S. Environmental Protection Agency 2006:11.12-10), this equates to an annual maximum of 103,980 metric tons of cement, which is 1.0% of total production statewide in 2019. Of the maximum annual project demand, 52,599 metric tons would be high-strength cement. The latest version of the U.S. Geological Survey (2022:16.3) Minerals Yearbook indicates that

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	energy impacts is subject to the rule of reason, and must focus on energy demand caused by the project. This sentence is necessary to place reasonable limits on the analysis. Specifically, it signals that a full "lifecycle" analysis that would account for energy used in building materials and consumer products will generally not be required. (See also Cal. Natural Resources Agency, Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97 (Dec. 2009) at pp. 71-72.) [Footnote 74: CNRA, Final Statement of Reasons for Regulatory Action, Amendments to the State CEQA Guidelines, OAL Notice File No. Z-2018-0116-12, November 2018, pp. 41-42 (emphasis added), see Draft EIR, References, 23_AirQuality_GHG_Refs, Chapter 23, PDFs, "CNRA_2018.pdf;" available at: https://cadwr.app.box.com/s/3dvdp4kukehlzm82tvypqaqaymcogugz/folder/168799138563.]" Of note in this context is CNRA's use of the word "generally," which stems from the agency's cited December 2009 guidance. This earlier guidance explains with respect to "lifecycle" emissions: "Depending on the circumstances of a particular project, an example of such emissions could be those resulting from the manufacture of building materials. (CAPCOA White Paper, at pp. 50-51.) CEQA only requires analysis of impacts that are directly or indirectly attributable to the project under consideration. (State CEQA Guidelines, § 15064(d).) In some instances, materials may be manufactured for many different projects as a result of general market demand, regardless of whether one particular project proceeds. Thus, such emissions	high-strength cement comprised 5.4% of total nationwide cement sales. Applying this ratio to the California market (10.1 million metric tons) yields 545,400 metric tons, indicating that the maximum annual project demand for high-strength cement would comprise 9.6% of total production statewide in 2019. Demand during other years of construction would be less. Moreover, annual cement production in California is forecasted to grow (California Carbon 2017:4), and thus the faction of project demand at the time of construction (2026 to 2039) will be less than calculated above, which is based on 2019 statewide production values. For example, annual cement production in 2030 is forecasted to range from 14.2 to 20.3 million metric tons, with 17.0 million metric tons representing the base case projection from the historical trend (California Carbon 2017:4). Applying the same ratios as described above to this base case projection suggests the project would only represent about 5.7% of forecasted high-strength cement production. Accordingly, there are sound reasons to conclude that the project would not "spur the manufacture" or otherwise cause an indirect physical change within the California cement industry. Thus, consistent with CNRA guidance, upstream emissions from materials manufactured for the project and supplied by the general market are not directly or indirectly attributable to the project. The Supreme Court has also cautioned against lifecycle analyses in CEQA, particularly when the scale of lifecycle considerations associated with a project are minor. In their opinion on Save the Plastic Bag Coalition v. City of Manhattan Beach (2011) 52 Cal.4th 155, 175, the Supreme Court warns against "overreliance on generic studies of 'life cycle' impacts associated with a particular product." It further states that "when the scale of the project is such that the increase [use of a product] is plainly insignificant, the product 'life cycle' must be kept in proper perspective and not allowed to swamp the evaluation of actual impacts attributable to the project at

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	may not be “caused by” the project under consideration. Similarly, in this scenario, a lead agency may not be able to require mitigation for emissions that result from the manufacturing process. Mitigation can only be required for emissions that are actually caused by the project. (State CEQA Guidelines, § 15126.4(a)(4).) Conversely, other projects may spur the manufacture of certain materials, and in such cases, consideration of the indirect effects of a project resulting from the manufacture of its components may be appropriate. A lead agency must determine whether certain effects are indirect effects of a project, and where substantial evidence supports a fair argument that such effects are attributable to a project, that evidence must be considered. [Footnote 75: CNRA, Final Statement of Reasons for Regulatory Action, Amendments to the State CEQA Guidelines. Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97, December 2009, pp. 71-72 (emphasis added); available at: https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/Final_Statement_of_Reasons.pdf.[See ATT 4 ATT 10]]” The Project would indeed “spur the manufacture” of very large quantities of concrete and steel with specific properties (concrete compression strength, steel grade) that would not otherwise be manufactured as a “result of general market demand” if the Project would not proceed. For example, the pre-cast tunnel segments with a compression strength of 7,500 pounds per square inch would not be otherwise manufactured for use in the general market. As such, the Project, because of its enormous scale, qualifies as one of the exceptions to the general recommendation that upstream emissions need not be included in a CEQA analysis.	hand." The comment comparison of upstream GHG emissions from cement manufacturing for construction of the project to DWR’s average annual emission from construction and operations misconstrues the scale of the emissions disclosed in the EIR. The emissions inventory presented in DWR’s climate action plan, as cited by the commenter, does not include upstream emissions components, including embodied emissions from materials consumption. Moreover, the comment compares total upstream emissions from cement manufacturing over the 13-year construction period to those emissions reported for DWR’s construction and operations for a single year. Accordingly, the comparison in the comment is not valid, accurate, or meaningful. Since emissions from project cement consumption will be generated by commercial manufacturing plants, a more appropriate comparison would be to emissions generated by the California cement industry. According to CARB (2022b:18), the California cement industry generated 7.94 million metric tons of CO2e in 2019. Total upstream emissions from cement manufacturing for the project (Alternative 5) are 883,174 metric tons CO_2e (note that the comment cites 573,024 metric tons, which does not include emissions generated by onsite batch plants). Of this, maximum annual emissions are 136,476 metric tons CO_2e, which is 1.7% of the total industry estimate in 2019. As noted in comment, there are many state programs and policies for the reduction of GHG emissions that apply to the project. The EIR accounts for emission reductions that will be achieved by the programs at the project-level. For example, the quantification of GHG emissions from electricity consumption accounts for the State’s RPS targets. In the same way project electricity emissions will be reduced by the RPS, upstream emissions from cement manufacturing will likewise be reduced by the State’s Cap-and-Trade Program and other policies. The EIR’s recognition of future reductions that will be achieved by the state regulation is not used to

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	The Draft EIR estimates the upstream emissions from concrete manufacturing for construction of Alternative 5 at 573,000 metric tons CO2e. [Footnote 76: Spreadsheet "Concrete_Bethany.xlsm/Batch_GHG Offsite" provided by DWR (sum of "SMAQMD" and "SCAQMD").] To put the scale of these emissions in perspective: DWR's entire annual average greenhouse gas emissions for operations, construction, and maintenance and business activities based on 2014 to 2018 data were estimated at 689,000 metric tons CO2e; projected annual greenhouse gas emissions for 2030 without the Project were estimated at 489,000 metric tons CO2e. [Footnote 77: 2020 Update, Table 1, p. 3.] (Note: the Draft EIR sets a significance threshold for greenhouse gases of net zero; thus, these upstream emissions are significant and unmitigated.) Third, Draft EIR's argument that CARB directly regulates the industrial emissions associated with cement manufacturing consistent with overall meeting of California greenhouse gas reduction targets over time does not excuse DWR from including these emissions in its Project emission estimates for purposes of CEQA review. DWR is similarly regulated by a number of California regulations and regulatory programs intended to reduce greenhouse gas emissions (some also administered by CARB), but for purposes of CEQA, DWR must nevertheless quantify greenhouse gas emissions from its projects (as the agency recognizes in the Draft EIR for indirect greenhouse gas emissions from electricity consumption). For example, DWR is subject to the California RPS Program, established by Senate Bill 100 (de León, 2018), which requires that state-wide 60 percent of electricity retail sales come from renewable and carbon-free resources by 2030 and 100 percent by 2045. [Footnote 78: See CEC, Renewables Portfolio Standard	unequivocally dismiss analysis of embodied cement emissions, as alleged by the commenter. Embodied cement emissions are not included in the impact determination because they are not subject to CEQA review, as explained in this response and Common Response 15, Air Quality and Greenhouse Gases. The information is provided to characterize the layered and comprehensive context for the regulation of GHG emissions, and to recognize that the State has already adopted a reduction program from the cement manufacturing industry. This program is part of the State's larger framework for achieving its legislated GHG emission reduction targets. Regulation of the cement manufacturing industry through the Cap-and-Trade Program highlights the problematic nature of including embodied emissions in project-level CEQA reviews. This concern is shared by the AEP (2017:5-3), which states "inclusion of such emissions would result in double-counting of emissions." The AEP (2017:5-3) further recognizes that "while one could include cement manufacturing emissions associated with project concrete use, the addition of such emissions would not add any information necessary to make conclusions about the significance of project emissions compared to statewide reduction goals." This is because "in the case of cement, manufacturing is directly regulated by the state, both as a point source and under the California cap and trade regulation, and thus such emissions can be presumed to be controlled sufficiently through state regulation to meet the state's legislated GHG reduction goals" (Association of Environmental Professionals 2017:5-3). The comment compares the timing of statewide GHG reduction goals for the cement sector with the project construction schedule. This juxtaposition is not relevant to the EIR. As discussed in this response and Common Response 15, embodied emissions are neither compared to the project-level threshold nor are they included in the impact determination. Regardless, while there may be differences in the near-term timing of reductions achieved by the cement industry through statewide legislation,

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	- RPS; available at: https://www.energy.ca.gov/programs- and-topics/programs/renewables-portfolio-standard.] These regulations are implemented and administered by the California Energy Commission ("CEC") and the California Public Utilities Commission ("CPUC"). Other California regulations and regulatory programs applicable to DWR include the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas-Insulated Switchgear and the Cap-and-Trade Program, which are implemented and administered by CARB. [Footnote 79: See CARB, Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear; available at: https://ww2.arb.ca.gov/rulemaking/2020/sf6.] DWR developed its Climate Action Plan ("CAP") in part to satisfy these regulations and regulatory programs. Further, even if the Draft EIR's argument made sense, which it does not, the CARB regulations for the cement sector, required by Senate Bill 596 (Becker, 2021), which are currently under development, target a greenhouse gas emissions intensity 40% below baseline levels by end of 2035 and net-zero greenhouse gas emissions by end of 2045. [Footnote 80: See CARB Net-Zero Emissions Strategy for the Cement Sector Meetings & Workshops, SB 596 Cement Sector Net-zero Emissions Strategy, Kick-off Workshop, October 20, 2022; available at: https://ww2.arb.ca.gov/our-work/programs/net-zero-emissions-strategy-cement-sector/net-zero- emissions-strategy-cement.] According to the Draft EIR's construction schedule, Project construction would require concrete between the third quarter of 2027 and the end of 2037. [Footnote 81: Spreadsheet "Concrete_Bethany.xlsm/Schedule" provided by DWR.] Thus,	the regulations ultimately support the state's long-term climate change goal of carbon neutrality by 2045. The EIR applies the same threshold to evaluate project-level GHG impacts. The comment reference to CARB's Local Government Operations Protocol (LGOP) and discussion of emissions scopes is not applicable to the EIR. The LGOP "is a tool for accounting and reporting GHG emissions across a local government's operations" (California Air Resources Board 2010:3). DWR is a state agency, not a local government, and the emissions analysis presented in the EIR is for construction and operation of a water conveyance project, not a GHG inventory for government operations (whether at the local or state level). Likewise, the comment references to methods employed by other EIRs have no relevance to the EIR or analysis prepared for the project. A Lead agency has discretion to select GHG calculation methods that it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change" (CEQA Guidelines section 15064.4(c)). As discussed in this response and response to comment 525-168, the methodology employed by DWR and used to estimate project GHG emissions is consistent with agency guidance and CEQA case law. The informational disclosure of upstream GHG emissions from cement manufacturing is appropriate and meets CEQA requirements. Refer to Common Response 15 for additional discussion, including uncertainty associated with quantifying and disclosing embodied steel emissions. See also Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, for comments that request document recirculation.

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	most emissions associated with cement production for the Project would occur before the 40% interim target by end of 2035 would take effect. Specifically, the only structure requiring concrete beyond the end of 2035 is the surge basin for the Bethany Complex, which is scheduled for construction in 2036 and 2037 and would require only about 6% of the total quantity of concrete required for the Project. [Footnote 82: Spreadsheets "Concrete_Bethany.xlsm/Schedule" and "Concrete_Bethany.xlsm/Batch Information" provided by ICF. (BatchOptB2-7, Surge Basin Bethany Complex: 80,658 cubic yards)/(total concrete required for Project: 1,329,810) = 6.1%.] Fourth, in the past, some CEQA documents sometimes declined to account for Scope 3 greenhouse gas emissions from large projects, arguing it would amount to double counting. This line of reasoning confuses accounting for (and mitigating) greenhouse gas emissions for purposes of CEQA review with the potential for incorrect aggregation of emissions across entities for purposes of reporting programs. CARB explains with respect accounting for the three scopes for greenhouse gas reporting purposes in its guidance for land use agencies: "GHG accounting programs recognize that the Scope 2 emissions reported by one entity may also be reported as Scope 1 emissions by another entity. For example, the Scope 2 emissions from electricity use reported by a local government may also be reported as Scope 1 emissions by the regionally-serving utility that produced the electricity. This dual reporting does not constitute double counting of emissions as the entities report the emissions associated with the electricity production and use in different scopes (Scope 1 for the regionally-serving utility and Scope 2 for the local government).	

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	Emissions can only be aggregated meaningfully within a scope, not across scopes. By definition, Scope 2 emissions will always be accounted for by another entity as Scope 1 emissions. Therefore, Scope 1 and 2 emissions must be accounted for separately. This also applies to Scope 3 emissions (see Section 4.6.), as one entity's Scope 3 emissions is also another entity's Scope 1 or 2 emissions. Furthermore, multiple entities can report the same emission source as Scope 3 (e.g., both a product manufacturer and a product user could report the emissions associated with the extraction of a product's raw materials as Scope 3.) Thus, all scopes should be accounted for separately, and, in particular, Scope 3 emissions should not be aggregated across entities. Reporting both Scope 1 and Scope 2 emissions helps ensure that local governments create a comprehensive emissions profile that reflects the decisions and activities of their operations.[Footnote 83: CARB, Local Government Operations Protocol, For the Quantification and Reporting of Greenhouse Gas Emissions Inventories, Version 1.1, May 2010, p. 26, emphasis added; available at: https://ww2.arb.ca.gov/local-government-operations-protocol-greenhouse-gas-assessments.]" While reporting of Scope 3 emissions for purposes of greenhouse gas inventories is considered optional, [Footnote 84: Id., p. 25.] CEQA is not a greenhouse gas inventory but instead requires the assessment, disclosure, and mitigation of indirect impacts due to greenhouse gas emissions.	

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	Other agencies recognize that Scope 3 emissions must be accounted for in CEQA documents for large projects: • The University of California, Riverside, in their CEQA review for the 2021 Long Range Development Plan, accounts for Scope 3 emissions, which make up 32% of the Plan's greenhouse gas emissions (in this case, waste generation, business air travel, onsite transportation, water consumption, carbon sequestration, and construction). The Final EIR for the plan requires implementation of nine mitigation measures specifically to reduce Scope 3 emissions.[Footnote 85: University of California, Riverside, 2021 Long Range Development Plan, Draft EIR, pp. 4.8-10 and 4.8-11, and Final EIR, pp. 3-27 through 3-29; available at: https://pdc.ucr.edu/long-range-development- plan.] • The City of Santa Clarita, in its 2008 Final Environmental Impact Report review for the Henry Mayo Newhall Memorial Hospital Master Plan determined global climate change impacts due to Scope 3 emissions to be significant and unavoidable.[Footnote 86: City of Santa Clarita, Master Plan Environmental Impact Report, Henry Mayo Newhall Memorial Hospital, Section 8.0, Significant Unavoidable Environmental Effects Which Cannot Be Avoided if the Proposed Action Is Implemented, p. 8-2. https://www.santa-clarita.com/city-hall/departments/community-development/planning-division/environmental-impact-reports- completed/revised-henry-mayo-master-plan.] • To support airports' efforts to reduce carbon emissions, the Federal Aviation Administration ("FAA") recommends, as a first step, that airports prepare a greenhouse gas inventory that	

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	categorizes emissions in terms of Scope 1, Scope 2, and Scope 3 emissions, and then follow up with implementing measures for reducing the greenhouse gas emissions that are within the airport's direct control and also establish measures that indirectly influence the reduction of greenhouse gas emissions not controlled by the airport. [Footnote 87: U.S. Department of Transportation, FAA; Airport Carbon Emissions Reduction; available at: https://www.faa.gov/airports/environmental/air_quality/carbon_emissions_reduction/.] Accordingly, at least one recent CEQA review for airports, the 2019 Draft EIR for the San Diego International Airport Development Plan, accounts for indirect Scope 3 emissions. Since the majority of emissions associated with the proposed airport project are from sources that the airport operator has no control over, the lead agency found that the project would result in a significant unavoidable impact after implementation of proposed mitigation. [Footnote 88: San Diego County Regional Airport Authority, San Diego International Airport Development Plan, Recirculated Draft Environmental Impact Report, September 2019, SCH 2017011053; available at: https://ceqanet.opr.ca.gov/2017011053/3.] In sum, the upstream greenhouse gas emissions from cement and aggregate manufacturing required for construction of the Project, estimated at 573,000 metric tons CO2e for Alternative 5, [Footnote 89: Spreadsheet "Concrete_Bethany.xlsm/Batch GHG Offsite" provided by DWR.] have not been accounted for, are significant, and entirely unmitigated. The same is true for manufacturing of the large quantities of steel required for construction of the Project. Both should be quantified, accounted for, and mitigated in a revised and recirculated Draft	

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525-171	[ATT 4] VI.B.2 The Draft EIR Underestimates Indirect Emissions from Electricity Demand Construction of the Project would require the use of electricity for lighting, tunnel ventilation, boring, and certain types of equipment and for the operation of concrete batch plants. Construction of the Project is estimated to require up to 197 GWh/year. [Footnote 90: Draft EIR, Table 22-11, p. 22-22.] Long-term operation of Project would require electricity for SWP conveyance system energy operations (pumping, mechanical equipment (e.g., operable gates, screen cleaners, pumps, cathodic protection systems), supervisory control and data acquisition, and on-site buildings and lights). Operation of the Alternative 5, the Project, is expected to increase total net SWP energy consumption by 993 GWh/year, a 35% increase over existing conditions. [Footnote 91: Draft EIR, Table 22-12, p. 22-28.] The Draft EIR estimates indirect greenhouse gas emissions associated with the Project's electricity demand (Scope 2 emissions). [Footnote 92: Draft EIR, Appx. 23A, pp. 23-A11 through 23A-12 and pp. 23A-25 and 23A-26.] As detailed below [see comments 172-180], these emission estimates are not adequately supported and substantially underestimate greenhouse gas emissions associated with the Project.	This information paraphrases content from Chapter 23, Air Quality and Greenhouse Gases, and summarizes assertions presented in individual comments from letter 525. Please see responses to comments 525-172 through 525-180 and Common Response 15, Air Quality and Greenhouse Gases, regarding the GHG emissions analysis of project electricity consumption. The information contained in the individual responses and Common Response 15 does not support the assertion by the comment that the EIR substantially underestimates project electricity GHG emissions in Chapter 23.
525-172	[ATT 4] "a) Failure to Support Methodology for Adjusting eGRID Output Emission Factors to Account for Renewables Portfolio Standard and Senate Bill 100"	Carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) emission factors for the EIR analysis were obtained from EPA's 2019 Emissions & Generation Resource Integrated Database (eGRID) for the California/Mexico portion of the Western Electricity Coordinating Council (CAMX) (U.S. Environmental Protection Agency 2021:Table SRL 19). The

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	The Draft EIR uses emission factors from EPA's Emissions & Generation Resource Integrated Database ("eGRID") as the basis for determining greenhouse gas emission factors for future years (2025 through 2039). [Footnote 93: Draft EIR, Appx. 23A, pp. 23-A11 through 23A-12 and pp. 23A-25 and 23A-26.] The Draft EIR adjusts (decreases) the eGRID2019 total output emission factors [Footnote 94: The total output emission factors represent average emission factors for all plants generating electricity for the grid, including baseload, intermediate, and peaking units.] to "account for increases in the renewable energy mix due to the renewables portfolio standard and Senate Bill 100." [Footnote 95: Draft EIR, Appx. 23A, pp. 23A-11 through 23A-12.] The Draft EIR does not explain the methodology for these adjustments, nor does the methodology become obvious when reviewing the spreadsheets provided by DWR (the provided files do not include a formula for these adjustments). Table 4 [see ATT 4 Exhibit 1] compares the emission factors for CO2 calculated by the Draft EIR for 2025 through 2039 with the eGrid2019 emission factor for CO2 and the corresponding percent reduction compared to 2019 and year-over-year percentage reduction. As shown in Table 4 above, the Draft EIR assumes an 8.4% reduction in the CO2 total output emission rate between 2019 and 2025 (an average reduction per year of 1.4%), a year-over-year reduction of 5.2% in 2026 and 3.5% in 2027, and a linear year-over-year reduction of 4.6% from then on (2028-2039). It is unclear how these percentage reductions correspond to California's RPS targets, which require all electric load- serving entities to procure 60% of their electricity portfolio from eligible renewable energy resources by 2030 (with interim	emission factors represent the total annual emissions output, inclusive of renewable and non-renewable resources, from the generation and transmission of electricity in 2019, which was the latest year for which data were available at the time of the EIR analysis. GHG intensity factors for electricity generated by resources ineligible for the renewables portfolio standard (RPS) (i.e., fossil-fuel sources, nuclear, large hydropower, and unspecified) were calculated by dividing the 2019 total annual output factors by the statewide percentage of non-RPS eligible resources in that same year. Implementation of the RPS, pursuant to Senate Bills 100 and 1020, will increase the fraction of statewide electricity generated by eligible renewable resources overtime. Emission factors for the RPS target years (e.g., 2026, 2030) were calculated by multiplying the non-RPS eligible intensity rates (calculated from eGRID2019) by the percentage of energy delivered by non-RPS eligible resources, as mandated by the minimum RPS targets for each year. Percentages for non-target years were interpolated. This calculation method is consistent with guidance published by the California Air Pollution Control Officers Association (2021:C-29) and SMAQMD (Ramboll 2020:Table A-8). Appendix 23A, Mass Emissions Estimation Methodology, has been revised to explain the calculation method as requested by this comment. Please note that the total annual output emission factors from CAMX have been updated based on the latest eGRID data, which was published on January 30, 2023. See response to comment 525-176 and Common Response 15, Air Quality and Greenhouse Gases, for additional discussion regarding revisions to the electricity analysis. None of the revisions described in Common Response 15 or made in Appendix 23A resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to

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	targets of 44% by 2024 and 52% by 2027 [Footnote 96: See, for example: Western Interstate Energy Board, California Renewable Portfolio Standards; available at: https://www.westernenergyboard.org/inventory/california-renewable-portfolio-standards-rps/.]), and to SB100, which requires 100% renewable and zero carbon resources by 2045. [Footnote 97: California Public Utilities Commission, Renewables Portfolio Standard (RPS) Program; available at: https://www.cpuc.ca.gov/rps/.] The Draft EIR should be revised to clearly explain the methodology used to discount future greenhouse gas emission rates.	commit.
525-173	[ATT 4, Exhibit 11: Table 4, CO2 total output emission factors for California for 2025 through 2039 calculated by Draft EIR to account for RPS and SB100 compared to CO2 total output emission factor for California from eGRID2019]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-174	[ATT 4] b) Use of Improper eGRID Aggregation Level: State versus Subregion EPA's eGRID database aggregates plant-level data (generation, emissions, emission rates, resource mix, etc.) at several levels: state, balancing authority, eGRID subregion, North American Electric Reliability Corporation ("NERC") region, and nationwide. State-level data are developed by summing up the data for individual plants located within that state. [Footnote 98: EPA, The Emissions & Generation Resource Integrated Database, eGRID Technical Guide with Year 2020 Data, January 2022, pp. 34-35; available at: https://www.epa.gov/system/files/documents/2022-01/egrid2020_technical_guide.pdf.] eGRID subregions are	The comment is incorrect in the assertion that the EIR relied on state-level electricity emission factors. CO_2, CH_4, and N_2O emission factors for the EIR analysis were obtained from EPA's 2019 eGRID for the California/Mexico portion of the Western Electricity Coordinating Council (CAMX) (U.S. Environmental Protection Agency 2021:Table SRL 19). Please see also response to comment 525-172 for details. Accordingly, the EIR does not use an improper eGRID aggregation level or underestimate project electricity GHG emissions, as claimed by the commenter. Specific reference to use of emission factors for the CAMX region has been added to Appendix 23A, Mass Emissions Estimation Methodology.

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	identified and defined by EPA and are based on electrical grid attributes, rather than strict geographical boundaries. These subregions were developed to "limit the import and export of electricity in order to establish an aggregated area where the determined emission rates most accurately matched the generation and emissions from the plants within that subregion." [Footnote 99: Id., pp. 30-33.] As such, subregion data are more representative for estimating emissions than state-level data because they account for imports and exports. California is the largest net electricity importer of any state in the U.S. and imports about 25% of its electricity supply (2021: 24.3%, 2020: 26.5%, 2019: 23.4%). [Footnote 100: See EIA, State Electricity Profiles, California; available at: https://www.eia.gov/electricity/state/california/.] [Footnote 101: EIA, California Was the Largest Net Electricity Importer of Any State in 2019, December 7, 2020; available at: https://www.eia.gov/todayinenergy/detail.php?id=46156.] The applicable eGRID subregion for electricity consumption for the Project is CAMX (California/Mexico portion of the Western Electricity Coordinating Council), as shown in the map below [see ATT 4 EXHIBIT 12]. EPA recommends the use of eGRID subregion-level total output emission rates for estimating emissions associated with electricity use (Scope 2 emissions). [Footnote 102: Id., p. 29.] The Draft EIR instead relies on state-level data for California, which account only for emissions from plants located in California and do not reflect the actual electricity mix consumed within California. The Draft EIR provides no discussion why it deemed state-level data representative even though the Project would be supplied by the entire CAMX	

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	subregion. Review of the eGRID database shows that the aggregated greenhouse gas emission rates for the CAMX subregion are considerably higher than those for California. Specifically, the CO2 and CO2e output emission rates for the CAMX subregion for the past three available reporting years (2018 through 2020) were between 12.1% and 15.4% higher than those for California. (See Table 5, below [see ATT 4, EXHIBIT 13].) Thus, the Draft EIR substantially underestimates greenhouse gas emissions associated with electricity generation by relying on the state aggregation level instead of subregion aggregation level for its development of future emission factors.	
525-175	[ATT 4, Exhibit 12: Map of eGRID subregions of the Western Electricity Coordinating Council]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-176	[ATT 4] c) Use of Non-representative Emission Factors from Superseded Edition of eGRID EPA recommends using the most recent eGRID emission factors available at the time for ongoing work as the best practice. [Footnote 103: EPA, eGRID Questions and Answers, What eGRID Data Year Should Be Used? Available at: https://www.epa.gov/egrid/egrid-questions-and-answers.] Here, the Draft EIR relied on emission factors from EPA's 2019 edition of eGRID, eGRID2019 to determine greenhouse gas emission factors for construction and operation of the Project for future years. This version of eGRID has been superseded. EPA released an updated edition of eGRID, eGRID2020, which includes data for calendar year 2020 on January 27, 2022.	The comment contends that the version of eGRID (version 2019) used in the EIR electricity GHG analysis has been superseded and that the analysis should have relied on the most recent version of the model, which is cited in the comment as version 2020, although the model has since been updated again to version 2021. eGRID2021 was not released until after the close of the public comment period for the Draft EIR. However, DWR has elected to revise the electricity GHG analysis to confirm use of eGRID2021 would not change the GHG impact conclusions contained in the Draft EIR. Refer to Common Response 15, Air Quality and Greenhouse Gases, for additional discussion regarding revisions to the electricity analysis. The information presented in ATT 4, EXHIBIT 13: Table 5 with respect to the EIR analysis is misleading. Refer to response to comment 525-177 for additional details regarding this exhibit. The information that follows ATT 4, EXHIBIT 13: Table 5 is the commenter's

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	[Footnote 104: EPA, eGRID, Download Data, eGRID2020; available at: https://www.epa.gov/egrid/download-data.] This version of eGRID was available for six months before the Draft EIR was released on July 27, 2022. Review of data from these two eGRID editions shows that greenhouse gas output emission rates in the eGRID subregion CAMX rose substantially from 2019 to 2020 (the same is true for the California state-level aggregation). [Footnote 105: See also, EPA, eGRID, How Do eGRID2020 Subregion Rates Compare to eGRID2019? Available at: https://www.epa.gov/egrid/egrid-questions-and-answers.] Table 5 [see ATT 4, EXHIBIT 13] summarizes CO2 and CO2e output emission rates from eGRID2020 and the prior three eGRID editions, eGRID2019, eGRID2018, and eGRID2016) aggregated for California state-level and for the CAMX subregion. (Note: EPA did not publish eGRID data for 2017.) In addition, Table 5 shows the respective renewables and hydropower generation resource mix percentages. Table 5 shows that CO2 and CO2e output emission rates in the CAMx eGRID subregion in 2020 were 13% higher than in 2019. [Footnote 106: (2020: 232.9 g CO2/kWh) / (2019: 174.9 g CO2 /kWh) = 1.13; (2020: 233.8 g CO2e/kWh) / (2019: 206.5 g CO2e/kWh) = 1.13.] (On the California state aggregation level, CO2 and CO2e output emission rate in 2020 were 17% higher than in 2019. [Footnote 107: 107 (2020: 174.9 g CO2/kWh) / (2019: 204.8 g CO2/kWh) = 1.17; (2020: 175.6 g CO2e/kWh) / (2019: 205.5 g CO2e/kWh) = 1.17.]) This increase in greenhouse gas output emission rates for the electricity mix in the eGRID CAMX subregion (as well as in the state of California) from 2019 to 2020 was mostly attributable to a substantially	explanation of the table content. Much of this information is not a comment on the contents for the EIR. Moreover, as noted in response to comment 525-177, the assertion in ATT 4, EXHIBIT 13: Table 5 that the EIR relied on a state-level CO2 emission factor is incorrect. Accordingly, the commenter's analysis of emissions trends in ATT 4, EXHIBIT 13: Table 5 has no bearing on the adequacy of the EIR GHG electricity analysis. None of the revisions described in Common Response 15 or made in Chapter 23, Air Quality and Greenhouse Gases, resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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	lower contribution of low- and zero-carbon renewables generation (a 5% drop from 45% to 40%). Notably, the contribution of hydroelectric generation to the resource mix dropped by almost half from 16.1% in 2019 to 8.5% in 2020. [Footnote 108: See also, EPA, eGRID, How Do eGRID2020 Subregion Rates Compare to eGRID2019? Available at: https://www.epa.gov/egrid/egrid-questions-and-answers. (Hover over CAMX subregion for results.)] To offset the reduction in hydroelectric generation, particularly during the summer months, California purchases more electricity from neighboring markets and increases in-state natural gas generation, which increases emission rates. In 2020, the state grid increased its share of electricity generated by natural gas-powered facilities by 5% compared to 2019. [Footnote 109: EIA, Short-Term Energy Outlook Supplement: Drought Effects on California Electricity Generation and Western Power Markets, May 2022, p. 1; available at: https://www.eia.gov/outlooks/steo/special/supplements/2022/2022_sp_02.pdf.] Comparison to earlier editions of eGRID shows that 2019 was an outlier with a higher- than-average contribution of renewable and hydroelectric generation to the total electricity-generating resource mix. In fact, hydroelectric generation has become a less reliable resource as California and the West face more frequent and severe droughts. In 2021, hydroelectric generation in California was 48% below the 10-year (2011-2020) average. [Footnote 110: EIA, Drought Effects on Hydroelectricity Generation in Western U.S. Differed by Region in 2021; available at: https://www.eia.gov/todayinenergy/detail.php?id=51839.] (It remains to be seen whether DWR and the state of California	

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	will be able to achieve the aggressive RPS and Senate Bill 100 targets without reliable hydropower.) Therefore, the Draft EIR should not have assumed that 2019 output emission rates are representative to calculate future emission rates. In sum, by relying on the abnormally high output emission rates from renewable and hydroelectric generation from eGRID2019 rather than the more recent eGrid2020 or a representative multi-year average, the Draft EIR substantially underestimates Project greenhouse gas emissions from electricity generation.	
525-177	[ATT 4, Exhibit 13: Table 5, eGRID CO2 and CO2e output emission rates and resource mix percentages for renewables and hydropower generation for California state-level and CAMX subregion aggregation]	The information presented in ATT 4, EXHIBIT 13: Table 5 with respect to the EIR analysis is misleading. The comment asserts that the EIR analysis used a CO2 output emission rate of 174.9 g/kWh. The comment is incorrect. As discussed in response to comment 525-174, the EIR relied on emission factors for the CAMX subregion from eGRID2019. The annual CO_2 total output emission rate from eGRID2019 and used in the EIR analysis is 453.209 lb/MWh (U.S. Environmental Protection Agency 2021:Table SRL12), or 205.6 g/kWh. Note that the GHG analysis for the Final EIR has been revised to use the latest eGRID publication (eGRID2021) (see response to comment 525-176). The annual CO2 total output emission rate from eGRID2021 is 531.678 lb/MWh (U.S. Environmental Protection Agency 2023:Table SRL12), or 241.2 g/kWh. See also response to comment 525-176 for additional discussion on ATT 4, EXHIBIT 13: Table 5.
525-178	[ATT 4] d) Failure to Account for Transmission and Distribution Line Loss The Project would require an increase in electricity transmission and distribution resulting from construction and increased SWP electricity demand.	The comment assertion that the EIR does not account for operational T&D losses is incorrect. The energy values used in the operational GHG analysis account for T&D losses, and thus, operational electricity GHG emissions are not underestimated, as claimed by the comment. Specific reference operational T&D losses has been added to Appendix 23A, Mass Emissions Estimation Methodology.

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	Electricity generated in power plants must pass through the electric grid to reach the end user. This includes transfer through a large and complex system of high-voltage and low-voltage transmission lines, step-up and step-down transformers, and other equipment. Some percentage of electricity is lost in this transmission and distribution ("T&D") network. The power lost across the electric grid is referred to as "line loss" or "grid loss." The Energy Information Administration ("EIA") estimates that each year about 5% of generated electricity is lost nationally due to line loss, most of which is in distribution. [Footnote 111: EIA, Frequently Asked Questions (FAQs), How Much Electricity Is Lost in Electricity Transmission and Distribution in the United States? Available at: https://www.eia.gov/tools/faqs/faq.php?id=105&t=3.] eGRID output emission rates do not account for any line losses between the points of generation and the points of consumption [Footnote 112: EPA, The Emissions & Generation Resource Integrated Database, eGRID Technical Guide with Year 2020 Data, January 2022, p. 11 ("Users should take note that eGRID's emissions and emission rates are calculated at the sources of generation and do not account for losses from transmission and distribution infrastructures.") and p. 33 ("eGRID output emission rates do not account for any line losses between the points of consumption and the points of generation.); available at: https://www.epa.gov/system/files/documents/2022-01/egrid2020_technical_guide.pdf.] and the Draft EIR does not account for grid loss in its calculations, presumably, because	See also Common Response 15, Air Quality and Greenhouse Gases, for additional discussion regarding quantification of GHG emissions and operational electricity. The energy values used in the construction GHG analysis were based on direct equipment power consumption and did not specifically account for T&D losses. The construction electricity GHG analysis has been updated to account for T&D losses as requested by the comment. Revisions made to the GHG analysis for the Final EIR in response to this comment and resulting from other technical refinements are presented in Common Response 15. None of revisions described in Common Response 15 or made in Chapter 23 Air Quality and Greenhouse Gases, resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. It is worth noting that EPA guidance referenced in the comment for average line losses has been updated with an even newer version. EPA released the eGRID Technical Guide with Year 2021 Data on January 30, 2023 (Abt Associates 2023). The updated estimated gross loss factor for the western power grid is 4.4% (Abt Associates 2023:Table 3-6). This factor was inverted (1/4.4% = 1.046) for use in the revised construction GHG electricity analysis.

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	they are characterized as Scope 3 upstream emissions. As discussed in Comment IV.B.1 [see comments 168 through 170], for very large projects such as construction of the proposed water conveyance facility, these emissions must be accounted for and mitigated. EPA explicitly recommends including Scope 3 emissions associated with T&D in their guidance for using eGRID for environmental footprinting of electricity purchases. [Footnote 113: Justine Huetteman, Travis Johnson, and Jeremy Schreifels, EPA, Using eGRID for Environmental Footprinting of Electricity Purchases, updated: January 22, 2021; available at: https://www.epa.gov/egrid/egrid-environmental-footprinting.] EPA explains how to adjust eGRID emission factors to account for line losses: "To account for transmission and distribution line losses when applying eGRID output emission rates to electricity consumption within a certain region, consumption is divided by (one minus the grid gross loss [as a decimal]) (Table 3-6). [Footnote 114: EPA, The Emissions & Generation Resource Integrated Database, eGRID Technical Guide with Year 2020 Data, January 2022, pp. 34-35; available at: https://www.epa.gov/system/files/documents/2022-01/egrid2020_technical_guide.pdf.] Specifically, to account for indirect emissions associated with consumption of electricity (both from generation and from transmission and distribution line losses) divide the product of the electricity consumption and the generation based eGRID total output emission rates by (one minus the grid gross loss as a decimal). [Footnote 115: Id., p. 73.]	

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	The applicable region for purposes of estimating line losses for the Project is the Western interconnect power grid, where EPA estimates average gross line losses at 5.3%. [Footnote 116: Id., Table 3-6, p. 35.] Thus, greenhouse gas emissions from the Project adjusted for line loss are calculated as: Greenhouse gas emissions adjusted for line loss = (Electricity consumption × eGRID emission factor) / (1 - 0.053) = (Electricity consumption × eGRID Emission Factor) × 1.056 Thus, by failing to adjust eGRID emissions factors for line loss, the Draft EIR underestimates greenhouse gas emissions associated with electricity consumption by an additional 5.6%.	
525-179	[ATT 4: Exhibit 14: Electricity transmission and distribution diagram]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-180	[ATT 4] e) Greenhouse Gas Output Emission Rates Adjusted for eGrid CAMX Subregion, eGrid2020 Data Set, and Line Loss As discussed above, the Draft EIR substantially underestimates greenhouse gas emissions associated with Project electricity use because a) it relies on California state- level emission rates from eGRID; b) improperly relies on emission factors from eGRID2019; and c) does not account for line loss. Together, these incorrect assumptions result in underestimating the basis for calculating greenhouse gas emissions factors for Project electricity use by 41%:	The comment assertion that the EIR GHG analysis underestimates GHG emissions from project electricity use by 41% is incorrect. First, the EIR did not rely on state-level electricity emission factors from eGRID (please refer to response to comment 525-174 for additional details regarding the factors from CAMX). Second, while the EIR relied on eGRID2019, this was the most current version of the database when the air quality analysis for the EIR began (please refer to response to comment 525-176 for additional details regarding use of eGRID2019 and DWR revisions to electricity GHG analysis to confirm use of eGRID2021 would not change GHG impact conclusions). Third, the SWP and CVP operational energy values used in the EIR analysis account for T&D losses (please refer to response to comment 525-178 regarding additional details of T&D losses). It is acknowledged that the construction energy values used in the EIR did not specifically account

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	CO2e output emission factor used by Draft EIS based on eGRID2019 for California: 175.6 g/kWh CO2e output emission factor from eGRID2020 for CAMX subregion: 233.8 g/kWh CO2e output emission factor from eGRID2020 for CAMX subregion accounting for 5.3% grid loss = 233.8 g/kWh × 1.056 = 246.9 g/kWh (CO2e output emission factor from eGRID2020 with line loss: (246.9 g/kWh) / (CO2e output emission factor from Draft EIR: 175.6 g/kWh) = 1.41 Because the Draft EIR's mitigation measures do not account for grid loss, these 41% emissions above the Draft EIR's estimates are entirely unmitigated.	for T&D losses, as noted by the commenter. Revisions made to the GHG analysis, including refinements to the electricity emissions assessment, for the Final EIR in responses to comments and resulting from other technical refinements are presented in Common Response 15, Air Quality and Greenhouse Gases. As noted in Common Response 15, the revisions resulted in decreased annual emissions from construction and displaced purchases of CVP electricity between the start of construction to 2045. When isolating contributions from electricity consumption, the emissions results are 19% less for construction and 85% less for net CVP pumping under 2040 conditions, relative to what was disclosed in the Draft EIR for Alternative 5. The revisions to the EIR do not result in a new significant environmental impact or substantial increase in the severity of an environmental impact or require additional mitigation measures to which DWR was unwilling to commit.
525-181	[ATT 4] VI.C The Draft EIR Fails to Adequately Mitigate Greenhouse Gas Emissions According to the CEQA Guidelines, § 15126.4, mitigation measures must be feasible, roughly proportional, not inappropriately deferred, capable of being monitored or reported, fully enforceable, and based on substantial evidence. The Draft EIR proposes Mitigation Measure AQ-9 (Develop and Implement a GHG Reduction Plan to Reduce GHG Emissions from Construction and Net CVP Operational Pumping to Net Zero) to mitigate significant greenhouse gas emissions. Mitigation Measure AQ-9 commits to retaining a qualified consultant to develop this greenhouse gas reduction plan and lays out required plan contents, including a menu of feasible	This information summarizes assertions presented in individual comments from the letter. Please see responses to comments 525-182 through 525-188. The responses presented to these comments clarify how Mitigation Measure AQ-9 compiles with CEQA requirements regarding the contents and enforceability of mitigation. The responses further clarify that Mitigation Measure AQ-9 is supported by substantial evidence and constitutes valid CEQA mitigation that will reduce project GHG impacts to a less-than-significant level.

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	greenhouse gas mitigation strategies and implementation and enforcement procedures. [Footnote 117: Draft EIR, pp. 23-173 through 23-182.] As discussed below, the measure as written is not roughly proportional, inappropriately deferred, not fully enforceable, and not based on substantial evidence. In short, Mitigation Measure AQ-9 fails to ensure that greenhouse gases would indeed be reduced to net zero.	
525-182	[ATT 4] VI.C.1 Mitigation Measure AQ-9 Fails to Specify the Quantity of Greenhouse Gas Emissions from the Project that Must Be Mitigated Mitigation Measure AQ-9 specifies the quantity of greenhouse gas emissions that must be offset to net zero at "between 453,412 and 794,180 metric tons CO2e, depending on the alternative" and "an additional 3,750 metric tons CO2e" from the construction of compensatory mitigation restoration sites. Accordingly, the measure identifies a total reduction commitment of "up to 797,750 metric tons CO2 needed to meet the net zero performance standard." [Footnote 118: Draft EIR, p. 23-173.] This wording is not specific enough to support the Draft EIR's conclusion that Project impacts on climate change would be less than significant after implementation of Mitigation Measure AQ-9. The Draft EIR identified Alternative 5 as the preferred alternative, i.e., the Project, and therefore must provide mitigation to address the impacts of the Project. As such, Mitigation Measure AQ-9 must be revised to specify the required CO2e emission reductions for Alternative 5 instead of a range applicable to all alternatives. The Draft EIR quantifies these emissions at 499,012 metric tons CO2e for Project	The comment assertion that Mitigation Measure AQ-9 fails to specify the quantity of required GHG reduction is not supported by the language in the measure. As quoted by the comment, the measure specifically sets a performance standard of net zero emissions, which based on the analysis of the Draft EIR, is defined as up to 797,750 metric tons CO_2e. This value represents the maximum amount of GHG emissions estimated of any project alternative analyzed in the EIR. As noted by the comment, emissions estimated for the proposed project (Alternative 5) in the EIR are less than the maximum performance standard. Lowering the performance standard for Mitigation Measure AQ-9 to level of emissions estimated for the proposed project, as suggested by the comment, would narrow the scope of the measure and preclude sufficient environmental protection for project alternatives with greater emissions, should they be selected over the proposed project. The requested revision would therefore reduce measure effectiveness. The quantity of required reductions needed to meet the net zero performance standard for the proposed project (or selected alternative) will be expressly defined in a GHG Reduction Plan (Plan). Mitigation Measure AQ-9 outlines required content for the Plan, including identifying the total amount of required GHG reductions and the amount of reductions anticipated in each phase of the Plan (if developed and implemented over multiple phases). Annual reporting is required to ensure that the net-zero performance standard is achieved with full transparency and the project impacts are sufficiently mitigated to a less-than-significant level.

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	construction (including construction of compensatory mitigation) [Footnote 119: Draft EIR, Table 23-69, pp. 23-160 and 23-161, and Table 23-70, p. 23-162.], 254,501 metric tons CO2e annually for increased SMP pumping, and 7,443 metric tons CO2e annually for displaced purchases of CVP electricity. [Footnote 120: Draft EIR, Table 23-70, p. 23-162.] (As discussed in my comments above, the Draft EIR substantially underestimates greenhouse gas emissions, requiring multiple upward revisions of the underlying calculations, and rendering the mitigation inadequate to reach net zero.)	The comment references assertions presented in individual comments from the letter regarding the quantification of GHG emissions. Please see responses to comments 525-168 through 525-180 and Common Response 15, Air Quality and Greenhouse Gases regarding the technical methods for the estimation of GHG emissions. The information contained in these responses does not support the assertion by this comment that the EIR underestimates project GHG emissions.
525-183	[ATT 4] VI.C.2 Mitigation Measure AQ-9 Impermissibly Authorizes Reevaluation of Global Climate Change Impacts due to Project Greenhouse Gas Emissions and Improperly Defers the Development of a Mitigation Plan Mitigation Measure AQ-9 includes a "true-up" provision, at the election of DWR after Project approval, to adjust the quantity of greenhouse emissions the agency is required to mitigate: "The net zero performance standard may be achieved based on actual emissions calculations, as described below. The reduction commitment may therefore change based on project activities and adoption of new state regulations. Notably, if CARB's amendments to the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (SF6 Switchgear Regulation) are not adopted, DWR must reduce annual ongoing SF6 from electrical transmission beyond 2045… [Footnote 121: Draft EIR, p. 23-173.] …	The comment assertion that Mitigation Measure AQ-9 is improperly deferred and lacks specificity is inaccurate. As discussed in response to comment 525-182, Mitigation Measure AQ-9 outlines a performance criteria of net zero GHG emissions from project construction and displaced purchases of CVP electricity. The quantity of required reductions needed to meet this performance standard may be based on the emissions estimates in the EIR or actual emissions calculations at the time of implementation. Relying on future analysis to inform mitigation details is not deferral. CEQA Guidelines section 15126.4(a)(1)(B) states that "the specific details of a mitigation measure, however, may be developed after project approval when it is impractical or infeasible to include those details during the project's environmental review, provided that the agency (1) commits itself to the mitigation, (2) adopts specific performance standards the mitigation will achieve, and (3) identifies the type(s) of potential action(s) that can feasibly achieve that performance standard that will be considered, analyzed, and potentially incorporated in the mitigation measure." While the Draft EIR estimates annual GHG emissions, the precise magnitude of the impact will depend on may factors that are not known at this time, including the pace of construction, mix of equipment used by specific construction contractors, future reduction technologies, and new

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	The [GHG Reduction] Plan will identify the amount of GHG emissions anticipated in the covered phase, as well as emissions from prior phases (if applicable) and the projected total net emissions of the project. This Draft EIR presents an estimate of annual GHG emissions generated by project construction and displaced purchases of CVP electricity. Although this inventory could be used exclusively to inform the required mitigation commitment, the methods used to quantify emissions in the Draft EIR were conservative. They also do not account for any GHG reduction strategies that may be implemented by DWR pursuant to this measure. Accordingly, this Draft EIR likely overestimates actual GHG emissions that would be generated by the project. DWR may therefore reanalyze GHG emissions for any phase of the project to update the required reduction commitment to achieve net zero. An updated emissions analysis conducted for the Plan will be performed using approved emissions models and methods available at the time of reanalysis. [Footnote 122: Draft EIR, Mitigation Measure AQ-9, Section A(2) Plan Development, p. 23-174.]" This recalculation of reduction commitments would occur outside of CEQA review, preventing public comment. Mitigation Measure AQ-9 requires DWR to retain a "qualified consultant" to develop the proposed GHG Reduction Plan, which it defines as a "qualified professional firm where the supervising staff has at least 10 years of experience performing air quality and GHG analysis to assist with its review and approval of the Plan." [Footnote 123: Draft EIR, pp. 23-180 and	regulations that will influence the carbon content of the economy. Flexibility is thus required to ensure actual GHG emissions meet the net-zero performance standard, regardless of the emissions estimates presented in the Draft EIR. Mitigation Measure AQ-9 will be incorporated into an enforceable mitigation monitoring and reporting plan (MMRP) for the project. The measure outlines a menu of strategies that can feasibly achieve the emissions performance standard and requires ongoing analysis and verification. Accordingly, the measure is consistent with CEQA Guidelines 15126.4(a)(1)(B) and is not improperly deferred. The comment questions the transparency of future emissions calculations that will be performed to support implementation of Mitigation Measure AQ-9. The measure requires all analyses be conducted using approved emissions models and methods available at the time of the reanalysis. DWR will be required to report on quantified and achieved reductions annually. All reports will be reviewed by a qualified professional firm and posted on DWR's website to ensure accuracy, transparency, and ongoing opportunities for public review. The minimum qualifications outlined in Mitigation Measure AQ-9 for the reviewing professional firm are consistent with DWR's standard contract selection process. The comment does not provide alternative parameters for consideration. The comment questions why Mitigation Measure AQ-9 recognizes that the EIR emissions estimations do not account for future GHG reduction strategies. This information is presented to further emphasize the need for future analysis to inform mitigation details. The effectiveness of various mitigation strategies, as well as the development of new emission reduction technologies, will change over time, influencing actual GHG emissions generated by the project. Thus, while the performance standard of net-zero GHG emissions must be achieved, flexibility is needed in identifying the specific quantity of reductions and strategies employed to meet the standard. The EIR provides this supporting explanation for why

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	23-181.] However, considering the above-discussed problems with the Draft EIR's emission calculations, this provision does not inspire confidence and does not substitute for public review. Further, the note that the Draft EIR's emission estimates "also do not account for any GHG reduction strategies that may be implemented by DWR pursuant to this measure" confuses impacts and mitigation. Of course, the Draft EIR's emissions estimates do not include the effects of mitigation, that is the whole point of requiring mitigation for significant impacts in a CEQA document in the first place. Finally, as discussed in Comments VI.B.1 and VI.B.2 [see comments 152 through 163] above, the Draft EIR does not "overestimate actual GHG emissions." Rather, its assumptions incorporate unsupported and inappropriate assumptions and significantly underestimate Project greenhouse gas emissions. In sum, Mitigation Measure AQ-9 improperly defers the precise determination of whether Project impacts on climate change are significant until a future date and fails to precisely define the required mitigation measures.	mitigation details must be later refined in recognition of Golden Door Properties v. County of San Diego (2020) 50 Cal.App.5th 467 and similar cases. The comment references assertions presented in individual comments from the letter regarding the quantification of GHG emissions. Please see responses to comments 525-168 through 525-180 and Common Response 15, Air Quality and Greenhouse Gases, regarding the technical methods for the estimation of GHG emissions. The information contained in these responses does not support the assertion by this comment that the EIR underestimates project GHG emissions or that the EIR analysis is unsupported or inappropriate.
525-184	[ATT 4] VI.C.3 The Draft EIR's Proposed Greenhouse Gas Emissions Reduction Strategies Are Not Quantifiable Mitigation Measure AQ-9 provides a long list of on-site and off-site strategies to provide greenhouse gas emission reductions that "may" be included in the proposed Greenhouse Gas Reduction Plan. None of these measures are quantified with respective control efficiencies nor are they quantifiable as	The comment assertion that individual GHG reduction strategies outlined under Mitigation Measure AQ-9 must be quantified and more thoroughly developed is incorrect and not required by CEQA. As discussed in response to comment 525-183, Mitigation Measure AQ-9 meets the appropriate CEQA standards for specific mitigation details under CEQA Guidelines section 15126.4(a)(1)(B) and relevant case law. The overall effectiveness of Mitigation Measure AQ-9 is known and disclosed in the EIR (net-zero GHG emissions, up to 797,750 metric tons CO_2e based on the Draft EIR analysis). DWR is committed to achieving this net-zero performance standard, and

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	most simply require DWR's "support." [Footnote 124: Draft EIR, p. 23-174 through 23-177.] If quantification of these measures were possible, DWR should have included estimates of their control effectiveness in the Draft EIR. Given the many years it took the agency to prepare the Draft EIR, it is inexcusable to further delay development of quantifiable mitigation measures.	the EIR acknowledges that the final mitigation quantity (i.e., actual metric tons of CO_2e) may change overtime based future physical, regulatory, and technological conditions, which cannot be currently known. Quantification of individual actions that can feasibly achieve that performance standard is not required by CEQA and would be premature given that the selection of strategies and details necessary to accurately quantify reductions will be developed after project approval as part of the GHG Reduction Plan, which is permitted by CEQA Guidelines section 15126.4(a)(1)(B). The plan will ultimately identify the GHG reduction potential of each selected strategy. The comment expresses concern with the word "support," which is included in the titles of some off-site reduction strategies in Mitigation Measure AQ-9 (e.g., "Support Community Transit Programs"). The word "support" was purposely used in the strategy titles to recognize that DWR will work collaboratively with the entities identified in the strategy descriptions. The strategy descriptions clarify how DWR would fund or otherwise contribute to the off-site strategy to achieve GHG reductions.
525-185	[ATT 4] VI.C.4 The Proposed Greenhouse Gas Credit Programs Are Not Enforceable In addition to the above-discussed greenhouse gas reduction strategies, the Draft EIR proposes the use of greenhouse gas credits, which enable development projects to compensate for their greenhouse emissions and associated environmental impacts by financing reductions in greenhouse gas emissions elsewhere. "Greenhouse gas credit" is a generic term that refers to a reduction in greenhouse gas emissions and includes both greenhouse offsets and so-called forecast mitigation units ("FMUs"), which are measures that produce a future stream of greenhouse gas emissions reductions. Both are measured in terms of 1 metric ton of CO2e. Mitigation Measure AQ-9	The comment assertions that use of GHG credits to mitigate emissions occurring from the project are inconsistent with CEQA and not enforceable is incorrect. CEQA Guidelines Section 15126.4(3) specifically allow "off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions." The use of credits to mitigate GHG emissions resulting from project implementation follows CEQA Section 15126.4.3. Moreover, Mitigation Measure AQ-9 requires that GHG credits created for the project originate from a CARB-approved protocol or a protocol that is equal to or more rigorous than CARB requirements under 17 Cal. Code Regs. Section 95972. The selected protocol must demonstrate that the reduction of GHG emissions is real, permanent, quantifiable, verifiable, enforceable, and additional. Definitions of these terms are from 17 Cal. Code Regs. Section 95802(a). Verification that the selected protocol(s) meet these criteria

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	permits the use of both. [Footnote 125: Draft EIR, p. 23-178.] The proposed greenhouse gas credit program is inconsistent with CEQA and does not constitute valid mitigation for the Project's greenhouse gas emission increases. CEQA mitigation must provide certainty that the reductions will occur, that the claimed reductions are enforceable, and that the mitigation measures do not create additional impacts. [Footnote 126: Madera Oversight Coalition, Inc. v. Cty of Madera (2011) 199 Cal. App. 4th 48, 83 ["[T]he EIR must describe and discuss feasible mitigation measures for each significant environmental effect, provided feasible measures exist"); Gray v. Cty. of Madera (2008) 167 Cal. App. 4th 1099, 1116 [substantial evidence must show that mitigation measures will be effective and feasible]; CEQA Guidelines, §§ 15126.4, subd. (a)(1), 15091, subd. (b) (2); CEQA § 21081.6.] As discussed below, this is not guaranteed. a) Credits Registered with American Carbon Registry Mitigation Measure AQ-9 Section A.3.d, Greenhouse Gas Credits, requires that all greenhouse gas credits "must be created through a CARB-approved registry" and "originate from a CARB-approved protocol or a protocol that is equal to or more rigorous than CARB requirements under 17.Cal. Code Regs. Section 95972." [Footnote 127: Draft EIR, p. 23-177.] This measure and its proposed implementation are inadequate. First, the qualifier that credits "must originate from a protocol that is equal to or more rigorous than CARB requirements" is not enforceable as there is no requirement that CARB verify that this other protocol indeed is at least equal to its own	would not be provided by DWR, as alleged by the comment. Rather, Mitigation Measure AQ-9 requires all GHG credits will be verified by an independent verifier accredited by the ANSI National Accreditation Board or CARB, or an expert with equivalent qualifications to the extent necessary to assist with the verification. The information presented in the comment about GHG offsets generated on Twitchell and Sherman islands is misleading. As described in Mitigation Measure AQ-9, DWR previously developed an offset project with the CARB approved American Carbon Registry (ACR). This project is registered as "ACR410: Restoring Wetlands on California Department of Water Resources-Owned Areas of Twitchell and Sherman Island" (American Carbon Registry 2023). The project generated a total of 59,552 issued credits, of which 7,147 credits were issued to the ACR controlled buffer pool and 52,405 were issued to the project for use in mitigation. DWR has no intention, or indeed authority, to use the credits issued to the buffer pool (7,147). If pursued under Mitigation Measure AQ-9, DWR could only use the 52,405 issued credits for mitigation. A footnote has been added to Mitigation Measure AQ-9 to clearly reflect this distinction. The comment assertion that DWR's existing GHG offsets registered with the ACR are not equivalent to CARB-approved protocol requirements is unsupported and incorrect. 17 Cal. Code Regs. Section 95802(a) defines six requirements an offset must achieve to be approved by CARB for the California Cap and Trade Program. These requirements are reproduced in Mitigation Measure AQ-9, with the exception of Enforceable, which was by necessity amended to accommodate the use of offsets generated on the voluntary market. The documents provided on the ACR registry, which were verified and validated by the CARB approved lead verifier, Letty Brown of SCS Global, clearly document how the Restoring Wetlands on

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	protocols. (Current CARB-approved protocols include creating offsets from projects that capture, sequester, store, and otherwise offset carbon related to forestry, livestock management, ozone depleting substance reduction, rice cultivation, direct air capture, and other projects.) This verification cannot be left to the permitting agency with a vested interest in minimizing its costs. Second, the Draft EIR states that as of June 2021, "DWR has 59,552 credits registered with the American Carbon Registry (ACR). One credit is equal to a GHG reduction or GHG removal enhancement of 1 metric ton of CO2e." This suggests that DWR intends to use these credits for offsetting Project emissions. However, review of ACR's database (one of the three currently CARB-approved registries) shows that none of DWR's existing registered credits meet the requirement of originating from a CARB-approved (or more rigorous) protocol. According to ACR, all of DWR's registered greenhouse gas credits were generated by one project, i.e., "Restoring Wetlands on California Department of Water Resources-Owned Areas of Twitchell and Sherman Islands" (ACR Project No. 410), as shown in the following excerpt. [Footnote 128: ACR, Project Credits Issued; available at: https://acr2.apx.com/myModule/rpt/myrpt.asp?r=112.] The most recent accreditation document for DWR's restoration project provides the following project description: "The project is located in Sacramento County, California, USA, and is aimed at restoring palustrine emergent wetlands on Sherman and Twitchell Islands, similar to those that existed in	California Department of Water Resources-Owned Areas of Twitchell and Sherman Islands project meets and exceeds these six requirements (SCS Global 2020:13-17). The project documentation for these six criteria for the Restoring Wetlands on California Department of Water Resources-Owned Areas of Twitchell and Sherman Islands project is summarized below. 1. Real: GHG reductions and/or removals shall result from an emission mitigation activity that has been conducted in accordance with an approved ACR Methodology and is verifiable. ACR will not credit a projected stream of offsets on an ex-ante basis. The third party verifying/validating entity (SCS Global) reviewed the emission mitigation activity, as described in the project plan, to confirm that it conforms to the requirements of the methodology and will be verifiable if implemented as described (SCS Global 2020:14). 2. Additional: Every project shall use either an ACR-approved performance standard and pass a regulatory surplus test, or pass a three-pronged test of additionality in which the project must exceed regulatory/legal requirements, go beyond common practice, and overcome at least one of three implementation barriers (institutional, financial, or technical). The third party verifying/validating entity (SCS Global) has provided confirmation that the project meets all relevant additional requirements (SCS Global 2020:15). 3. Permanent: Project proponents shall assess reversal risk using ACR's Tool for Risk Analysis and Buffer Determination, and shall enter into a legally binding Reversal Risk Mitigation Agreement with ACR/Winrock that details the risk mitigation option selected and the requirements for reporting and compensating reversals. The third party verifying/validating entity (SCS Global) confirmed a total risk percentage of 12% using the ACR Tool for Risk Analysis and Buffer Determination as required by the ACR methodology (SCS Global 2020:15). Since the contract is legally binding, it is

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	the early part of the last century. Without the project, the previous agricultural and seasonal wetland uses would have been maintained in the project area. The overall objectives are to decrease CO2 emissions and soil carbon losses, creating at the same time habitat for wildlife and increased resilience and sustainability." The project includes the restoration of three wetland sites (Mayberry Wetland, East End Wetland, and Whale's Mouth Wetland) with a total project area of 1,712 acres. Restoration activities began in June 2010, [Footnote 129: State of California, Sacramento-San Joaquin Delta Conservancy, Restoring Wetlands on California Department of Water Resources-Owned Areas of Twitchell and Sherman Islands March 25, 2019, pp. 9 and 73; available at: https://acr2.apx.com/mymodule/reg/TabDocuments.asp?r=112&ad=Prpt&act=update&type=PRO&aProj=ipub&tablename=doc&id1=410.] i.e., more than a year before CARB adopted its first Compliance Offset Protocol for U.S. Forest Products in October 2011. [Footnote 130: CARB, Compliance Offset Protocols; available at: https://ww2.arb.ca.gov/our- work/programs/compliance-offset-program/compliance-offset-protocols.] (The first credit period is January 1, 2011 through December 31, 2011.) In fact, ACR's website lists the project methodology/protocol as "Restoration of California Deltaic and Coastal Wetlands" as opposed to "ARB Compliance Offset Protocol: U.S. Forest Projects." As such DWR's credits with ACR did not originate with a CARB-approved protocol. Further, even if DWR's credits with ACR were valid for offsetting Project emissions, which they are not, ACR did not	also enforceable. All projects must adhere to ongoing monitoring, reversal reporting, and compensation requirements as detailed in relevant methodologies and legally binding agreements. The third party verifying/validating entity (SCS Global) confirmed that the project plan includes a detailed Monitoring Plan relevant to the methodology (SCS Global 2020:15). 4. Quantifiable: SCS Global validated the methodologies to quantify GHG emissions and emission reductions in the baseline and project scenarios. Baseline GHG fluxes for the project were quantified using Eddy Covariance flux data that were published in peer-reviewed, scientific journals. The audit team independently quantified the project CO2 and CH4 emissions by downloading the Eddy Covariance flux data from the AmeriFlux website. The audit team verified the appropriateness of using eddy covariance data for quantifying GHG emission and reductions for wetland projects. To estimate project emissions, the eddy covariance technique was used to measure carbon update and release, as described in the project plan. The audit team verified that the DWR used the appropriate equations, emissions factors, and global warming potentials to calculate total emission reductions, which is adherent to the ACR Methodology. The team recalculated the final emission reductions and confirmed that they are without material discrepancy (SCS Global 2020:18-21). 5. Verified: This project was validated and verified by the CARB approved third party verifier, SCS Global and lead verifier Letty Brown (SCS Global 2020:16). 6. Enforceable: This project is registered on the CARB-approved ACR and the resulting credits are owned solely by DWR, which confirmed by the undisputed offset title that all offset projects must have confirmed by the third party verifier prior to registration with ACR (American Carbon Registry

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	issue the credits in the amount of 59,552 metric tons CO2e to the wetland restoration project. Rather, ACR discounted this quantity by a 12 percent buffer to account for uncertainty and risk. Thus, total credits issued to the wetland restoration project amount to 52,406 metric tons CO2e. [Footnote 131: SCS Global Services Report, Validation and Verification Report, American Carbon Registry, ACR410: Restoring Wetlands on California Department of Water Resources-Owned Areas of Twitchell and Sherman Islands, Reporting Period: 01 January 2011 to 31 December 2018, Prepared for: California Department of Water Resources, July, 2020, p. 26; available at: https://acr2.apx.com/mymodule/reg/TabDocuments.asp?r=112&ad=Prpt&act=update&type=PRO&aProj=ipub&tablename=doc&id1=410.]	2023). Hence, the offsets generated from Restoring Wetlands on California Department of Water Resources-Owned Areas of Twitchell and Sherman Islands project satisfy the requirement of being generated from a methodology that is equal to or more rigorous than CARB requirements under 17.Cal. Code Regs. Section 95972. Regarding potential impacts of carbon credits, the ACR requires that all projects develop and disclose an impact assessment to ensure compliance with environmental and community safeguards best practices (SCS Global 2020:16-17). Environmental and community impacts should be net positive, and projects must "do no harm" in terms of violating local, national, or international laws or regulations. Project proponents must identify in the GHG Project Plan community and environmental impacts of their project(s). Projects shall also disclose and describe positive contributions as aligned with applicable sustainable development goals. Projects must describe the safeguard measures in place to avoid, mitigate, or compensate for potential negative impacts, and how such measures will be monitored, managed, and enforced. Project proponents shall disclose in their Annual Attestations any negative environmental or community impacts or claims thereof and the appropriate mitigation measure (SCS Global 2020:16-17).
525-186	[ATT 4, Exhibit 15: Table of American Carbon Registry project credits issued]	The commenter provided this exhibit for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-187	[ATT 4] VI.C.4 The Proposed Greenhouse Gas Credit Programs Are Not Enforceable In addition to the above-discussed greenhouse gas reduction strategies, the Draft EIR proposes the use of greenhouse gas credits, which enable development projects to compensate for	The comment assertions that use of GHG credits to mitigate emissions occurring from the project are inconsistent with CEQA and not enforceable is incorrect. Refer to response to comment 525-185 regarding the adequate and appropriate mitigation measures included in Chapter 23, Air Quality and Greenhouse Gases, to reduce GHG emissions. The comment expresses concern that GHG credits do not yield actual

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	their greenhouse emissions and associated environmental impacts by financing reductions in greenhouse gas emissions elsewhere. "Greenhouse gas credit" is a generic term that refers to a reduction in greenhouse gas emissions and includes both greenhouse offsets and so-called forecast mitigation units ("FMUs"), which are measures that produce a future stream of greenhouse gas emissions reductions. Both are measured in terms of 1 metric ton of CO2e. Mitigation Measure AQ-9 permits the use of both. [Footnote 125: Draft EIR, p. 23-178.] The proposed greenhouse gas credit program is inconsistent with CEQA and does not constitute valid mitigation for the Project's greenhouse gas emission increases. CEQA mitigation must provide certainty that the reductions will occur, that the claimed reductions are enforceable, and that the mitigation measures do not create additional impacts. [Footnote 126: Madera Oversight Coalition, Inc. v. Cty of Madera (2011) 199 Cal. App. 4th 48, 83 ["[T]he EIR must describe and discuss feasible mitigation measures for each significant environmental effect, provided feasible measures exist"); Gray v. Cty. of Madera (2008) 167 Cal. App. 4th 1099, 1116 [substantial evidence must show that mitigation measures will be effective and feasible]; CEQA Guidelines, §§ 15126.4, subd. (a)(1), 15091, subd. (b) (2); CEQA § 21081.6.] As discussed below, this is not guaranteed. b) Carbon Offsets Fail to Demonstrate Additionality, Provide Permanence and Control for Leakage and Gaming At present, about 80% of available carbon offsets on the market in California originate from forest projects. [Footnote 132: CARB, ARB Offset Credit Issuance Table, updated	emission reductions. While critiques of the forest offset program have been issued, as summarized in the comment, they are not applicable to the project and have no bearing on DWR's ability to successfully mitigate project emissions with GHG credits. As described in response to comment 525-185, Mitigation Measure AQ-9 includes explicit requirements to ensure all GHG credits used for project mitigation are equal to or more rigorous than CARB requirements under California Code of Regulations, Title 17, Section 95972. The Restoring Wetlands on California Department of Water Resources-Owned Areas of Twitchell and Sherman Islands project demonstrates how credits previously issued to DWR are additional and provide permanence and control of leakage. As per the ACR methodology, no credits were issued until emissions reductions occurred. The emissions reductions were verified using Eddy Covariance flux data, which is a scientifically rigorous method of GHG data collection supported by the AmeriFlux network, created by the Lawrence Berkeley National Lab (SCS Global 2020:18-21). Additionally, the baseline GHG fluxes for the project were quantified using Eddy Covariance flux data that were published in peer-reviewed, scientific journals (SCS Global 2020:12). This highly rigorous data collection and monitoring methodology was used to confirm emissions reductions prior to credit issuance. As determined in the validation/ verification documents provided on the ACR registry, no additional impacts were identified and the overall impact of the project was determined to be net positive. The project's independent, third-party verifier, SCS Global, confirmed that the project will have net positive community and environmental impacts. (SCS Global 2020:16-17.) SCS Global also reviewed the demonstration of additionality, as set out in the project plan, and confirmed that the additionality requirements set out

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	November 23, 2022; available at: https://ww2.arb.ca.gov/our-work/programs/compliance-offset-program/arb-offset-credit-issuance.] Forest carbon offsets are being highly criticized for a variety of problems, including the risks that the carbon reductions will be short-lived, that carbon savings will be wiped out by increased logging elsewhere, and that the projects are preserving forests never in jeopardy of being chopped down, producing credits that do not reflect real-world changes in carbon levels. Critics assert that carbon offsets have repeatedly failed to reduce emissions and fail to demonstrate additionality, provide permanence, and control for leakage and gaming." [Footnote 133: Maya Golden-Krasner, Center for Biological Diversity, Letter to Liane M. Randolph, CARB, Re: Center for Biological Diversity Comments on Draft 2022 Scoping Plan Update, June 24, 2022, internal citations omitted; available at: https://www.arb.ca.gov/lists/com-attach/4347-scopingplan2022- U2FTZwZYVTYBMVIN.pdf.,][Footnote 134:Grayson Badgley, Jeremy Freeman, Joseph J. Hamman, Barbara Haya, Anna T. Trugman, William R. L. Anderegg, Danny Cullenward; Systematic Over-crediting in California's Forest Carbon Offsets Program, Global Change Biology, Volume28, Issue 4, February 2022, pp. 1433-1445; available at: https://onlinelibrary.wiley.com/doi/10.1111/gcb.15943.] A recent study, which used remote sensing via satellite, confirmed these findings, finding no real climate benefit from 10 years of forest carbon offsets in California. The study determined that carbon sequestration in California's 37 offset project sites is not any higher than in other areas and timber companies are logging as much as they did before. [Footnote 135: Shane R. Coffield, Cassandra D. Vo, Jonathan A. Wang, Grayson Badgley, Michael L. Goulden, Danny Cullenward, William R. L. Anderegg, and James T. Randerson, Using Remote	in the ACR Standard and methodology were met (SCS Global 2020:13-17). The project met the legal standard of exceeding regulatory/legal requirements, going beyond common practice, and overcoming at least one of three implementation barriers: institutional, financial, or technical. The audit team confirmed that continuation of the baseline land-use prior to the implementation of project activities was likely (SCS Global 2020:17). Based on its review, SCS Global determined that clear evidence was provided in the project plan that the GHG reduction activity is not required by any applicable and enforced federal, state, or local laws, regulations, ordinances, consent decrees, or other legal arrangements (SCS Global 2020:17). The credits were verified to meet the permanence standards required by ACR, with at 12% risk of reversal. To mitigate this risk, 12% of the total credits issued from this project were issued to the ACR buffer pool, which is held in reserve to mitigate any potential reversals that may occur from projects registered with ACR. No opportunities for leakage were identified in the project documentation (SCS Global 2020:16). Hence, the Restoring Wetlands on California Department of Water Resources-Owned Areas of Twitchell and Sherman Islands project is enforceable, has proven additionality, proven permanence metrics with implemented mitigation measures, has no identified leakage, and will result in net positive impacts. Additional carbon credits obtained by DWR pursuant to Mitigation Measure AQ-9 would follow an equally rigorous process. The comment cites a 2020 conference presentation that estimates the CEQA demand for offsets relative to the 2019 supply of U.S. voluntary market offsets. The doubt expressed in the comment over the market availability of carbon credits and ability of Mitigation Measure AQ-9 to achieve the net zero performance standard for the project is misguided for three reasons. First, the cited offset supply is based on an assessment of the national market. It does not include offsets generated globally, which

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	Sensing to Quantify the Additional Climate Benefits of California Forest Carbon Offset Projects, September 12, 2022; available at: https://doi.org/10.1111/gcb.16380.] Further, a technology review by the Massachusetts Institute of Technology ("MIT"), identifies a significant flaw with CARB's methodology to quantify emission credits: "All trees consume carbon dioxide, releasing the oxygen and storing the carbon in their trunks, branches, and roots. Every ton of carbon sequestered in a living tree is a ton that isn't contributing to climate change. And that thick coastal forest can easily store twice as much carbon per acre as the trees deeper inland. This math is crucial to determining the success of California's forest offset program, which seeks to reduce carbon emissions by preserving trees. The state established the program a decade ago as part of its efforts to combat climate change. But ecology is messy. The boundaries between forest types are nebulous, and the actual amount of carbon on any given acre depends on local climate conditions, conservation efforts, logging history, and more. California's top climate regulator, the Air Resources Board, glossed over much of this complexity in implementing the state's program. The agency established fixed boundaries around giant regions, boiling down the carbon stored in a wide mix of tree species into simplified, regional averages." MIT concludes that this decision has generated tens of millions	are allowed by Mitigation Measure AQ-9 so long as they meet the requirements under 17.Cal. Code Regs. Section 95972. Thus, a more applicable comparison for the project mitigation is to the global market, which transacted 493.1 million metric tons CO2e in 2021 (Ecosystem Marketplace 2022:4). This far exceeds the cited CEQA market demand of 20 million metric tons. Second, construction of the project would not begin until 2026, at the earliest, with the majority of GHG emissions occurring after 2030. The global voluntary market has been increasing since 2005, with considerable growth in the past five years due to increased government, institutional, and corporate decarbonization commitments, municipal climate action plans, the Paris Agreement, and the Carbon Offsetting and Reduction Schedule for International Aviation (Element Markets 2022:22-23). A recent study by Shell and the Boston Consulting Group (2023:5) forecasts the global voluntary market to be five times bigger by 2030, with an expected market size of 0.5 to 1.5 gigatons of CO_2. Third, GHG credits are just one strategy that may be used by DWR to meet the net zero performance standard for Mitigation Measure AQ-9. As described in the measure, DWR will prioritize selected strategies as: (1) on-site construction strategies; (2) off-site strategies; and (3) GHG credits. Thus, the project demand for GHG credits, if pursued as a strategy by DWR, would be less than the total reduction commitment.

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	of carbon credits with dubious climate value. According to an analysis by CarbonPlan, a San Francisco nonprofit that analyzes the scientific integrity of carbon removal efforts: "But CarbonPlan's analysis highlights a different issue, one interlinked with these other problems. Even if everything else about a project were perfect, developers would still be able to undermine the program by exploiting regional averages. Every time a polluter uses a credit that didn't actually save a ton of carbon, the total amount of emissions goes up. Far from addressing climate change, California's forest offsets appear to be adding tens of millions of tons of CO2 into the atmosphere on balance, undermining progress on the state's long-term emissions goals. 'When you strip away all the jargon, you're left with a faulty set of assumptions that leave the door wide open to issuing meaningless offset credits…'" [Footnote 136: James Temple and Lisa Song, MIT Technology Review, The Climate Solution Actually Adding Millions of Tons of CO2 into the Atmosphere, April 29, 2021; available at: https://www.technologyreview.com/2021/04/29/1017811/california-climate-policy-carbon-credits- cause-co2-pollution/] CarbonPlan estimates the state's program has generated between 20 million and 39 million credits that do not achieve real climate benefits. They are, in effect, ghost credits that did not preserve additional carbon in forests but did allow	

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	polluters to emit far more CO2, equal to the annual emissions of 8.5 million cars at the high end. These ghost credits represent nearly one in three credits issued through California's primary forest offset program, highlighting systemic flaws in the rules and suggesting widespread gaming of the market. [Footnote 137: CarbonPlan, Systematic Over-crediting of Forest Offsets; available at: https://carbonplan.org/research/forest-offsets-explainer.] Further, a September 2020 study by Elements Market, an offset provider for greenhouse gas mitigation under CEQA, found that only a very limited supply of in-state California greenhouse gas credits exists in the three carbon registries approved by CARB (ACR, Climate Action Reserve, and Verra). (Most offsets in California are registered und CARB's AB32 Cap & Trade Program and are not available for CEQA mitigation.) The study identified a total offset demand identified in CEQA EIRs of 20+ million tons and found that demand by far outpaced the supply of in-state voluntary greenhouse gas credits. In fact, the study estimated the entire total U.S.-wide voluntary market (i.e., not necessarily under a CARB-approved protocol) at only 15 million tons CO2e transacted or retired. [Footnote 138: Association of Environmental Professionals, How to Source GHG Credits as an Offsite Mitigation Measure under CEQA, September 23, 2020; available at: https://climateforward.org/wp-content/uploads/2020/03/AEP_LA_CEQA-GHG-Mitigation_Sept26_combined.pdf.] This casts doubt on the availability of offsets available for the Project. The Draft EIR should provide an updated analysis of offset (and FMU) availability.	

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525-188	[ATT 4] VI.C.4 The Proposed Greenhouse Gas Credit Programs Are Not Enforceable In addition to the above-discussed greenhouse gas reduction strategies, the Draft EIR proposes the use of greenhouse gas credits, which enable development projects to compensate for their greenhouse emissions and associated environmental impacts by financing reductions in greenhouse gas emissions elsewhere. "Greenhouse gas credit" is a generic term that refers to a reduction in greenhouse gas emissions and includes both greenhouse offsets and so-called forecast mitigation units ("FMUs"), which are measures that produce a future stream of greenhouse gas emissions reductions. Both are measured in terms of 1 metric ton of CO2e. Mitigation Measure AQ-9 permits the use of both. [Footnote 125: Draft EIR, p. 23-178.] The proposed greenhouse gas credit program is inconsistent with CEQA and does not constitute valid mitigation for the Project's greenhouse gas emission increases. CEQA mitigation must provide certainty that the reductions will occur, that the claimed reductions are enforceable, and that the mitigation measures do not create additional impacts. [Footnote 126: Madera Oversight Coalition, Inc. v. Cty of Madera (2011) 199 Cal. App. 4th 48, 83 ["[T]he EIR must describe and discuss feasible mitigation measures for each significant environmental effect, provided feasible measures exist"); Gray v. Cty. of Madera (2008) 167 Cal. App. 4th 1099, 1116 [substantial evidence must show that mitigation measures will be effective and feasible]; CEQA Guidelines, §§ 15126.4, subd. (a)(1), 15091, subd. (b) (2); CEQA § 21081.6.] As discussed below, this is not guaranteed.	The comment assertion that Mitigation Measure AQ-9 is not a valid mitigation measure under CEQA lacks substantial evidence and is not supported by the language in the measure. The mitigation measure does not simply assume that its implementation will reduce GHG emissions. Instead, it explains why the concrete mitigation actions identified in the measure will reduce such emissions and provides comprehensive substantiation detailing how net-zero emissions will be met. Annual reporting is required to describe the strategies that were implemented to achieve emissions reductions and ensure that the net-zero goal is achieved with full transparency. Because of the ongoing monitoring that is mandated by Mitigation Measure AQ-9, the total amount of required reductions will be informed by actual emissions monitoring (rather than an estimate). This emissions monitoring ensures that project-level benefits achieved by federal- or state-mandated regulations, such as SB 1020, are accurately reflected in the actual mitigation obligation at the time of implementation, thus negating the commenter's concern that the measure does not provide sufficient certainty of mitigation. Contrary to the comment assertion, Mitigation Measure AQ-9 outlines specific and enforceable standards to obtain carbon credits in the full amount identified by the reporting process. For years where GHG credits are purchased, the reports will include credit retirement verification, and the reports will be viewable by the public. The monitoring and reporting requirements require that DWR retain a third-party expert to assist with review and approval of annual reports for verification purposes. Thus, the use of credits through Mitigation Measure AQ-9 constitutes a feasible and enforceable mechanism to mitigate project GHG impacts. The use of credits is also consistent with CEQA Guidelines Section 15126.4 (c)(3), which states that mitigation measures for GHG emissions may include "offsite measures, including off-sets that are not otherwise required, to mitigate a project's emissions."

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	c) Current Ton-per-ton Greenhouse Gas Credits Are Not Equivalent to Damages Caused by Greenhouse Gas Emissions Another problem with the proposed ton-per-ton greenhouse gas credit program is that the price for a ton for credits (offsets and FMUs) available on the market is much less expensive than the cost to the environment resulting from the release of an additional ton of greenhouse gas equivalents into the atmosphere. This actual cost the environment can be quantified to as the social cost of greenhouse gases. The social cost of greenhouse gases is a metric that is used by the United States and other countries around the world to put an economic value on the damages caused by greenhouse gas emissions. The metric is an estimate, in dollars, of the economic damages that result from each additional ton of greenhouse gas emissions released into the atmosphere in any given year. (Federal agencies began regularly incorporating social cost of carbon estimates in benefit-cost analyses conducted under Executive Order 128661 in 2008.) The metric combines climate science and economics to help understand the benefits of reducing greenhouse gas emissions. The estimates of greenhouse gases estimate the value of the net harm to society associated with adding greenhouse gases to the atmosphere in a given year; they do not represent the cost of actions taken to reduce greenhouse emissions (known as the cost of abatement) nor the cost of greenhouse emissions reductions. In principle, the social cost of greenhouse gases includes the value of climate change impacts, including but not limited to, changes in net	The comment assertion that CEQA precludes mitigation that results in an environmental impact is incorrect. CEQA requires an environmental analysis, and if any impacts are identified, the method for addressing those impacts be discussed in the environmental document (CEQA Guidelines § 15126.4). Mitigation impacts are considered along with the facility construction, operations, and maintenance effects in determining the overall significance of the project. The commenter is referred to Chapter 23, Air Quality and Greenhouse Gases, Impact AQ-9, which concludes that impacts on GHG emissions from compensatory mitigation and other mitigation measures, combined with project alternatives, would result in a less-than-significant impact. The comment recommends DWR consider the social cost of carbon in mitigating GHG emissions. Much of the content in this section provides background information and is not a comment on the contents of the EIR. There is no legislation or mandate that requires DWR value the potential economic effects of GHG emissions. Likewise, none of the project-area air districts reference a social cost of carbon analysis in their CEQA guidelines (Sacramento Metropolitan Air Quality Management District 2021; San Joaquin Valley Air Pollution Control District 2015; Bay Area Air Quality Management District 2017). The suggestion to purchase offsets/FMUs at a ratio of 10 to 1 ignores the fact that the emission reduction projects funded through Mitigation Measure AQ-9 will reduce project GHG emissions to net zero, effectively eliminating the GHG footprint of the project and associated environmental (or socioeconomic) damages. Mitigation Measure AQ-9 safeguards against any temporal lag in the delivery of emissions reductions and the generation of project emissions. Specifically, any use of FMUs that results in a time lag between project emissions and their reduction must be compensated through a pro-rated surcharge of additional FMUs proportional to the effect of the delay. No additional mitigation is required - the project environmental commitments and mitigation measures comprise a comprehensive GHG mitigation package of

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	agricultural productivity, human health effects, property damage from increased flood risk and other natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services. It reflects the societal value of reducing emissions of the gas in question by one metric ton. Many of these damages from greenhouse gas emissions today will affect economic outcomes throughout the next several centuries. [Footnote 139: CARB, Draft 2022 Scoping Plan Update, May 20, 2022; available at: https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf.] (CARB addresses the social cost of carbon in its Draft 2022 Scoping Plan Update; [Footnote 140: Ibid.] DWR's CAP in contrast does not address social cost of carbon.) The Biden administration had been using a value of $51 per metric ton of CO2 at a 2.0 percent discount rate established by the U.S. government's Interagency Working Group on the Social Cost of Greenhouse Gases ("IWG"). [Footnote 141: EPA, Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990, February 2021; available at: https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf.] Recently, EPA proposed a sharply increased value of $190 per metric ton of CO2 at a 2.0 percent discount rate. [Footnote 142: EPA, Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances, September 2022; available at: https://www.epa.gov/environmental-economics/scghg.] (EPA estimates the social cost of carbon as $120, $190 to $340 per metric ton of CO2 using discount rates of 2.5 percent, 2.0 percent and 1.5 percent, respectively.	feasible strategies that will reduce GHG impacts to a less-than-significant level.

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	Discount rates reflect the weight given to future impacts of climate change. A higher rate means a lower dollar value is assigned to future impacts; a lower rate assigns more value to those future harms. In addition to carbon, EPA also calculates social cost values for methane and nitrous oxide.) In contrast, a spot check in October 2022 of offset prices offered by four retailers ranged from about $15 to 23 per metric ton CO2, i.e., about an order of magnitude lower. [Footnote 143: Atmosfair, gGmbH, Offset a Desired Amount of CO2; available at: https://www.atmosfair.de/en/offset/fix/, accessed October 27, 2022. (Offset cost per metric ton CO2: $22.92 (EUR23).)] [Footnote 144: Cool Effect, Inc., Buy Carbon Offsets; available at: https://www.cooleffect.org/, accessed October 27, 2022. (Offset cost per metric ton CO2: $14.62.)] [Footnote 145: Native, Green Bricks for Residential and Commercial Buildings, Madhya Pradesh, India; available at: https://native.eco/product/green-bricks-for-residential-and-commercial-buildings-madhya-pradesh- india/. (Offset cost per metric ton CO2: $15.50.)] [Footnote146: Terrapass, Business Carbon Offsets; available at: https://terrapass.com/product/business-carbon- offsets, accessed October 27, 2022. (Offset cost per metric ton CO2: $16.49.)] If carbon offsets will be used for mitigating the Project's significant greenhouse gas emissions, I recommend that DWR purchase offsets taking into account the social cost of carbon, i.e., purchasing and retiring offsets (and/or FMUs) at a ratio that takes into account the social cost of greenhouse gases (at least 10:1).	
525-189	[ATT 4] VII.Conclusions and Recommendation	This information expresses opinions of the commenter based on comments provided in an attachment to letter 525. Individual comments from the

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	As discussed herein, the Draft EIR's air quality and greenhouse gas analysis fails to meet minimum standards for disclosure of Project impacts under CEQA. I recommend that DWR substantially revise the air quality and greenhouse gas section and mitigation measures to meet applicable CEQA standards and recirculate the Draft EIR for public review, including all supporting spreadsheets, modeling files, and other supporting documentation.	attachment are addressed in these responses to the commenter's letter. The analysis contained in Chapter 23, Air Quality and Greenhouse Gases, and supporting appendices meets the CEQA requirement to make a good-faith effort at full disclosure of potential air quality and GHG impacts of the project. For the reasons discussed in response to the preceding comments, recirculation of the DEIR is not required.
525-190	[ATT 4] Please call me at (XXXXXXX or e-mail at XXXXXXX if you have any questions. I have attached a number of cited documents and included current weblinks to other documents cited in my comments; if you have trouble retrieving any of these documents, I will gladly make those documents available upon request.	This information provides general introductory text. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.
525-191	[ATT 4, ATT 1: Resume of Dr. Petra Pless.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-192	[ATT 1, ATT 2: Los Angeles Times article titled " Water District vote deals major blow to California's Delta tunnel project" dated September 19, 2017.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-193	[ATT 1, ATT 3: California Department of Water Resources "Economic Analysis of Stage I of the California WaterFix: Cost and Benefits to Urban and Agricultural Programs" dated February 12, 2018.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-194	[ATT 1, ATT 4: Los Angeles Times article "California moves ahead with one Delta tunnel, scaling back ambitious water delivery project", dated February 7, 2018.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.

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525-195	[ATT 1, ATT 5: Letter from Governor Brown to Board Members of the Metropolitan Water District of Southern California, April 9, 2018.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-196	[ATT 1, ATT 6: Agenda packet for the August 20, 2020 meeting of the Board of Directors of the Delta Conveyance Design and Construction Authority, August 20, 2020.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-197	[ATT 1, ATT 7: Department of Water Resources and Department of Fish and Game Report, "Risks and Options to Reduce Risks to Fishery and Water Supply Uses of the Sacramento/San Joaquin Delta", January 2008.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-198	[ATT 1, ATT 8: Letter from Jeffrey A. Michael, Ph.D., University of the Pacific, to DWR dated December 15, 2011, and response from DWR providing DRMS Phase 2, August 20, 2007 Draft Report, Section 18: Scenario Evaluation.]	The commenter is providing this attachment in support of their comments. Those comments are addressed in the responses to the commenter's letter.
525-199	[Repeated Attachment of ATT 1, ATT 8: Letter from Jeffrey A. Michael, Ph.D., University of the Pacific, to DWR dated December 15, 2011, and response from DWR providing DRMS Phase 2, August 20, 2007 Draft Report, Section 18: Scenario Evaluation.]	The commenter is providing this attachment in support of their comments. Those comments are addressed in the responses to the commenter's letter.
525-200	[ATT 1, ATT 9: Bay Delta Conservation Plan Draft EIR/EIS, Chapter 14, November 2013.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-201	[ATT 1, ATT 10: Section F.2. of the Evaluation of San Joaquin River Flow and Southern Delta Water Quality Objectives and Implementation, September 2016.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-202	[ATT 1, ATT 11: Draft Bay Delta Conservation Plan Statewide Economic Impact Report, August 2013.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-203	[ATT 1, ATT 12: Salinity and Crop Choice in the Sacramento-San Joaquin Delta; Final report submitted to The Delta Protection Commission, January 24, 2020.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.

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525-204	[ATT 1, ATT 13: Management of Salinity in Alfalfa, 2016.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-205	[ATT 1, ATT 14: Delta Adapts: Creating a Climate Resilient Future, published by the Delta Stewardship Council, 2021.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-206	[ATT 1, ATT 15: Appendix 16A of the Partially Recirculated DEIR for the Bay Delta Conservation Plan, 2015.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-207	[ATT 1, ATT 16: San Joaquin County Index, published by the University of the Pacific Center for Business and Policy Research, 2020.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-208	[ATT 1, ATT 17: The Record article titled, "Stockton metro area ranked No. 1 super commuter region", April 26, 2018.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-209	[ATT 4, ATT 2: San Joaquin Valley Air Pollution Control District Project Ambient Air Quality Analysis Applicability Determination under CEQA, June 12, 2018.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-210	[ATT 4, ATT 3: 2022 CARB Construction, Industrial, Mining and Oil Drilling Emissions Inventory, August 2022.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-211	[ATT 4, ATT 4: CARB Overview of Proposed Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation, October 5, 2022.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-212	[ATT 4, ATT 5: CARB approves amendments to Off-Road Regulation to further reduce emissions, November 17, 2022.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-213	[ATT 4, ATT 6: CARB Carl Moyer Program Guidelines 2017 Revisions Volume 1: Program Overview, April 27, 2017.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.

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525-214	[ATT 4, ATT 7: User Guide for CalEEMod Version 2022.1, Appendix G, Default Data Tables, April 2022.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-215	[ATT 4, ATT 8: CARB 2017 Off-Road Diesel Emission Factor Update for NOx and PM.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-216	[ATT 4, ATT 9: California Energy Commission 2021 SB 100 Joint Agency Report, Achieving 100 Percent Clean Electricity in California: An Initial Assessment, March 15, 2021.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-217	[ATT 4, ATT 10: California Natural Resources Agency Final Statement for Reasons for Regulatory Action; Amendments to the State CEQA Guidelines; Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB 97, December 2009.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-218	[ATT 5:] The attached comments addressing piecemealing issues are submitted on behalf of San Joaquin County.They supplement the County's more detailed EIR comments submitted separately to DWR.	This information describes the structure or organization of the comment letter. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.
525-219	[ATT 5:] These comments, submitted on behalf of San Joaquin County ("County"), identify other closely connected actions of the Department of Water Resources ("DWR"), some in pending litigation in which I represent the County, impermissibly piecemealed from DWR's separate analysis in the Delta Conveyance Project Draft Environmental Impact Report ("DEIR"). This letter supplements the County's more detailed comments on the DEIR submitted separately to DWR.	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.

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525-220	[ATT 5] CEQA Prohibits Piecemealing CEQA "prescribes how governmental decisions will be made when public entities, including the state itself, are charged with approving, funding—or themselves undertaking—a project with significant effects on the environment." (Friends of the Eel River v. North Coast Railroad Authority (2017) 3 Cal.5th 677, 712.) CEQA prohibits piecemealing and requires evaluation of the "whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable Indirect physical change in the environment." (14 Cal. Code Regs., section 15378(a); see also Bozung v. Local Agency Formation Com. (1975) 13.3d 263, 283-284 (preventing the submerging of environmental considerations by "chopping a large project into many little ones"); Burbank-Glendale-Pasadena Airport Authority v. Hensler (1991) 233 Cal.App.3d 577, 592 (same).)	The Delta Conveyance Project EIR has been prepared in compliance with CEQA and evaluates and makes an adequate and complete disclosure of potential impacts that may result from construction and operation of the proposed project and all alternatives. Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding analysis of the project as a whole in environmental analysis.
525-221	[ATT 5] DWR's Approval of Conveyance-Specific "Delta Program" Bond Resolutions The DEIR is not forthcoming about a key part of DWR's decision to anchor its "fundamental purpose" to "new diversion and conveyance facilities in the Delta," DEIR, 2-2, and to exclude all non-conveyance alternatives. DWR has already bound itself to include a Delta conveyance in order to qualify for project funding under its own bond resolutions, approved without any environmental review in August 2020. See, e.g., General Bond Resolution, § 101 (defining "Delta Program"). These are the subject of lawsuits in which San Joaquin County and others have filed numerous objections. (Sierra Club v. Department of	Please refer to Appendix 3A, Identification of Water Conveyance Alternatives, and Common Response 3, Alternatives Development and Description, regarding the alternatives screening process and development of the reasonable range of feasible alternatives evaluated in the EIR, as well as information regarding comment-suggested alternatives that are not evaluated in the Draft EIR. Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the discretion CEQA affords lead agencies in defining the project purpose and objectives and the scope of the purpose and objectives statements for the purposes of CEQA. As described in Chapter 3, Description of the Proposed Project and Alternatives, in the section titled Contract Amendments, the potential for contract amendments would not have impacts different than those

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	Water Resources, Sacramento Superior Court No. 34-2020-80003517 [lead case]; California Department of Water Resources v. All Persons, Sacramento Superior Court No. 34-2020-00283112 [validation action].) See Exhibit 1 [ATT 5 ATT 1] (Complaint); Exhibit 2 [ATT 5 ATT 2] (Answer of San Joaquin County, et al). The DEIR lacks, and DWR must provide, integrated analysis of project approval and financing that includes these resolutions, some of whose provisions may impair DWR's future ability to protect the environment. For example, although the viability of the tunnel project depends on challenged as well as still-forthcoming State Water Project (SWP) contract amendments, DWR has also already prohibited itself, in section 807 of its General Bond Resolution, from adopting "any amendment to the Water Supply Contracts" which would "materially adversely affect the security" of Delta conveyance revenue bonds. Faced with a future choice between protecting the environment and protecting investment in a Delta conveyance, this provision could bind DWR to the latter for decades into the future.	analyzed in for the Delta Conveyance Project and disclosed in the EIR. Also described in Chapter 3, DWR would operate the proposed project and its alternatives consistent with state and federal regulations to protect the environment. Please see Common Response 7, Implementation Considerations, regarding other issues associated with costs and financing which are not analyses required for CEQA. The bond resolution mentioned in the comment is separate from the environmental review process and does not limit DWR's ability to approve a project alternative, including the no project alternative, under CEQA.
525-222	[ATT 5] DWR's Approval of Conveyance-Facilitating Contract Amendments In December 2018, DWR approved a project of long-term SWP contract amendments, in part to extend contract terms from 2035-2042 through 2085. DEIR, p. 6- 25. These amendments also make substantive changes, including a redefinition of "facilities" that seeks to remove a key obstacle to bond financing for a Delta conveyance, as well as other potential new projects favored by some contractors. Exhibit 3 [ATT 5 ATT	DWR provided a complete and adequate project description of the whole of the project as described in Common Response 3, Alternatives Development and Description, and Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues. DWR performed an appropriate scope and level of impact analysis in the EIR on the project as a whole, as discussed in Common Response 1, including as appropriate SWP contracts. The EIR does include an analysis of contract amendments throughout the entire EIR and did not improperly exclude contracts (see the section titled Contract Amendments in Chapter 3, Description of the Proposed Project and Alternatives). DWR is not required nor obligated to provide drafts of contracts as part of the EIR

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	3](Letter of San Joaquin County, et al.) During 2018 legislative proceedings, DWR's Director, under Questioning, confirmed DWR "plans to use these amendments to finance" its Delta conveyance, referring to its then-current conveyance project. Id., p. 3. Litigation on these amendments is pending in the Third District Court of Appeal. (Department of Water Resources v. All Parties, No. C096316; Planning and Conservation League v. Department of Water Resources, No. C096304; North Coast Rivers Alliance v. Department of Water Resources, No. C096384.) Among the pending issues are whether DWR unlawfully avoided environmental impacts and piecemealed its analysis from its closely connected Delta conveyance decision-making. See Exhibit 4 [ATT 5 ATT 4] (Answer of San Joaquin County, et al.) The DEIR similarly avoids analysis of the Delta Conveyance Project in the crucial context of these long-term contract amendments. Finally, although the NOP for the Delta Conveyance Project indicated that any further Delta conveyance-specific contract amendments would receive environmental review in the EIR, the DEIR is entirely lacking any such specific analysis. Instead, the DEIR improperly assumes no specific analysis of those contract amendments is needed, and the DEIR fails to provide those potential contract amendments, even in draft form. CEQA review must be provided for the whole of the action, including any conveyance specific contract amendments. (See, e.g., Planning and Conservation League v. Department of Water Resources (2000) 89 Cal.App.4th 892, 915-920.)	preparation process or to meet CEQA requirements. Contract amendments will be negotiated with the appropriate parties, as described in Chapter 3, should DWR approve the proposed project. Please also see Common Response 7, Implementation Considerations, for additional information on SWP contract amendment process and the use of bonds to finance the project.
525-223	[ATT 5] Conclusion Without recirculation of a DEIR providing integrated analysis of	Please see detailed responses to comments to this letter in comments 525-1 through 525-222 regarding the issues summarized in this comment. As identified in the responses to this letter and the various Common Responses referenced, DWR has provided a full analysis of construction

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	all DWR's determinations needed to approve, fund, and undertake the Project, including the actions described above that are missing analysis in the EIR, DWR's review will fail elementary requirements of CEQA.	and operation impacts for all alternatives on resources described in Chapters 5 through 32 of the EIR and has met all CEQA requirements including appropriately describing the project and alternatives, and disclosing potentially significant environmental impacts, and proposing feasible mitigation measure to reduce potentially significant environmental impacts.
525-224	ATT 5, ATT 1: Complaint of California Department of Water Resources v. All Persons, Sacramento Superior Court No. 34-2020-00283112 [validation action], August 6, 2020.	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-225	[ATT 5, ATT 2: Answer of San Joaquin County, et al. regarding California Department of Water Resources v. All Persons, Sacramento Superior Court No. 34-2020-00283112 [validation action], October 29, 2020.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-226	[ATT 5, ATT 3: Letter of San Joaquin County, et al., December 11, 2018.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-227	[ATT 5, ATT 4: Response of San Joaquin County et al. in California Department of Water Resources v. All Persons, Sacramento Superior Court No. 34-2018-00246183, February 25, 2019.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-228	[ATT 6:] In addition to further piecemealing problems noted in other comment letters, the Delta Conveyance Project Draft EIR is piecemealed from DWR's prior analysis of its already approved water management project, which received a separate review and is the subject of pending litigation, and is also related to contract amendments. See California Water Impact Network, et al. v. California Department of Water Resources (Sacramento County Superior Court, No. 34-2020-80003492); North Coast Rivers Alliance, et al. v. Department of Water	DWR provided a complete and adequate project description of the whole of the project as described in response to comment 525-222. As described in Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, none of the criteria to recirculate the EIR have been met, given DWR's full and adequate compliance with CEQA through the preparation and publication of the EIR. Please also refer to Common Response 1 regarding the Bureau of Reclamation and operation of the CVP incorporated into baseline conditions, evaluation of the project as a whole, and discussion of cumulative impacts and the associated analysis methodology. DWR considered water transfers in Appendix 3H, Non-Project Water Transfer Analysis for Delta Conveyance. The pending

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	Resources (Sacramento County Superior Court, No. 34-2020-80003491). Without recirculation of a draft providing timely integrated analysis, the projects cannot fully account for the direct, indirect, and cumulative impacts of using the water management tools, including water transfers, in connection with the Delta Conveyance Project. Further documentation this problem is in the record for the noted water management causes, and in the attached files [see ATT 6 of ATT 1 through ATT 6 of ATT 6].	litigation cited in this comment is not related to the Delta Conveyance Project or the analysis in the EIR.
525-229	[ATT 6, ATT 1: Kelley M. Taber Letter to DWR, August 26, 2020.]	The commenter provided an attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-230	[ATT 6, ATT 2: Roger B. Moore Letter to DWR, August 27, 2020.]	The commenter provided an attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-231	[ATT 6, ATT 3: California Water Impact Network and AquAlliance vs. DWR, Verified Petition for Writ of Mandate, Superior Court of the State of California in and for the County of Sacramento, September 28, 2020.]	The commenter provided an attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-232	[ATT 6, ATT 4: Comments of California Water Impact Network and AquAlliance on the draft record and index provided by DWR, July 18, 2022.]	The commenter provided an attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-233	[ATT 6, ATT 5: Notice of Preparation of Environmental Impact Report for the Delta Conveyance Project, January 15, 2020.]	The commenter provided an attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
525-234	[ATT 6, ATT 6: Plumas County Flood Control and Water Conservation District comments on the Notice of Preparation of the Environmental Impact Report for the Proposed State Water Project Water Supply Contract Amendment for Water Management and California Water Fix, August 9, 2018.]	The commenter provided an attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.

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528-1	These comments on the July 2022 Draft Environmental Impact Report ("DEIR") for the Delta Conveyance Project ("project" "DCP" or "Tunnel") prepared by the California Department of Water Resources ("DWR") are submitted on behalf of Local Agencies of the North Delta ("LAND"). [Footnote 1: LAND is a coalition comprised of reclamation, water and levee maintenance districts covering about 100,000 acres in the northern geographic area of the Delta. Some of these agencies provide both water delivery and drainage services, while others only provide drainage services. These districts also assist in the maintenance of the levees that provide flood protection to homes and farms.] LAND is concerned about the many potentially significant impacts on the environment associated with the project. Additionally, the DEIR fails to meet basic requirements of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq. ["CEQA"]) with regard to the project description and the alternatives discussion. It is noted that many exhaustive comment letters are also being submitted by other entities that explain in detail serious concerns about the legal and scientific adequacy of the DEIR and associated documents. This letter does not attempt to catalog every possible defect in the DEIR and supporting documents. Due to the numerous deficiencies in the documents, LAND, along with a broad coalition of interested stakeholders, concur that the documents would need to be substantially revised and recirculated for public review before DWR could ever lawfully receive the numerous approvals necessary to carry out the project.	The comment assertion that the EIR does not meet CEQA standards and requirements is not consistent with the analyses in the EIR. Please refer to Chapter 2, Purpose and Project Objectives, regarding the project's purpose and objectives, including DWR's continuing commitment to operate the State Water Project as modified to include the Delta Conveyance Project in compliance with all state and federal water quality and environmental laws. Please refer to Common Response 3, Alternatives Development and Description, regarding the adequacy of the project description and the range of feasible alternatives considered. The EIR fully evaluates potential impacts in Chapters 7 through 32 of the EIR. As discussed in Volume 2, Chapter 1, Introduction, of the Final EIR, recirculation is not required. Responses to specific concerns raised by the commenter are addressed herein. Please refer to Volume 2, Chapter 2, Indices of Commenters and Index of Primary Forms, to locate the letter numbers of comments provided by other entities that are of interest. Responses to all comment letters are provided in Volume 2, Chapter 4, Response to Comments Tables.
528-2	Even if the DEIR is substantially revised, LAND [Local Agencies of the North Delta] has serious concerns about the fairness of placing such a large infrastructure project on existing	Please refer to Appendix 3A, Identification of Water Conveyance Alternatives, and Common Response 3, Alternatives Development and Description, regarding the alternatives development process and the

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	communities and farming operations when other options are available with fewer impacts on both the environment and existing communities. The project would entail forcing landowners to sell their land or have their land condemned; already the state has entered dozens of properties by force, under the temporary entry permit process, disrupting agricultural and other activities. During and after the lengthy construction period, multigenerational farming families would be challenged to continue farming in what is now an ideal agricultural region containing 738,000 acres of prime farmland that is largely protected from incompatible development. Landowners that do manage to remain in the Delta if the project is built would be adjacent to major land and water use changes that would alter existing conditions for the worse.	reasonable range of potentially feasible alternatives considered. The proposed project will have impacts on land use and agriculture in the Delta. The impacts, such as land use conflicts and loss of prime farmland, are disclosed, as required under CEQA, in Chapter 14, Land Use, and in Chapter 15, Agricultural Resources. The EIR proposes mitigation measures to reduce the effects of potentially significant impacts on agricultural resources. Contrary to the comment, DWR has followed all laws and regulations for obtaining lawful right-of -entry to property and has not, nor will in the future, enter private property by force. Please refer to Common Response 7, Implementation Considerations regarding the property acquisition process and obtaining right of entry access which would follow applicable laws.
528-3	In 1913, when the Los Angeles Aqueduct was completed and the Owens River reached a reservoir in the San Fernando Valley, William Mulholland famously said, “There it is. Take it.” One might think that in today’s world, especially in California, the ethics of similar engineering propositions that create sacrifice zones in one area for the benefit of another would be over. Alas, they are apparently not.	The comment does not raise a significant environmental issue relating to the proposed project or address the adequacy, accuracy, or completeness of the Draft EIR. This is not a comment on the contents of the EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.
528-4	I. Overview of Concerns Regarding Recycled Tunnel Project [These issues are addressed in detail in the comments following.] • The DCP would divert up to 6,000 cubic feet per second ("cfs"), of high-quality Sacramento River water, while still running the existing South Delta pumps almost the same amount of time. (DEIR, p. 3-145.) The project is a water grab on a monumental scale that turns water law priorities upside down by adding new State Water Project ("SWP") diversions upstream of thousands of other water diversions with more	Please refer to Chapter 3, Description of the Proposed Project and Alternatives, and Common Response 3, Alternatives Development and Description, for a discussion regarding the integration of the Delta Conveyance Project with the SWP and water rights. Contrary to the comment, the proposed north Delta intakes and existing south Delta diversions would not be operated at almost the same amount of time. Chapter 3 and Common Response 3 both describe the operations and operational criteria under which the Delta Conveyance Project would operate in compliance with all state and federal water quality and environmental laws. Further, operations do not include modifications to State Water Project reservoir operations upstream of the project. DWR would not

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	senior water rights. • Despite the rafts of paperwork provided in the EIR and associated documents, in virtually every case where a critical environmental or social issue is identified, the underlying analysis is insufficient to support the conclusions and inadequate to fully identify or weigh the project's impacts. • The level of detail in the DEIR is insufficient to constitute project level review of this massive project. While the scale of the project would make tiered environmental review more appropriate, this option was not pursued. • The Tunnel fails to reduce reliance on the Delta and would increase the capacity to take more water out of the Delta at great cost to the unique cultural, recreational, natural resources, and agricultural values of the Delta, in direct contradiction to the Sacramento-San Joaquin Delta Reform Act of 2009. (Wat. Code, § 85054.) Rather than a sustainable solution involving reduced demand and increased regional self-sufficiency and other 21st century solutions, the Tunnel would take water from sustainable farms with senior water rights and deliver it to out-of-basin contractors with lower priority water rights. While water use within the basin can take advantage of recycling the water several times as it flows through the system, once it is exported out of the basin, it is lost forever. This results in the loss of outflow, upon which the ecology of the Delta upon which the San Francisco Bay depends. The Tunnel would further reduce the existing outflow deficiencies, and short circuit the Sacramento River, causing untold ecological, agricultural,	increase storage withdrawal for exports, except flood releases, even though the proposed Delta Conveyance Project may provide additional diversion capacity. The project would not include modifications to Central Valley Project reservoir operations upstream of the project because Reclamation is not a participant in the project. The operational criteria described in Chapter 3 limits diversions to when hydrologic conditions have excess flows in the Sacramento River and when regulatory conditions allow. In other words, in periods of high-water flow excess water could be withdrawn but not beyond permitted volumes. DWR has followed, and would continue to follow, the water rights priority system of the State of California and would not turn water law priorities upside down as asserted by the comment. Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the scope of the analysis based on the appropriate level of detail, as well as the adequacy of the purpose and objectives statements for the purposes of the CEQA review. Please also refer to Common Response 8 regarding a discussion of the Delta Reform Act and the relationship of this Act to the Delta Conveyance Project. As described in Common Response 8, DWR is not solely responsible for reducing reliance on the Delta and the Delta Conveyance Project is consistent with Wat. Code Section 85054. All resources identified in the comment are fully evaluated in the EIR and feasible mitigation measures are proposed to reduce impacts where appropriate. Please see Chapter 12, Fish and Aquatic Resources; Chapter 13, Terrestrial Biological Resources; Chapter 15, Agricultural Resources; Chapter 16, Recreation; Chapter 19, Cultural Resources; and Chapter 32, Tribal Cultural Resources. In addition, as described throughout the EIR (e.g., Appendix 15B, Agricultural and Land Stewardship Considerations), alternatives and facility locations were evaluated prior to the development of the EIR to avoid or minimize disturbance to resources within the Delta. Please refer to Chapter 2, Purpose and Project Objectives, regarding the purpose of the project. Please refer to Common Response 3 regarding the development of the

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	economic, and social damage in the Delta.	reasonable range of feasible alternatives evaluated in the EIR. Regarding reasonably foreseeable actions that are considered part of the No Project Alternative, which include additional water conservation programs, water recycling projects, groundwater recovery projects, desalination of seawater or brackish groundwater, surface water storage, groundwater management, or water transfers and exchanges, that may be pursued by a variety of local, state and federal agencies, please refer to the Chapter 3 section titled No Project Alternative; Appendix 3C, Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions; and Common Response 4, No Project Alternative Description and Analysis. Please also refer to the following chapters, all of which contain analyses beyond the scope of CEQA evaluating socially related effects: Chapter 17, Socioeconomics; Chapter 29, Environmental Justice; and Chapter 34, Community Benefits Program Analysis.
528-5	II. The Project Description in the DEIR Fails to Meet CEQA Requirements (Ch. 3) The Project would be a massive new diversion including two intakes with a conveyance capacity of 6,000 cfs. (DEIR, p. 3-14.) That capacity is almost a third of the annual average Sacramento River flow of 21,464 cfs north of Courtland, the location of the proposed intakes. (DEIR, p. 5-3.) That capacity is almost half of the annual dry/critical Sacramento River flow of 12,484 cfs at that location. (Ibid.) [Footnote 2: Mean monthly flows at Freeport, upstream of the proposed new diversion are shown in the Draft EIR in Appendix 5 C, Table 5C.3.5.1 at p. 5C-30. In critical years, flows are below 10,000 cfs from April through November with the exception of June at 10,214 cfs.] The Tunnel would be 45 miles long. (DEIR, Table 3-2.) The Tunnel would have an inside diameter of 36 feet. (Ibid.) The project would increase deliveries, meaning diversions, by	As noted in response to comment 528-4, proposed operations of the Delta Conveyance Project would meet existing state and federal water quality and environmental laws and within DWR's existing water rights. DWR is not seeking to operate as described in the comment, please refer to response to comment 528-4 regarding integration of the Delta Conveyance Project and the existing south Delta facilities. In addition, DWR will continue to divert water consistent with its water right priority. Please refer to Common Response 3, Alternatives Development and Description regarding the integration of the Delta Conveyance Project and SWP and the series of figures that show how the operational criteria for Alternative 5 would be applied during excess flow conditions in critical water years. While there would be an increase in diversions, it would be during excess flow conditions such that all other regulatory and environmental laws would also be met. The project is consistent with the 1959 Delta Protection Act, 1931 County of Origin Law, and the Watershed Protection Statutes. DWR is required to respect senior water rights when operating the SWP, including water rights

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	543,000 acre-feet per year from 2,429,000 acre-feet per year on average, and by 316,000 acre-feet per year from 1,317,000 acre-feet per year in dry and critical water years. (DEIR, p. ES-51 [Table ES-4].) That represents an increase in diversions of about 18 percent in the face of diminishing available water due to climate change. California's Water Resilience Portfolio issued July 28, 2020, states rising winter temperatures will reduce mountain snowpack in the Sierra Nevada and Cascade ranges by 65 percent on average by the end of the century. (California Water Resilience Portfolio p. 14.) [Footnote 3: The California Water Resilience Portfolio can be accessed at https://waterresilience.ca.gov/wp-content/uploads/2020/07/Final_California-Water-Resilience-Portfolio-2020_ADA3_v2_ay11-opt.pdf] These increased deliveries and out-of-basin exports would violate multiple legal requirements: Water Code section 85021. "The policy of the State of California is to reduce reliance on the Delta . . ." established as a result of the Delta Reform Act of 2009; Delta Plan's policy WR P1, which requires newly proposed water supply programs, plans, or projects in the Delta that qualify as a "covered action" under the Council's regulatory authority to carry out a three-part analysis where, to demonstrate consistency with WR P1": • Have one or more water suppliers that would receive water from the proposed project failed to adequately contribute to reduced reliance on the Delta and improve regional self-reliance?	established under Water Code section 11460 et seq. (the Watershed Protection Statutes). The project would not change current regulatory requirements that protect the beneficial use of water. When exporting water from the Delta, DWR must comply with all applicable state and federal regulatory requirements, including environmental standards, laws, and regulations relating to Delta inflow and outflow, Delta water quality, fish protection, environmental needs, water rights, and the needs of other users, including in-Delta users. The State Water Board has also established water quality and flow requirements and limits on the rate of export of water that can be pumped by the state and federal pumping plants and is currently reviewing those requirements in its Bay-Delta Water Quality Control Plan to ensure beneficial uses are protected. Furthermore, the State Water Board considered consistency with the 1959 Delta Protection Act in adopting D-1641 and, if approved, the project will be operated in accordance with D-1641. Please see Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, for further information regarding the scope of analysis and the level of detail in the analysis and project description is appropriate and adequate to meet CEQA requirements. Please refer to Appendix 3E, Delta Reform Act Considerations, and Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, for information on the relationship of the Delta Conveyance Project to the Delta Reform Act and Delta Plan. After completion of the CEQA process, if DWR approves the project, DWR will begin the process to confirm and certify that the project is consistent with the Delta Plan.

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	• Has this failure significantly caused the need for the export, transfer, or use? • Will the export, transfer, or use have a significant adverse environmental impact in the Delta? The increased deliveries also conflict with several origin laws: 1. The County of Origin Law (1931). Codified at Water Code Sections 10500-10506. 2. The Watershed Protection Statute (1933). Codified at Water Code Sections 11460-11465. 3. The Delta Protection Act (1959) Codified at Water Code Sections 12200-12205. Delta Protection Act, enacted in 1959.[Footnote 4: https://www.waterboards.ca.gov/board_info/agendas/2013/oct/100813_7origin.pdf]	
528-6	A. The Project Description Is Inaccurate and Unstable The DEIR's project description and its explanation of the DCP's operations are likely inaccurate, misleading, and fails to consider the likelihood of incentivizing additional water transfers. CEQA requires that a project description be accurate. (County of Inyo v. City of L.A. (1977) 71 Cal.App.3d 185, 199.) An accurate project description is necessary for determining the scope of environmental review; inaccuracies may result in flawed environmental analysis. (See Sierra Club v. City of Orange (2008) 163 Cal.App4th 523, 533.) Further, a project description must be stable and finite. (County of Inyo v. City of L.A. (1977) 71 Cal.App.3d 185, 192.) "Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its	The comment's assertion that the project description is inaccurate and unstable is not supported by the content of the EIR. The EIR has been prepared in compliance with CEQA and adequately evaluates and discloses potential impacts on environmental resources to assist public, agencies, and decision-maker review of the EIR. Please refer to Common Response 3, Alternatives Development and Description, regarding the approach to describing the project and the adequacy of the project description. Please refer to responses to comments 528-4 and 528-5 regarding the proposed operations for the Delta Conveyance Project. The project is not being proposed to facilitate water transfers; however, the potential for transfers was considered and it was found that if implemented, the project unlikely to increase water transfers. Please refer to Chapter 6, Water

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	environmental cost, consider mitigation measures, assess the advantage of terminating the proposal . . . And weigh other alternatives in the balance." (South of Market Community Action Network v. City and County of San Francisco (2019) 33 Cal.App.5th 321, 332.) The DEIR's project description is neither accurate nor stable and therefore fails as an informational document. The DEIR states, "The north Delta intakes would operate in conjunction with the existing south Delta intakes. The proposed intakes would augment the ability to capture excess flows and improve the flexibility of the SWP operations such as for meeting the State Water Board D-1641 Delta Salinity requirements." (DEIR, p. 3-145.) The DEIR's modeling suggests that the north Delta intakes would only be utilized for roughly 13.5 percent of the Delta's total exports. (DEIR, p. 6A-5.) This low utilization rate indicates that the DEIR has provided low-end operational criteria, thus limiting the environmental impacts of the project.	Supply, which describes that California water law and the Central Valley Project Improvement Act promote water transfers, subject to certain protections. Chapter 6 concludes that the project is unlikely to increase the amount of water transfers, and there is currently adequate export capacity with existing SWP facilities. Therefore, the Delta Conveyance Project would not induce additional water transfers. Please see Appendix 3H, Non-Project Water Transfer Analysis for Delta Conveyance, regarding the consideration of water transfers and an analysis of water transfers at the north Delta intakes. Chapter 3 of the Final EIR, in the section titled Integration of North Delta Intakes with South Delta Facilities has been revised to clarify the use of excess flows. See also Common Response 3 regarding the operational flexibility achieved by the capacity to capture excess flows when available and within regulatory constraints.
528-7	The DEIR also states that it is not expected that operations would shift from the south Delta intakes to the north Delta intakes "unless there is an operational advantage to do so at DWR's discretion[.]" (DEIR, p. 3-145, bold added.) Thus, DWR has the ability to change the project at any time based on its own "discretion." This language allows DWR to utilize the north Delta intakes as it sees fit to provide an "operational advantage." This language creates an unstable project description because DWR would give itself the unilateral ability to drastically change the operations described and analyzed in the DEIR.	The claim that DWR would give itself unilateral ability to drastically change operations is a mischaracterization of the information presented in Chapter 3, Description of the Proposed Project and Alternatives. The comment's assertion that shifting diversions from south the north at any time would thereby change the project description mischaracterizes the description of operations. The north Delta intakes would only be operated under certain specific circumstances, as described in responses to comments 528-4 through 528-6. Please also refer to Chapter 3, Description of the Proposed Project and Alternatives regarding updated language describing how DWR could consider modified operations criteria based on information gained through the Delta Conveyance Monitoring Program. Please refer to the section titled Real-Time Operational Decision-Making Process in Chapter 3, Description of the Proposed Project and Alternatives.

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		DWR currently has the discretion to adjust operations in accordance with numerous regulations and criteria. The addition of the north Delta intakes would provide DWR with the operational flexibility to continue to comply with current and future regulatory requirements to sustain water supply and water quality and protect environmental resources.
528-8	B. The Project Description Fails to Account for the North Delta Intakes Being Utilized for Additional Water Transfers. The DEIR finds that existing facilities are sufficient to accommodate all water transfers in all water years. (DEIR, p. 3-147.) Thus, the DEIR concludes that "even though the project may add additional export capacity, it is unlikely to increase the amount of water transfers, since the current capacity is not even fully utilized." (Ibid.) This determination is short-sighted and likely erroneous. Appendix 3H further discusses the potential of the project to transfer water in addition to deliveries by the SWP. The Appendix concludes that: "[F]or the current facilities, available export capacity should be sufficient to move future water transfers, and adding the project facilities for all the alternatives is not expected to affect the amount of water transfers that may occur during any water year type. However, the project may make moving water transfers across the Delta more efficient as the carriage water for moving water transfers at the project facilities may be lower than the carriage water at the current SWP/CVP export facilities." (DEIR, p. 3H-8.) Chapter 3 and Appendix 3H inappropriately dismisses the enticement posed by a project that would allow	The availability of transfer supplies depends on many factors. Hydrologic conditions, the presence of willing sellers and buyers, market conditions, the timing of the year, and conveyance capacity typically all influence the occurrence of water transfers. Water transfers are performed between willing buyers and sellers and DWR's role would be limited to conveying the water through the SWP if capacity is available as required by law. Furthermore, there are limits on the quantities of water that can be transferred. Therefore, the claim that the project would entice water transfers is a mischaracterization of how and when transfers occur and a mischaracterization of the project. DWR includes an appropriate consideration of water transfers in the EIR. As described in Appendix 3H, Non-Project Water Transfer Analysis for Delta Conveyance, the volume of carriage water could decrease because of the potential use of the north Delta intakes for a water transfer, and the effects of reduced carriage water requirements are addressed in the appendix and relevant chapters in the EIR. Furthermore, as described within Chapter 3, Description of the Proposed Project and Alternatives, the Delta Conveyance Project does not include water transfers in the project description and would operate within the criteria and parameters described in the EIR, permits, and to meet regulatory standards. Use of the north Delta intakes for water transfers would not change the operations as described in Chapter 3 and would be subject to separate permitting processes.

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	for water transfers without the addition of carriage water. According to references cited in Appendix 3H regarding carriage water requirements: "Since 2008, carriage water has varied between 20 and 35 percent of the transfer amount depending upon hydrology and other operational parameters."[Footnote 5: The correct link to the Draft Carriage Water Overview for Non-Project Water Transfers (October 2019) is: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/State-Water-Project/Management/Water-Transfers/Files/Draft_CarriageWaterOverview_20191101_ADA.pdf.] Thus, a water transfer of 1,000 acre-feet ("af") would require 200-350 af of additional water added to meet DWR carriage water requirements. Thus, it is reasonably foreseeable that to avoid carriage requirements, would-be water transferors and transferees would choose to use the Delta Tunnel for their transfers, rather than conveying the transfer water through Delta channels to the existing SWP and CVP pumping facilities. This regime change would likely result in a wholly different operation of the north Delta intakes not analyzed in the DEIR. The failure to analyze the environmental impacts of increased water transfers is a violation of CEQA. (See CEQA Guidelines, § 15151.)	
528-9	III. The DEIR's Alternatives Analysis Is Flawed (Ch. 4) A. The North Delta Priority Is Not Properly Analyzed as a Project Alternative The DEIR implies that the new intakes would only be used after the existing South Delta intakes were used to their maximum extent (South Delta Priority). (DEIR, p. 3- 145.) However, Appendix 4B-1 North Delta Diversion Priority Sensitivity	As explained in Appendix 4B, North Delta Diversion Priority Sensitivity Analysis, this analysis was performed to provide decision-makers and the public with information about whether limited real-time shifting would result in any appreciable differences in impacts on surface water or water supply than those disclosed in the main body of the EIR. As described in Appendix 4B, North Delta Diversion Priority Sensitivity Analysis, the discussion includes more shifting than would be reasonably foreseeable, by prioritizing diversions at the proposed north Delta intakes over the existing

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	Analysis states: "The scenario discussed herein includes more shifting than would be reasonably foreseeable, by prioritizing diversions at the proposed north Delta intakes over the existing south Delta intakes during certain times of the year." (DEIR, p. 4B-1) But it is important to note that the "South Delta Priority" operational scheme already includes some "revised" priorities: "Shifting of exports from south Delta facilities to proposed north Delta intakes has trade-offs and may occur if there would be operational efficiencies to do so at California Department of Water Resources' discretion under limited circumstances (e.g., to provide additional real-time south Delta fish protections; to reduce salinity at Jersey Point)." (DEIR, p. 4B-1.) Efficiency is undefined for purposes of this analysis and what that means for the project operations is entirely at DWR's discretion. In the narrative, efficiency includes both salinity control and fisheries considerations. (Ibid.) Alternative 5 would use the northern Delta intakes "only to export Delta excess flows that could not otherwise be exported in the south Delta because of permit, capacity, or regulatory constraints." (DEIR, p. 4B-2.) The revised Alternative Scenario 5 described in Appendix 4B, is a "north Delta diversion priority" scenario variation, which maximizes the export of water at the northern intakes, leaving excess capacity at the south: "This available capacity can benefit the CVP by allowing for more wheeling of Delta surplus for CVP supplies at Banks Pumping Plant (which can only occur in the south Delta) and by increasing the regulatory export capacity available to be used by the CVP at Jones Pumping Plant." This is hardly an unlikely scenario. The DEIR provides the following: "(T)he scenario discussed	south Delta intakes during certain times of the year. The analysis was performed to see how sensitive the system is to a specific change, not the specific magnitude. The north Delta diversion priority scenario described in Appendix 4B is not a foreseeable action. (CEQA Guidelines, § 15126.6(f)(3) ["An EIR need not consider an alternative… whose implementation is remote and speculative."].) Moreover, as identified in Appendix 4B, prioritizing use of north Delta intakes would not substantively change results or impacts, including impacts on fish and wildlife species analyzed in Chapters 12 and 13, compared to the proposed project or have the potential to reduce the significant and unavoidable impacts identified in other chapters within the EIR. For these reasons, it is not considered an alternative in the EIR. (CEQA Guidelines, § 15126.6(f) ["The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project."].) The north Delta diversion priority scenario is not a foreseeable action under CEQA, as described in the appendix because the amount and timing of potential shifting is not known or knowable. In addition, clarification has been added to Appendix 4B to note that the scenario evaluated in 4B would not have the potential to reduce any of the project's significant and unavoidable impacts and therefore is not evaluated as an alternative Clarifying text has been added to Appendix 4B to further explain that the scenario presented in Appendix 4B is an overestimate of shifting and the analysis is conservative with regard to whether modeling results documented in Chapter 5, *Surface Water*, and 6, *Water Supply*, would change under limited real-time operations. The results presented in Appendix 4B are not considered in the CEQA impact analysis nor does the appendix contain CEQA impact determinations. Common Response 3, Alternatives Development and Description, provides information on the steps DWR followed in developing the alternatives evaluated in the EIR.

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	herein includes more shifting than would be reasonably foreseeable, by prioritizing diversions at the proposed north Delta intakes over the existing south Delta intakes during certain times of the year." (DEIR, p. 4B-1.) This additional analysis shows that it is reasonably foreseeable, if not likely, that a range of operational priorities and resulting environmental impacts are left unanalyzed in the DEIR. To the extent this is an alternative operational scenario, it is not properly analyzed as a project alternative and cannot be relied upon to support operations under a north Delta priority.	This Common Response describes how the Delta Conveyance Project operational scenario evaluated in the EIR was developed and why a single operational scenario is considered and is adequate for the purposes of CEQA. In addition, Common Response 3 includes additional information on circumstances when diversions could potentially change from the south to the north Delta intakes. Appendix 4B was prepared to evaluate the robustness of the impact analysis findings if the diversion for the SWP exports were prioritized at the north Delta intakes during the December-June periods, instead of the south Delta priority export operation proposed in Alternative 5. Overall, the analysis concluded that prioritizing north Delta diversions would not result in additional impacts.
528-10	B. The Purpose of the DEIR's Use of a 2020 and 2040 No Project Alternative Is Unclear: CEQA Guidelines require an EIR to evaluate a "no project" alternative and its impacts. "The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project." (CEQA Guidelines, § 15126.6, subd. €(1).) "Discussing a no project alternative in an EIR 'provides the decision makers and the public with specific information about the environment if the project is not approved. It is a factually based forecast of the environmental impacts of preserving the status quo. It thus provides the decision makers with a baseline against which they can measure the environmental advantage and disadvantages of the project and alternatives to the project." (Center for Biological Diversity v. Dept. of Fish & Wildlife (2015) 234 Cal.App.4th 214, 253 [original italics], citing Planning & Conservation League v. Dept. of Water Resources (2000) 83 Cal.App.4th 892, 917-18.)	Please see Common Response 4, No Project Alternative Description and Analysis, regarding the CEQA requirements for describing and evaluating a No Project Alternative in an EIR and a discussion of the different time periods referenced in the EIR (e.g., 2020 and 2040). In addition, this Common Response provides information on the location throughout the EIR regarding the No Project Alternative evaluation. The No Project Alternative is evaluated fully for each resource under the heading "No Project Alternative" in each chapter; all other information that is supplemental to the CEQA analysis regarding the No Project Alternative is provided in the supporting appendices.

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	The DEIR's discussion of the No Project Alternative is scattered and difficult to comprehend. In Chapter 3, the DEIR discusses two separate timeframes for the No Project Alternatives, 2020 and 2040. (DEIR, p. 3-68.) However, the DEIR goes on to state that "the No Project Alternative at 2020 is identical to existing conditions found within the study areas and therefore is not separately discussed in the resource chapters." (Ibid.) Therefore, the purpose of the 2020 No Project Alternative is unclear and further confuses readers as to what information is pertinent to the No Project Alternative.	
528-11	C. The DEIR Erroneously Uses Predictable Actions for the No Project Alternative: The DEIR also uses various "predictable" actions in its No Project Alternative, however, several of these predictable actions are not in the project area, nor are they water conveyance projects. (DEIR, p. 3C-3.) Thus, the inclusion of these other "predictable" projects in the No Project Alternative assumptions violates CEQA. The CEQA Guidelines provide: "If the project is other than a land use or regulatory plan, for example a development project on identifiable property, the "no project" alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in its existing state against environmental effects which would occur if the project is approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this "no project" consequence should be discussed. In certain instances, the no project alternative means "no build" wherein the existing environmental setting is	The assertion that the EIR does not appropriately consider predictable actions in the No Project alternative and is therefore not in compliance with CEQA is not supported by the EIR. Please see Common Response 4, No Project Alternative Description and Analysis, regarding the CEQA requirements for describing and evaluating a No Project Alternative in an EIR, and the use of predicable actions in the analysis required by CEQA Guidelines Section 15126.6(e). As described in Common Response 4, predictable actions include actions that would occur under the No Project Alternative, which includes actions that are broader than water conveyance actions. Common Response 4 also details the geographic scope of the No Project Alternative analysis, which extends beyond the Delta. Furthermore, please see Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, for a description of ongoing state-level planning efforts and how the Delta Conveyance Project is one component of those efforts.

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	maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment." (CEQA Guidelines, § 15126.6, subd. €(3)(B).) The DEIR takes this approach but creates a No Project Alternative that skews the forecast of the environmental impacts of preserving the status quo. (Planning & Conservation League v. Dept. of Water Resources (2000) 83 Cal.App.4th 892, 917-18.) Here, the No Project Alternative includes water conservation programs, water recycling projects, groundwater recovery projects, desalination of seawater or brackish groundwater, groundwater management, or water transfers and exchanges. (DEIR, pp. 3C-10 to 11.) There are two main problems with including these projects as "predictable actions by others" in the No Project Alternative. First, nearly all of the types of actions listed are actions that would lead to provision of additional water supplies. For example, water recycling projects "reduce reliance on increasingly scarce and expensive surface water," and help "bolster local water supplies." [Footnote 6: https://www.watereducation.org/aquapedia/waterrecycling#:~:text=Recycling%20wastewater%20can%20bolster%20local,sources%20include%20domestic%20gray%20water.] Thus, actions like water recycling and conservation can be said to create additional water. The Tunnel, however, is a conveyance project that moves water from one area to another. No	

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	additional water is created through conveyance; in fact, water would be lost through conveyance. Therefore, including actions that are unlike the proposed conveyance project violates CEQA because these types of actions would not be the "consequence" of the No Project Alternative. Second, the Tunnel is proposed to be constructed within the Delta. (DEIR, p. 2-1 to 3.) Therefore, most of the Tunnel's impacts would occur within the Delta. The DEIR, however, includes several predictable actions in the No Project Alternative that are not physically near the proposed project site. For example, the DEIR includes projects for "water agencies that have signed on to the Agreement in Principle as of the date of the release of this Draft EIR[.]" (DEIR, p. 3C-11.) The DEIR goes on to list projects that would occur as far away as Coachella Valley. (Ibid.) Assuming these projects are "reasonably expected to occur" their impacts would not occur near the Tunnel project area and are therefore irrelevant to the No Project Alternative because these projects do not assist in the comparison of environmental impacts. (CEQA Guidelines, § 15126.6, subd. €(1).)	
528-12	IV. The DEIR's Discussion of Flood Control and the Delta Levee System Is Inaccurate and Fails to Consider the Project's Drainage Impacts (Ch. 7) A. The DEIR Fails to Analyze the Project's Impacts to Drainage Drainage in the Delta is critical to agricultural operations. The construction of the Tunnel would interfere with reclamation districts' ("RDs") ability to ensure proper drainage of islands. In many parts of the Delta, the groundwater table is controlled by drainage, pumps, and siphons. Project construction would	As described in Chapter 7, Flood Protection, in the section titled Process and Method of Review for Impeding or Redirecting Localized Flood Flows, as well as in Chapter 3, Description of the Proposed Project and Alternatives, in the section titled Local Water Supply, Drainage, and Utilities, the location and capacity of existing drainage and irrigation facilities that may be affected by construction of the Delta Conveyance Project would be determined and the capacity of this infrastructure to convey drainage or irrigation water would be maintained. Impact FP-2 in Chapter 7, Flood Protection, explains that a full review of the drainage systems will be performed through drainage studies for each

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	interfere with farmers' ability to properly drain certain fields where project activities would occur. While the DEIR discusses the placement of cutoff and sheetpile walls during construction, the consequences of installing those walls on agricultural operations and drainage are not discussed.	construction location during final design to assess the need for drainage-related design measures such as new on-site drainage systems or cross drainage facilities. As discussed in Chapter 7, all project alternatives would include installation of temporary drainage facilities or replacement of existing drainage facilities that would be disrupted by construction of the project. Additionally, Impact AG-3 in Chapter 15, Agricultural Resources, discusses impacts on agriculture as a result of construction and operation of the Delta Conveyance Project. As noted in the impact discussion, the project was sited in such a way to avoid interference with any known local agricultural infrastructure. Agricultural drainage is also discussed in Chapter 8, Groundwater. For a discussion on drainage impacts due to groundwater fluctuations, see response to comment 528-13.
528-13	Tunnel construction would also require DWR to pump large quantities of water due to dewatering activities. The DEIR states that there would be "localized changes" due to dewatering at the construction site. (DEIR, p. 8-1.) In an attempt to minimize this impact, the DEIR would utilize slurry cutoff walls to reduce the amount of groundwater in the construction site, thus decreasing the amount of water from dewatering activities. (DEIR, p. 8-30.) However, both dewatering activities and the use of cutoff walls would negatively impact farmers' ability to properly drain fields. For example, Figure 8B-11 illustrates groundwater impacts that would occur due to construction. (DEIR, p. 8B-38.) The map indicates that a large portion of the groundwater near Hood and Courtland would increase between 1 and 3 feet due to the project. (Ibid.) This impact is not analyzed in the DEIR and would likely create significant impacts to agriculture near the	Construction-related dewatering activities would occur at the intakes, Southern Forebay Complex, and Bethany Complex. Very limited dewatering would occur at the tunnel shafts and only after the shaft seals are completed. Dewatering would not be required for constructing the tunnel. The figures referenced in the comments show the maximum differences in groundwater elevation during project operations, not due to construction dewatering. During construction dewatering, the use of slurry cutoff walls would limit the interaction of the area to be dewatered from the surrounding local or regional aquifers and nearby levees, buildings, or other infrastructure. Dewatering during construction and operation of the intake sedimentation basins could occur at depths that may cause minimal changes in local groundwater conditions. Therefore, for construction and operations of the intake sedimentation basins, in accordance with Mitigation Measure GW-1, monitors will be installed around the intake. If groundwater elevations substantially decline, the dewatering flows will be collected, treated, and re-injected around the intake site to reduce

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	project's construction sites.	substantial declines in groundwater elevations. If the groundwater elevations substantially rise, the dewatering wells surrounding the intake site will be operated to withdraw groundwater to reduce substantial increases in groundwater elevation. Any groundwater withdrawals would be discharged to the intake sedimentation basin and would not increase flows in adjacent drainage channels. Agricultural drainage during project operations is assessed under Impact GW-5. Modeling conducted to simulate project operations shows that changes in agricultural drainage relative to existing conditions range from a 0.06% increase to a 0.12% increase in agricultural drainage over the simulated period, all less than the 10% change in agricultural drainage threshold. Therefore, the project was determined to have a less-than-significant effect on agricultural drainage.
528-14	B. The DEIR Assumes Dual Conveyance Use but Provides Inaccurate Levee Information As described in Section II, the project would still rely heavily on the south Delta export facilities. The DEIR recognizes that "The levee system surrounding each Delta island along the central, easter, and Bethany Reservoir alignments where various shafts and facilities are located provide the first line of defense against flooding during construction." (DEIR, p. 7-46.) Additionally, these levees ensure that water can flow through the Delta to south Delta facilities. The DEIR indicates that it would rely heavily on a "dual conveyance" i.e., north and south Delta facilities. (DEIR, pp. 3-145 -- 146.) However, the DEIR fails to discuss how the project would impact the need for additional maintenance and improvements of the levee system. This is especially problematic because DWR is not the entity in charge of maintaining the levee system; that responsibility falls on local reclamation districts. The	As described in Chapter 2, Purpose and Project Objectives, the fundamental purpose of the Delta Conveyance Project is to restore and protect the reliability of SWP deliveries. The proposed project is not a flood control project but has been designed to ensure that intake structures on the Sacramento River and modifying flood control levees would not reduce the protection afforded by the existing flood control system. As described in Chapter 7, Flood Protection, in the section titled Areas Subject to Flooding, federal regulatory requirements represent the minimum level of compliance needed, while state and local requirements may be more stringent. Additionally, as discussed in the Compensatory Mitigation sections under Impact Discussions FP-1 and FP-2 in Chapter 7, any restoration activities associated with compensatory mitigation would be designed, constructed, and maintained to ensure no reduction in performance of the federal flood project. The project would not significantly impact levees maintained by Delta Reclamation Districts as indicated in Chapter 7. Levees in the vicinity of

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	reclamation districts would not only be saddled with additional maintenance costs as a result of the project but would also lose acreage previously subject to assessments due to the project's conversion of agricultural land. This reduction in funding for RDs would reduce the funds available for levee maintenance.	project features would continue to be maintained following construction in a manner consistent with current practices. The text in Chapter 7 acknowledges that there are numerous levee monitoring and maintenance activities currently implemented by various entities, including Reclamation Districts and DWR itself, within the Delta as described by the Central Valley Flood Protection Program. These numerous activities would be expected to continue with or without the approval and implementation of the Delta Conveyance Project because with or without the project levee monitoring and maintenance is needed in the Delta. The Delta Conveyance Project would not change DWR's flood control authorities or responsibilities within the Delta. As described in Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, DWR has a role and responsibility along with local governments and special districts to maintain and improve levees that protect the Delta. Chapter 7 discloses specific levees that would be impacted by the following project-related activities: construction of the intakes on the Sacramento River for all alternatives, construction of levees along portions of Bouldin Island under Alternatives 1 and 2, levees along portions of Lower Roberts Island under Alternatives 3 through 5, construction of the Southern Forebay spillway for all alternatives except for Alternative 5, operation of the project, and implementation of the CMP. At the intakes, the jurisdictional levees at all of the intakes, the levee will be realigned around the perimeter of the sedimentation basins and will be maintained by DWR as part of the Delta Conveyance Project. These levees will require USACE Section 408 Permits and Central Valley Flood Protection Board permits. At Bouldin and Lower Roberts Island, the levee improvements would be designed in coordination with the local reclamation districts (RD 756 and RD 684, respectively). The improved levees would not increase maintenance requirements that would continue to be provided by the local reclamation districts. At Southern Forebay, the design of the spillway would need to be coordinated with Reclamation District 800. The spillway

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		is part of the project and would be maintained by DWR.
528-15	V. Harmful Algal Blooms Would Be Worsened by the Project and Its Operations (Ch. 9) The project reduces flows and changes velocities by removing water from the Sacramento River. Those flows would have created turbulence and reduced harmful algal bloom ("HAB") formation relative to the project not taking those flows. HABs when allowed to form can create potent "(C)yanotoxins can cause toxicity to phytoplankton, zooplankton, and fish, and also can affect feeding success or food quality for zooplankton and fish." (DEIR, p. 9-26.) Loss of turbulence or mixing occurs when the water velocity is reduced and that reduction is exacerbated under the natural condition of tides. The DEIR states: "The project alternatives would have negligible, if any, effect on the probability with which any given 15-minute absolute velocity would occur at the assessment locations during the June through November period, relative to existing conditions (Appendix 9E, Figures 9E-2-1-1 through 9E-2-11-6)." (DEIR, p. 9-156.) However, Appendix 9E treats velocity differently than temperature (DEIR, pp. 9E- 10 – 21) and residence time (DEIR, pp. 9E-91 – 120), and simply shows the probabilities of exceedance. There are no tables provided for velocity, and thus no ability to determine monthly differences for velocity. In any case, velocity should be assessed and presented on a monthly basis, by water year class. The DEIR simply averages all the water year classes into a single month for temperature and residence time, apparently intentionally homogenizing the results. In addition, the DEIR appears to overstate the	As discussed in Chapter 9, Water Quality, Impact WQ-14 (CHABs), DSM2 modeling showed that project operations would have minor effects on channel velocity and associated turbulence and mixing of the water column. Velocity was analyzed via looking at the probability with which any given channel velocity would be exceeded for existing conditions operations and project operations. The scientific literature contains substantial uncertainty regarding how a given channel velocity affects CHABs, in part because channel bathymetry (i.e., depth, width, bottom configuration) affects the amount of turbulence created by a given velocity. Hence, it is difficult to interpret how a change in a location's average velocity would affect CHABs without multiple years of study of that location under different velocities. Therefore, the Draft EIR evaluated how the probability (i.e., frequency) that any given velocity modeled to occur for existing conditions would change with project operations. DSM2 velocity modeling for numerous locations in the Delta showed that project operations would have very minor effects on the frequency at which any given channel velocity would occur. As such, the alternatives would have little effect on turbulence and mixing of the water column. Appendix 9E, Cyanobacteria Harmful Algal Blooms, presents both daily average and monthly average water temperatures for each month of the June through November assessment period. Exceedance plots for temperature show that the probability of any given temperature occurring at a site would change negligibly, if at all, with project operations. Because the monthly modeling for temperature included all water year types, the conclusion that project operations would have negligible, if any, effect on water temperature in a given month can be extended to each water year type during that month. For residence time, the results were not averaged into a single month. Rather, the 25th, 50th (median), 75th and 95th percentile times to flush 90% of water from the defined locations were assessed, by month for the period June through November. This is a more robust analysis than looking only at the mean values by month. Water temperature is presented as both

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	relevance of velocity in the analysis, relative to other factors.	averages and in exceedance plots for the period modeled.
528-16	The project would cause lower streamflows and energy moving downstream to 'hold back' the tides, increasing reverse flows, and ultimately increasing the residence times. (DEIR, p. 5-26.) The DEIR presents modeled residence time expressed as an average, and that average is only modeled for a small number of locations (9), the majority of which are intentionally placed in the higher flow regions of the Delta (except for Franks Tract and Discovery Bay). (DEIR, p. 9E-8.) As the DEIR identifies on page 9E-91, the residence times are further obfuscated by providing averages of all years instead of breaking them down by water year classes as was done for other water quality parameters on DEIR page 9-41. This choice to present data for velocity and residence time without water years results in the inability to distinguish the project's impacts, which are essentially averaged away with wet years.	Please see response to comment 528-15 regarding the presentation of modeled residence time, which explains that results were presented as percentiles, not averages and that by including all water year types, the conclusion regarding project operations can be extended to each water year type during that month.
528-17	According to Table 21-8. Estimated Solid Waste during Operations by Alternative (cubic yards/year), Alternative 5 would collect and eventually dispose of 10,098 cubic yards per year of sediment. (DEIR, p. 21-45.) The north Delta intakes would entrain sediment, with annual mean entrainment estimates of this suspended sediment otherwise destined to move downstream in the Sacramento River ranging from 2% to 8%, and an overall total during the 1922–2015 CalSim modeling period of 4% – 5%. (DEIR, Table 12-97, p. 12-165). This sediment would have otherwise been suspended and provided visual cover for fish such as the Delta smelt. (Ibid.) Decreased sediment also increases water clarity, which can help create conditions that increase the incidence of HABs. (DEIR, p. 9E-7.)	The potential reduction in sediment load to the Delta and associated effects on Delta turbidity is addressed fully in Chapter 9, Water Quality, Impact WQ-13, which concluded the impact would be less than significant. This conclusion is based on the fact that other factors that contribute to sediment loading and suspension in the Delta would continue and that Environmental Commitment EC-15 would be implemented to monitor and model Sacramento River sediment entrainment, establish performance criteria, and develop and implement a sediment reintroduction plan, if determined necessary relative to the performance criteria (Appendix 3B, Environmental Commitments and Best Management Practices). The CHABs assessment in Impact WQ-14 considered potential effects to turbidity, as one of the factors that affects CHABs, and concluded, based on Impact WQ-13 (TSS/turbidity) that changes in water column clarity and associated irradiance would not occur with sufficient regularity to increase CHABs.

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528-18	If between the various Alternatives, temperature is considered similar (DEIR, p. 9-43), nitrogen and phosphorus are not limiting (DEIR, pp. 9-17 – 18), and X2 is maintained according to D-1641 (DEIR, pp. 9-30 and 9-77), then the project directly influences the remaining variables that worsen HAB formation: Low flows and channel velocities resulting in low turbulence, Long hydraulic residence times, Water column irradiance and clarity greater than 50 micromoles per square meter per second (µmoles/m2/s) (DEIR, p. 9-26.) Under the project, flows would be reduced at the intakes and downstream channels, residence time would increase, and sediment (which reduces clarity) would also be removed by the intakes. (DEIR, p. 9-26; see also DEIR, pp. 9E-3 and 9E-5.) As noted above [comments 15, 16] with the velocity and residence time discussion, the DEIR obfuscates important differences through its selective use of averages. In this case, selecting the highest flow locations for modeling further masks the impacts. According to the DEIR, Lehman et al. (2017:94) state that high residence time was a factor that contributed to the magnitude of the 2014 Microcystis bloom in the Delta. The high residence time allows microcystis colonies to accumulate in areas of the Delta, without getting flushed from the area. There is no evidence in the scientific literature to indicate that higher residence time results in higher algal growth rates. Algal species, availability of nutrients, and temperature primarily control algal growth rates, not residence time per se. (DEIR, p. 9E-6.) Instead of a	The CHAB assessment in Chapter 9, Water Quality, Impact WQ-14 was based on a review of available sources and best available information. The CHAB assessment uses site-specific residence time as modeled directly using DSM2 in combination with modeled temperature, modeled channel velocity, an assessment of nutrients, and irradiance to assess the impacts of the project alternatives on CHABs. It was correctly stated in the EIR that longer residence times do not result in higher algal growth rates. Instead, longer residence times would be of concern because they could allow cyanobacteria cells to aggregate and accumulate to potentially form larger blooms. DSM2 residence time modeling indicates that residence time would decrease in the Stockton Deep Water Ship Channel and have little to no change in the southern, eastern, and western parts of the Delta. The project alternatives are expected to increase residence time in some locations and months within the central Delta. Residence times in this region are already long and increases in residence time in this region would not be enough to cause Microcystis blooms to substantially increase in size or last substantially longer, relative to existing conditions. Please see Common Response 10, Surface Water Quality and Groundwater Resources, for additional residence time considerations, including rationale for focusing on site-specific residence times. Common Response 10 also provides information on the use of monthly average modeling output. There would also be negligible differences in water temperature, nutrients, velocity, and irradiance under the project alternatives, relative to the existing conditions. Considering the factors (i.e., temperature, velocity, nutrients, irradiance, and residence time) that drive emergence and subsequent growth and accumulation of CHABs in the Delta, the CHAB analysis found bloom development and magnitude would not be substantially affected by the project alternatives. As such, there would be a less-than-significant impact on CHABs.

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	detailed analysis, the DEIR relies on unsubstantiated assertions to rebut its own citation in the preceding sentence. As noted in the DEIR, if Microcystis is endemic, the nutrients are available (not limiting), and temperature is consistent, the only variables that remain are those that the project would worsen through the operation of the proposed new diversions. The discussion in the DEIR is a strawman; the literature is clear that residence time is not the only variable. But the project would lengthen residence time, thereby worsening HABS over no-project conditions. Notably, the primary expert citation that the DEIR relies on rebuts the DEIR's analysis; as a result, the DEIR's conclusion regarding the project's potential impacts on HABs formation lacks substantiation. Beyond that error, the remaining analysis is also factually incorrect. According to the DEIR, "There is no evidence in the scientific literature to indicate that higher residence time results in higher algal growth rates." (DEIR, p. 9E-6.) Indeed, there is a vast literature that substantiates Dr. Lehman's conclusions that higher residence time results in higher algal growth rates. For example: "The mechanistic explanation of low plankton abundance in rivers is short residence time relative to population growth rate (Basu and Pick 1996). The occurrence of harmful algal blooms (Bricelj and Lonsdale 1997), distribution of pelagic bacteria (Painchaud et al. 1996), export of copepod life stages (Ohman and Wood 1996), partitioning of primary production between macroalgae and phytoplankton (Valiela et al. 1997), and variability of dissolved nutrient concentrations (Andrews and Muller 1983) in estuaries and other coastal ecosystems are all strongly influenced by residence time." (Monsen et al. 2002. [Footnote 7: Monsen et	Regarding water clarity and irradiance, Chapter 9 addresses effects of project operations on total suspended solids and turbidity of study area waterbodies. As described in the section titled Impacts of the Project Alternatives on Water Quality, project operations would not affect water quality of the rivers upstream of the Delta, including total suspended solids (TSS) and turbidity levels. Furthermore, as described in Impact WQ-13 (TSS and turbidity), it is the high runoff events that contribute to the high TSS and Delta sediment load, which will not change substantially for project operations, relative to existing conditions.

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	al., A comment on the use of flushing time, residence time, and age as transport time scales, (2007) can be accessed at https://aslopubs.onlinelibrary.wiley.com/doi/epdf/10.4319/lo.2002.47.5.1545.]) The same authors investigated residence time in the Delta and identified that residence time itself was potentially an incomplete metric because it only took into account when a modeled particle left the field and did not include particles that re-entered due to tides. A better alternative was the use of "exposure times" which took these and other factors into account: Therefore, the growth dynamics of a patch of phytoplankton in a tidal flow could be a strong function of the total amount of time spent in a particular (e.g., high-growth) environment. …(T)he exposure time of particles is longer than the residence time in many regions because particles that exit the system can subsequently re-enter MI [Mildred Island]. Therefore, the influence of MI habitat might be greater on the particle than would be indicated by the formal residence time concept… (Monsen et al. 2002.) In addition, Keith Bouma-Gregson, US Geological Survey, recently identified: "Any phenomenon that increases one of these four factors—light, temperature, nutrients, and water-column dynamics—would increase the chance of HABs formation. Our water and land-use policy and management decisions will be important in offsetting any potential climate impacts so we can minimize HAB formation in California's rivers, lakes, Delta and other waterways."[Footnote 8:	

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	https://archive.estuarynews.org/science-in-short-the-hullabaloo-about-habs/] Policy decisions, such as the Tunnel, are choices that directly influence water column dynamics, the movement of water vertically and horizontally, that increase the chance of HAB formation in the Delta.	
528-19	Finally, the DEIR identifies that: "In freshwater rivers, phosphorus is usually bound to particles, complexing with elements such as iron. When freshwater enters estuaries and becomes more saline, the P-iron complex disassociates and the phosphorus is released in a form that can be readily absorbed by algae." (DEIR, p. 9-17) The DEIR chose certain measurement points, excluded velocity monthly averages, and disregards the science regarding residence times. This results in a DEIR that has masked the severity at which HABs would proliferate due to operation of the tunnel.	The text cited in this comment is from the nutrients setting in Chapter 9, Water Quality. Project operations would not affect the ongoing nutrient cycling processes described in the comment because the project would not be a new source of nutrients or otherwise result in substantial changes in nutrients as discussed in Impact WQ-7. Furthermore, as described in Impact WQ-14 (CHABs), nutrients are not a limiting factor for CHABs growth under existing conditions and would not be with project operations. Please see response to comment 528-15 regarding the presentation and use of channel velocity and residence time modeling results to support the CHABs analysis in Impact WQ-14.
528-20	VI. Potentially Significant Impacts to Marine Mammals/Sea Lions are Ignored (Ch. 12): The DEIR fails to analyze or mitigate the potential impacts to California sea lions. The only mention of sea lions in the DEIR concerns the predation of salmon. (DEIR, p. 12-23.) The California sea lion has been documented occupying the project area (NMFS, Biological Opinion for the South Delta Temporary Barriers Program, Exhibit 1 [Attachment 1], pp. 54- 55), and is a covered species under the Marine Mammal Protection Act (16 U.S.C. § 1361 et seq. ["MMPA"]). The construction of the Tunnel would create noise levels and include other activities that would harass sea lions in the area. The harassment of sea lions violates federal law. The DEIR should analyze the extent to which the project's activities would harass sea lions and also include the requirement of obtaining an incidental harassment permit from the National Oceanic and Atmospheric	The EIR has been updated to include an evaluation of potential impacts of project alternatives on California sea lion in Chapter 12, Fish and Aquatic Resources. A description of California sea lion natural history, including range, seasonal timing, and documented presence in the study area has also been added to Appendix 12A, Environmental Setting Background Information. As the commenter notes, California sea lions are protected under the Marine Mammal Protection Act. Chapter 1, Introduction, describes the relevant federal and state laws and regulations protecting biological resources, including the Marine Mammal Protection Act, as well as the review, approval, and consultation requirements that DWR will be required to comply with. These requirements will be necessary to implement the project. Please also see Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding permitting and consultation requirements.

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	Administration. The MMPA prohibits the "take" of marine mammals. (16 U.S.C. § 1372(a).) The definition of take includes, "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal." (16 U.S.C. § 1362.) The MMPA defines Level B harassment as "any act of pursuit, torment, or annoyance which has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure a marine mammal or marine mammal stock in the wild." (50 C.F.R. § 216.3; see also 16 U.S.C. § 1362(18) [defining harassment generally].) Additionally, National Marine Fisheries Service ("NMFS") has determined that activities likely meet Level B harassment levels when marine mammals are exposed to underwater noise of 120 dB for continuous noise such as vibratory pile driving, and 160 dB for impulsive noise such as impact pile driving. (NMFS, Summary of Marine Mammal Protection Act Acoustic Thresholds, Exhibit 2 [Attachment 2], p. 4.) Further, in-air levels that reach 100 dB also result in Level B harassment. (Ibid.) The DEIR determined that the pile driving at the test pile program site would reach levels of 205 dB, the 150-dB threshold would reach up to 24,135 feet (roughly 4.5 miles) from the site, and there would be 58.64 acres that would reach a 150-dB threshold. (DEIR, p. 12-50.) Additionally, the noise at the intake construction sites would exceed the 120 dB threshold and would also produce noises of 206 dB. (DEIR, p. 12-51.) These underwater noise levels would be high enough	The impact analysis includes a quantitative evaluation of potential impacts of in-air and underwater noise on California sea lion using the thresholds developed by NMFS (National Marine Fisheries Service 2023). As disclosed in Chapter 12, the project would not result in a population-level effect on the species because the project would not permanently impede potential movement or foraging by individuals through the study area, and the study area is not within the traditional breeding or nonbreeding range for the population. Because few, if any, individuals would be affected during construction or operation of the project, the impact under CEQA is less than significant. None of the revisions to Chapter 12 described in the EIR resulted in a new significant environmental impact or a substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling commit.

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	to "harass"sea lions in the area. Further, the in-air noise levels would "harass" sea lions. The construction aspect of the project includes pile driving and other noise-generating construction equipment. (See DEIR, pp. 24-18 to 24-25.) The vibratory pile driving for intakes B and C would last 21 months, impact pile driving would last 18 hours, and heavy equipment would be used for 12 years. (DEIR, p. 24-31.) These activities would create noise levels above the water between 67 dBA and 110 dBA. (DEIR, pp. 24-30 - 31.) Therefore, DWR should have analyzed whether the in-air noise levels would result in the harassment of sea lions. It did not.	
528-21	The DEIR should have determined that project activities would harass California sea lions, and therefore the project is required to obtain an incidental harassment authorization to incidentally take marine mammals during specified activities, such as pile driving. (50 C.F.R. § 216.102.) Obtaining incidental harassment authorization is common with similar projects that use pile driving and other construction equipment in the presence of marine mammals, such as California sea lions. (See National Oceanic and Atmospheric Administration, 87 Fed. Reg. 51346 (Aug. 22, 2022); National Oceanic and Atmospheric Administration, 87 Fed. Reg. 64766 (October 26, 2022).) The lack of analysis or discussion regarding both California sea lions and the MMPA results in an informationally deficient EIR. (See Pub. Resources Code, § 21168.5; Laurel Heights Improvement Assn. v. Regents of Univ. of Cal. (1988) 47 Cal.3d 376, 392, 407.)	Please see response to comment 528-20 regarding the evaluation of potential impacts of project alternatives on California sea lion and project compliance with relevant federal and state laws and regulations that protect biological resources.
528-22	VII. The DEIR's Analysis of Agricultural Resources Is Inadequate (Ch. 15) Each year California loses an average of 50,000 acres of farmland.[Footnote 9: https://farmland.org/wp-	As described in Common Response 12, Agricultural Resources, when evaluating potential areas within Sacramento, San Joaquin, Contra Costa, Alameda, Solano, and Yolo counties to serve as agricultural mitigation, DWR carefully considered whether those areas provide an equivalent quality of farmland as the farmland to be permanently converted. One of

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	content/uploads/2020/05/AFT_SALC-2pgr-2020_FNLweb.pdf#:~:text=In%20fact%2C%20California%20loses%2050%2C000,greenhouse%20gases%20than%20developed%20land.] The Delta is the largest contiguous area of prime farmland in the state (738,000 acres total, with over 400,000 in crops). While the Draft EIR asserts that farmland in the Delta has been and will continue to be subject to conversion pressure, this is incorrect as state and local laws prevent most farmland conversion in the Primary Zone of the Delta. The tunnel, not other types of development, is the largest threat to Delta farms. The DCP would directly convert 3,787 acres of farmland to nonagricultural uses to build the tunnel and associated compensatory mitigation. (DEIR, p. 15-3.) Mitigation Measure AG-1 is inadequate. It requires that all permanently converted Important Farmland would be mitigated at a 1:1 acre ratio. (DEIR, p. 15-39.) However, much of the farmland in the Delta is already protected. Further, much of the agricultural land in the Delta is not threatened by development. Therefore, the addition of permanent easements does not mitigate the loss of farmland caused by the project. The DEIR uses Impact AG-3 to provide some analysis regarding the impact to agriculture from increased salinity. Impact AG-3 determines that the increased levels of water salinity would not "trigger a substantial conversion of Important Farmland to nonagricultural use." (DEIR, p. 15-51.) However, the use of this significance threshold overlooks the physical impacts to agriculture that would result from increased salinity. This is a violation of CEQA. "Compliance with the threshold does not relieve a lead agency of the obligation to consider substantial evidence indicating that the project's environmental effects may still be significant." (CEQA Guidelines, § 15064, subd.	these considerations is targeting existing agricultural areas that are threatened with a change to non-farmland use. Protection of such farmland is often a critical component in farmland mitigation strategies because it provides a clear linkage in how implementation of mitigation for a project can protect farmland that otherwise would have been lost without the project's mitigation. Nonetheless, as described in Chapter 15, Agricultural Resources, conservation of agricultural farmland through acquisition of agricultural conservation easements, even at a ratio of greater than 1:1, would not avoid a net loss of Important Farmland in the study area. Impact AG-3 in Chapter 15 addresses potential changes in agricultural production as a result of changes in salinity (measured by EC) in Delta water supplies due to operations of the proposed project. As described in Chapter 15, operation of the project would remain in compliance with all water quality standards set to be protective of Delta agricultural beneficial uses and therefore would not result in physical environmental changes to farmland. Please refer to Chapter 9, Water Quality which addresses salinity under Impact WQ-5, Effects on electrical conductivity resulting from facility operations and maintenance. As discussed in Appendix 9L, Water Quality 2040 Analysis, climate change and sea level rise are primary drivers of water quality changes, including salinity levels, in the study area during the timeframe for when the project would become operational. As such, it is reasonable to expect that there may be some changes in crop types in the Delta in future decades, as operators adjust to changing baseline conditions and shift to crop types that are more tolerant of higher salinity levels in applied irrigation water. Such a change would be triggered regardless of whether any of the proposed project alternatives were implemented.

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	(b)(2); see also East Sacramento Partnership for a Livable City v. City of Sacramento (2016) 5 Cal.App.5th 281, 300.) Further, "[I]n preparing an EIR, the agency must consider and resolve every fair argument that can be made about the possible significant environmental effects of a project." (Protect Historic Amador Waterways v. Amador Water Agency (2004) 116 Cal.App.4th 1099, 1109.)	
528-23	Salinity in the Delta is impacted by several factors. (DEIR, p. 9-14.) The primary source of salinity in the Delta is seawater intrusion from the west, which occurs at greater magnitudes when freshwater Delta outflow to San Francisco Bay is low and/or when tidal flows are high. (Ibid.) Once in operation, the tunnel would decrease mean monthly flows south of the intakes for nearly all months in all water years. (DEIR, p. 15C-43.) These changes would result in flow decreases by as much as 14 percent (Ibid.) Additionally, the DEIR determined that the salinity levels could increase by more than 22 percent in parts of the Delta. (DEIR, p. 15-51.) This would negatively impact crops. Further, the longer term "operation of the proposed new water conveyance facilities under the project alternatives could indirectly affect agricultural production by altering the quality of agricultural irrigation water." (DEIR, p. 15C-4.) Dr. Michelle Leinfedler-Miles' testimony regarding DWR and the U.S. Bureau of Reclamation's request for change in point of diversion of the California WaterFix ("testimony"), provided an expert opinion on the impacts of salt accumulation in soils and impacts to crops from higher salinity. (See Rebuttal Testimony of Michelle Leinfelder-Miles, Exhibit 3 [Attachment 3].) An increase in applied water salinity may result in the degradation of soil conditions and/or a decrease in crop yields. (Ibid.) During that testimony, Dr. Leinfelder-Miles stated that a	Chapter 15, Agricultural Resources, evaluates the ability of project operations to protect agricultural beneficial uses based on adherence to State Water Resources Control Board Water Right Decision 1641 (D-1641) water quality standard. The State Water Resources Control Board balances a variety of beneficial uses for the Delta, including but not limited to agricultural use. Please refer to Chapter 9, Water Quality, which concludes that while there could be some increases in salinity (based on modeled electrical conductivity) at some Delta locations in some months, these effects would be less than significant. As described in Chapter 3, Description of the Project and Alternatives, the project would continue to be operated to meet existing environmental laws and within contractual obligations. As stated in Chapter 9 under Impact WQ-5, relative to existing conditions, there would be no increased frequency in exceedances of the thresholds set by the agreement between DWR and the North Delta Water Agency in 1981, as amended in 1997, in September; therefore the modeled increases in salinity are considered less than significant. Furthermore, as discussed in Common Response 12, Agricultural Resources, the gradient of freshwater conditions within the Delta has driven the distribution of crop types in the Delta. Please refer to Common Response 12, Agricultural Resources, for more information regarding crop salinity tolerance. As suggested in Common Response 12, future salinity conditions within the western Delta and associated changing of crops types, would be attributable to climate

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	determination that a 5 percent increase in salinity is not an impact was "a hasty and unfounded assumption." (Ibid.) Crop salinity tolerances vary and "even a small change in water salinity could reduce yield if that change resulted in an increase in soil salinity that exceeded the crop tolerance threshold." (Ibid.) [Footnote 10: See also UC Extension Fact Sheet 11: Soil Salinity Management, available at: https://agric.ucdavis.edu/Fact_Sheets/.] Further, the DEIR provides significant evidence that this might be a significant impact. "Higher salinity irrigation water tends to concentrate salts at the surface and in the root zone. This is particularly problematic for salt-sensitive crop growth stages such as germination and seedling." (DEIR, p. 15-15.) "Crops generally have varying degrees of tolerance to water salinity, which can vary by growth stage. Excessive soil salinity can result in seedling mortality, reduced plant growth rates, and reduced yields." (DEIR, p. 15-50.) Additionally, the DEIR finds that irrigation water in the western Delta could exceed the tolerance level of some of the types of salt-sensitive crops grown in the Delta (e.g., fruits and vegetables) more frequently under below normal water year types, meaning that there is a potential that crop yields could decline." (DEIR, p. 15-51.)	change and not operation of the proposed project or alternatives.
528-24	This physical impact to crops [increased water salinity] exacerbates the economic impacts on farmers. Generally, economic and social impacts do not need to be analyzed in an EIR. However, "Economic and social effects of a project may be used to determine the significance of physical changes caused by the project." (CEQA Guidelines, § 15131, subd. (b).) Here, the project would increase water salinity, which would likely impact crop productivity resulting in economic impacts to farmers throughout the Delta. "[I]f a grower must change	Potential effects of water salinity levels on agricultural yields and production values, beyond the conversion of farmland, are considered in the EIR. Chapter 9, Water Quality, analyzes potential surface water quality impacts, including salinity level changes in some locations during project operations. The analysis concluded that the project would result in less-than-significant impacts on the quality of surface water. The locations identified as having some increases in salinity levels are in the western Delta, where existing water quality has already resulted in selection of more salt-tolerant field and forage crops.

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	practices to adapt to increases in water salinity in order to prevent reaching the soil salinity threshold, then another potential injury is the cost associated with these changes in practices (e.g., soil amendments, applying more water, changing crops.)" (Rebuttal Testimony of Michelle Leinfelder-Miles, Exhibit 3 [Attachment 3].) These forced changes may result in further injury. "A change in practices, such as applying more water, could negatively impact fruit quality by reducing the soluble solids of the grapes." (Ibid.) The DEIR sidesteps a probable significance determination by narrowing the scope of the significance thresholds to those impacts that only result in a permanent change in agricultural lands. This is an error. There is substantial evidence of a fair argument that the project would significantly impact crop yields and soil salinity throughout the project area. (CEQA Guidelines, § 15064, subd. (b)(2).) These physical impacts would also likely result in economic impacts to farmers throughout the Delta.	Please refer to Common Response 12, Agricultural Resources, for more information regarding crop salinity tolerance. As suggested in Common Response 12, future salinity conditions within the western Delta and associated changing of crops types, would be attributable to climate change and not operation of the proposed project or alternatives. Chapter 15, Agricultural Resources, Impact AG-3 concluded that operations and maintenance activities would not directly result in the conversion of productive farmland. Based on the location and magnitude of salinity changes described in Chapter 9, and the current distribution of crops in the Delta and their salinity tolerances shown in Chapter 15, no additional quantifiable effects on crop revenues associated with yield effects were identified. It is possible that changes in salinity levels due to operation of the project might influence some growers' crop selection in the long run, and, as a result, affect total agricultural production value. Therefore, the text in Chapter 17, Socioeconomics, under ECON-6 has been modified to identify this as a possibility. However, the available information does not support that there would be substantial changes in crops grown associated with these salinity changes.
528-25	VIII. The DEIR Fails to Inform the Public of the Impacts to Cultural Resources (Ch. 19) The DEIR failed to appropriately identify whether resources are historical. According to Madera Oversight Coalition, Inc. v. County of Madera (2011) (2011) 199 Cal.App.4th 48, a determination of whether an archaeological site is a historical resource: (1) is mandatory; (2) must be made sometime before the final EIR is certified; and (3) cannot be done after certification of the EIR. In that case, the court found the mitigation constituted improper deferral because it required a "verification" of whether the site was a historical resource	The assertion that the EIR fails to identify whether archaeological sites are historical resources is not consistent with the contents of the EIR. The analysis contained in Appendix 19A, Historical Resources Survey and Evaluation Report, demonstrates that sufficient research, documentation, and analysis was conducted to identify built environment historical resources within the Area of Impact for Built-Environment Resources (AI-BE). Appendix 19B, Archaeological Sensitivity Analysis Report (Confidential), of the EIR includes a summary of previously recorded archaeological resources, historical map research, shipwreck research, review of ethnographic literature, buried site sensitivity assessment, and Native

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	before preservation and recovery actions would be required. (Id. at 81, citing CEQA Guidelines, § 15064.5, subd. (c)(1) ["When a project will impact an archaeological site, a lead agency shall first determine whether the site is a historical resource . . ."].) Here, the DEIR states that "Three of the 34 resources have been determined to be historical resources under CEQA, while the other 31 have not been evaluated." (DEIR, p. 19-53.) Therefore, the DEIR should evaluate the other site prior to finalization of the EIR. However, it is likely that the information gathered for the other 31 sites would create substantially new information and require recirculation prior to finalization.	American Tribal consultation conducted for the project. Very limited archaeological pedestrian surveys and no subsurface archaeological surveys or testing/evaluation were conducted as part of the identification effort because of property access limitations. Please see Chapter 19, Cultural Resources, in the section titled Impacts and Mitigation Approaches, which includes Mitigation Measure CUL-3a: Prepare and Implement an Archaeological Resources Management Plan (ARMP). Consistent with the performance standards in Mitigation Measure CUL-3a, the ARMP will include procedures for archaeological resources phased identification, archaeological treatment, post review discovery, and archaeological monitoring.
528-26	Additionally [to the failure of the DEIR to appropriately identify historical resources], the DEIR's treatment of historical built-environment impacts is deficient, misleading, and provides unsupported conclusions. First, Table 19-0 is misleading. It shows that Alternative 5 would have significant and unavoidable impacts on six resources and a less than significant impact on eleven resources. (DEIR, p. 19-3.) However, Table 19-5 shows that five of the eleven resources would be significantly impacted but would be lowered to less than significant with mitigation. This is both misleading and inconsistent. The DEIR should be updated to provide accurate significance determinations throughout each chapter.	The analysis contained In Chapter 19, Cultural Resources, is accurate. The table titled, Comparison of Impacts after the Application of Mitigation Measures on Cultural Resources by Alternative, is a summary table of the contents described in Impact CUL-1 and specifically includes impact determinations after the application of mitigation. As described in the title for Table 19-0, this table summarizes the impacts after the application of mitigation measures. Table 19-5 summarizes impacts before the application of mitigation. The application of mitigation is what accounts for the difference in the count of impacts on Built-Environment Historical Resources between the two tables.
528-27	Similar to agricultural impacts, the DEIR's reluctance to provide possible compensatory mitigation locations for the North Delta Arc creates a void in the impact analysis. Here, the DEIR states, "Because the location of the channel margin and tidal habitat restoration has not yet been identified, it is not known whether built-environment historical resources would be present." (DEIR, p. 19-48.) However, the DEIR fails to provide	Based on the analysis in the EIR, the final compensatory habitat mitigation needs for the project will be determined once all regulatory permits and approvals are secured and the full extent of the mitigation requirements area known. As described in Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, and Common Response 3, Alternatives Development and Description, the project alternatives in their entirety are analyzed at a project level of detail. However, because

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	an explanation for why it is infeasible to determine the locations of these mitigation projects. (See Save the Agoura Cornell Knoll v. City of Agoura Hills (2020) 46 Cal.App.5th 665, 691-94.) The DEIR then concludes: "Mitigation Measure CUL-1: Prepare and Implement a Built-Environment Treatment Plant in Consultation with Interested Parties would be implemented to mitigate effects on resources if they are present in the restoration areas, but, as with construction of the project, implementation of this mitigation measure cannot guarantee resources would be entirely avoided. Therefore, the project alternatives combined with compensatory mitigation would not change the overall impact conclusion of significant and unavoidable." (DEIR, p. 19-48.) Although this may be true, this omission still violates CEQA. Without providing information on the extent of the potentially significant impacts, the DEIR has deprived the public of an understanding of the environmental consequences of the project. (CEQA Guidelines, § 15151.) This is particularly problematic when dealing with irreplaceable resources such as historic and cultural resources. Therefore, the DEIR must determine where the project compensatory mitigation could be located and determine the potential impacts to historic and cultural resources at those sites.	specific locations are not identified or acquired, data, such as location or design, are not yet available for tidal habitat and channel margin habitat (Compensatory Mitigation Plan, Attachment Compensatory Mitigation Measures: CMP-1, CMP-2, CMP-23, CMP-24, CMP-25, CMP-26, CMP-27, CMP-28) the degree of specificity of the analysis for those CMP measures are analyzed at a programmatic level and the analysis necessarily reflects the available detail. Please refer to Appendix 3F, section titled Tidal Habitat Mitigation Framework regarding site selection and targeted habitats.
528-28	IX. Sediment Removal, Excavation, Dredging, Collection, and Drying Would Lead to Odors and Other Unanalyzed Impacts (Ch. 23) According to Table 21-8 Estimated Solid Waste during Operations by Alternative (cubic yards/year), Alternative 5 would collect and eventually dispose of 10,098 cubic yards per	The comment paraphrases and quotes content from Chapter 23, Air Quality and Greenhouse Gases, of the EIR. Please see responses to comments 528-17 and 528-18 regarding the impact of removal of sediment on HABs and aquatic resources. The odor analysis presented in Chapter 23, Impact AQ-8, qualitatively

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	year of sediment. (DEIR, p. 21-45) This sediment would have otherwise been suspended and provided visual cover for fish such as the Delta smelt. (DEIR, p. 12-11 and 12-14) Decreased sediment also increases water clarity, which can help create conditions that increase the incidence of HABs. (DEIR. p.9E-3) This sediment also includes organic material which as it dries can contribute to significant odors to sensitive receptors. The DEIR states that: “Odors from excavated materials are primarily generated from hydrogen sulfide gases through decomposition of organic materials in the soil particles . . .” and that “Drying and stockpiling of the removed surface soil and sediment would also occur under aerobic conditions, which would further limit any potential malodorous products.” (DEIR, p. 23-157) These assertions leave out both individual sources and the cumulative sum of the nuisance odor sources. Soil excavation and removal at the intakes during construction is identified as a potential odor source (DEIR, p. 23-158 and 23-159), but the organic content claims are unsupported by any quantitative analysis. In addition, the DEIR’s discussion for project operations odors ignores entirely the dissolved organic content in the decanted water with which the material would be dried. The material dredged at the face of the intakes in the Sacramento River is simply not analyzed for odor generation. (Delta Conveyance Design Draft Engineering Report Central & Eastern Corridor Options [CER Central and Eastern], p. 79, and Appendices p. 8, 74, and 99 [13,300 cy at the beginning of intake construction and 8,700 cy at the end of construction dredged directly from the river.] Dredged material and the water that is decanted from it can contain significantly more organic materials and hazardous chemicals than described in	analyzes the potential for construction and operation of the project to result in odors emissions affecting a substantial number of people. While the comment expresses concern with the lack of quantitative assessment, qualitative odor analysis is consistent with standard practice and local air district guidance. For example, the Sacramento Metropolitan Air Quality Management District’s (2021:7-2) CEQA Guidelines state, “there are no quantitative or formulaic methodologies to determine the presence of a significant odor impact" and "the District recommends that odor analyses strive to fully disclose all pertinent information.” Consistent with air district guidance, Impact AQ-8 considers the nature of potential project odor sources, proximity of receptors, meteorological conditions in the study area, and odor complaint history of similar sources. Accordingly, the EIR odor analysis is consistent with air district guidance for the provision of a transparent and complete odor analysis (Sacramento Metropolitan Air Quality Management District 2021:7-2). The comment is incorrect in its characterization of potential odors from operation of the intakes. The comment assertion that the EIR does not analyze operational odors is also incorrect. Impact AQ-8 acknowledges that sediment would be periodically collected from the intakes and that if present in the sediment, anaerobic decay of organic material can generate odors. However, as discussed in Impact AQ-8, sediment collected through the intakes would primarily remain underwater in the sedimentation basins. When the sediment is moved to the sediment drying lagoons, the slurry would be conveyed from under the water surface in a pipeline. Accordingly, the sediment would never be “dry,” as alleged by the commenter, and thus the potential for odors during operation of the intakes would be low. The comment is incorrect in its characterization of potential odors from dredging at the face of the intakes. Dredging would only occur along the riverbank at the face of the intake at the end of the construction. There would be no dredging at the beginning of or during intake construction.

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	the DEIR, and the DEI fails to analyze these common considerations. (Wang et al., Odour and Odorant Emission Estimation of Dredged Sediment (2010), Exhibit 4 [Attachment 4}; United States Environmental Protection Agency, Evaluating Environmental Effects of Dredged Material Management Alternatives – A Technical Framework (2004), Exhibit 5 [Attachment 5].) The odor from dredged materials is well documented to be difficult to manage and requires significant testing and mitigation, far beyond that described in the DEIR. (Parsons, Onondaga Lake Sediment Management Winter 2013 Additional Odor Mitigation Plan (2013), Exhibit 6 [Attachment 6].)	The values cited in the comment include 13,300 cubic yards at Intake B and 8,700 cubic yards at Intake C at the end of construction to allow for riprap placement. This sediment would be removed and loaded on a barge to be returned to the Port of Stockton within 1 to 2 days for disposal or reuse, depending upon the barge operator. This sediment would not be dried on-site, thereby preventing the potential for odor emissions. Refer to Chapter 23, Impact AQ-8. See also Chapter 25, Hazards, Hazardous Materials, and Wildfire, for analysis of public exposure to hazardous materials, including those that may be encouraged during soil excavation and dredging. The project has been designed to reduce the potential for odor generation during construction and operation. Specifically, as discussed in Impact AQ-8, drying and stockpiling of soil and sediment during construction would occur under aerobic conditions. Tackifier materials would be applied on top of the stockpiles. The intake collection system has also been designed to trap only larger sediment particles, allowing smaller, organic particles to bypass collection. DWR would comply with all air district rules and regulations, including those pertaining to public nuisance. Also, as discussed in Chapter 3, Description of the Proposed Project and Alternatives, there will be an assigned Delta Conveyance Project ombudsman. The project ombudsman would be available to community to help address any project issues, including odors, should any cause concern during project construction or operation.
528-29	Diesel emissions are another major source of odors, which the DEIR simply dismisses without analysis as temporary despite the extended length of construction. (DEIR, p. 23-157 and 23-158.) The project would also cause odors from “diesel exhaust from construction equipment, asphalt paving, and excavated organic matter from the removal of surface soils and sediment,” (DEIR p. 23-157.) Per the DEIR, “a project may reasonably be expected to have a significant adverse odor impact where it ‘generates odorous emissions in such	The comment assertion that the EIR dismisses potential odor impacts from diesel combustion is not supported by the analysis presented in Chapter 23, Air Quality and Greenhouse Gases. Impact AQ-8 identifies diesel exhaust from construction equipment as a potential odor source. As noted in Impact AQ-8, the generation and severity of odors depends on several factors, including the nature, frequency, and intensity of the source. Construction equipment would not operate continuously at individual construction sites. As shown in Appendix 23B, Air Quality and

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	quantities as to cause detriment, nuisance, or annoyance to any considerable number of persons or to the public," (DEIR p. 23-53). The DEIR states: Odors from equipment exhaust would be localized and generally confined to the immediate area surrounding the construction site. These odors would be temporary and localized, and they would cease once construction activities have been completed. (DEIR, p. 23-157.) The DEIR contemplates a 13-year construction period, with some sensitive receptors being essentially adjacent to the intakes and other undisclosed receptors along the trenches. So, in some cases, the receptors would be exposed for many years to construction diesel and dredging odors, and then in perpetuity to material drying odors, yet the DEIR asserts that these are less than significant.	GHG Analysis Activity Data, most equipment would operate fewer than 12 hours per day. Moreover, while construction of the project would require more than 10 years, activity would not be concentrated at a single location over this entire duration. Rather, activity would be spread throughout the Plan Area. Likewise, at larger sites that would require longer construction durations, such as the intakes, equipment would operate over the entire site and not a single location. For these and other reasons, diesel equipment is not identified by any Plan Area air district as a source typically associated with substantial odors (Sacramento Metropolitan Air Quality Management District 2021:7-2; San Joaquin Valley Air Pollution Control District 2015:103; Bay Area Air Quality Management District 2017:3-4). The level of detail and analysis presented in the EIR odor assessment is consistent with air district guidance for the provision of a transparent and complete odor analysis (see response to comment 528-28) and meets the CEQA requirement to make a good-faith effort at full disclosure of potential odor impacts of the project. See response to comment 528-28 for discussion on odors from dredging and material movement.
528-30	X. The DEIR Fails to Adequately Analyze Noise Impacts" The project would create years of construction noise at various locations throughout the Delta. (DEIR, p. 24-1.) The construction noise would be created by the use of heavy equipment, pile-driving, operation of concrete batch plants, as well as others (DEIR, p. 24-20 - 21.) The ambient noise levels near the construction sites would be elevated for years at a time. This type of long-term noise exposure has been shown to impact both mental and physical health. However, the DEIR fails to properly analyze these long-term impacts. A. Noise Levels Would Cause Health Impacts	The analysis in Chapter 24, Noise and Vibration, of the Draft EIR acknowledges that project construction would occur over several years and would result in an increase in ambient noise levels at some receptor locations in the study area, which are included in results tables in Appendix 24B, Construction Sound Level Model Predictions. The overview of auditory and non-auditory effects in Chapter 24 is intended to acknowledge that noise effects are not limited to hearing loss, and that there are other effects that adversely affect quality of life such as sleep disturbance. The U.S. Environmental Protection Agency (EPA) in 1974 published a guidance document, Information on Levels of Environmental Noise

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	The DEIR finds construction noise would exceed both daytime and nighttime noise level criteria. (DEIR, p. 24-64.) Therefore, Impact NOI-1 would be significant and unavoidable with mitigation (DEIR, p. 24-64.) CEQA requires an EIR to "identify and focus on the significant environmental effects of the proposed project . . . examin[ing] changes in the existing physical condition in the affected area," including "health and safety problems caused by the physical changes." (CEQA Guidelines, § 15126.2, subd. (a).) This section "also suggests that a connection be drawn between . . . potential project emissions and human health impacts. Such a connection would meet CEQA's requirements." (Sierra Club v. County of Fresno (2018) 6 Cal.5th 502, 520 (Sierra Club).) The DEIR fails to analyze the health impacts of noise on the surrounding communities. It contains one overview paragraph regarding health impacts, which states: "Auditory and non-auditory effects can result from excessive or chronic exposure to elevated noise levels. Auditory effects of noise on people can include temporary or permanent hearing loss. Non-auditory effects of exposure to elevated noise levels include sleep disturbance, speech interference, and psychological effects such as annoyance. Land use compatibility standards for noise typically are based on research related to these non-auditory effects". (DEIR, p. 24-8.) Though this information provides an overview, it fails to identify noise levels or the duration at which these impacts may occur. This omission makes it impossible to determine whether the project's noise levels would create these impacts,	Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, which provides guidance on levels to "protect the public from adverse health and welfare effects" (U.S. Environmental Protection Agency 1974). As such the EPA addresses noise as a public health concern. The guidance acknowledges that developing noise standards is not a function of the Federal government, but rather is the domain of states and their political subdivisions. The General Plan Guidelines published by the Governor's Office of Planning and Research, provides standards for noise compatibility based on principles set forth in EPA guidance (Governor's Office of Planning and Research 2017). In consideration of the commenter's assertion that "noise levels would cause health impacts," the daytime sound level limit used for the project, 60 dBA 1-hour L_{eq}, is analogous to conversational speech at a distance of 5 feet, at a normal voice volume with greater than 95% sentence intelligibility (U.S. Environmental Protection Agency 1974). Sounds at this level are common in outdoor environments, which fluctuate depending on setting, whether transportation-related, occupational, rural or urban. The health effects cited by the commenter are generally linked to sleep disturbance (e.g., Comment attachment 9, Governor's Office of Planning and Research 2017). Noise limits for the project were set in consideration of the project's rural setting, geographic scope, duration, and presence of protected species in the area. In establishing the 60 dBA noise limit, consideration was given to DWR Specification 05-16 (California Department of Water Resources 2005:01570-12) and State General Plan noise compatibility guidelines, which considers ambient levels of up to 60 dBA L_{dn} (equivalent to 60 dBA daytime/50 dBA nighttime) at residential use to be "normally acceptable" and not requiring sound attenuation measures. The analysis in the EIR concludes that impacts would be significant and

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	especially the non-auditory effects. The California Supreme Court recently addressed the need to correlate air emissions to human health conditions in Sierra Club, supra, 6 Cal.5th at 516: "The EIR's discussion of health impacts of the named pollutants provides only a general description of symptoms that are associated with exposure to the ozone, particulate matter (PM), carbon monoxide (CO), and nitrogen dioxide (NOx), and the discussion of health impacts regarding each type of pollutant is at most a few sentences of general information. The disclosures of the health effects related to PM, CO, and sulfur dioxide fail to indicate the concentrations at which such pollutants would trigger the identified symptoms. (Id. at 519, emphasis added.) The same criticism applies to the DEIR's analysis of human health impacts resulting from noise emissions. Although generally acknowledging that there are health impacts associated with noise emissions, the DEIR's generalized discussion "fail[s] to indicate the concentrations at which such pollutants would trigger the identified symptoms" from noise emissions. In Sierra Club, the court held that this approach failed to comply with CEQA's duty to inform, stating in relevant part: "The EIR must provide an adequate analysis to inform the public how its bare numbers translate to create potential adverse impacts or it must adequately explain what the agency does know and why, given existing scientific constraints, it cannot translate potential health impacts further." (Id. at 522, emphasis added.) As in Sierra Club, the DEIR fails to	unavoidable due to exceedance of DWR daytime and nighttime noise standards. For any given location, nighttime use of heavy equipment would be shorter in duration relative to daytime use, because night work would be limited to activities requiring concrete pours. In terms of total night work, concrete pours would be done for a total duration of one week to one month for most project facilities. Nonconsecutive work would be needed in some cases but would require this amount of time overall. Building interior sound levels may be expected to be quieter than outdoor levels, especially with doors and windows closed. The HVAC item in the sound insulation program under Mitigation Measure NOI-1 is offered for homes that lack central air, so that windows may be closed, reducing interior noise from exterior sources. Under these conditions, outdoor-to-indoor noise reduction is in the range of 20 to 25 dB for light frame construction (Federal Highway Administration 2011), which correlates to an interior level of 35 to 40 dBA where the exterior noise level is 60 dBA. According to California General Plan Guidelines cited above, an interior noise level of 45 dBA or less is consistent with normal residential activity, including sleep. The nighttime outdoor standard of 50 dBA 1-hour L_{eq} was used in the Draft EIR as a conservative value to address effects related to nighttime disturbance. Accounting for outdoor-to-indoor noise reduction of normal light frame construction as discussed above, outdoor noise levels exceeding 50 dBA would generally not interfere with sleep, although there is a higher potential for sleep disturbance where levels of nighttime concrete pours are 65 dBA or greater, as indicated in Appendix 24B of the Draft EIR. However, as noted above, night concrete pours would be shorter in duration relative to the entire project.

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	adequately correlate noise emissions to identified health impacts or explain why it is infeasible to do so. Several studies suggest that there are numerous health impacts from exposure to high levels of noise. In an evaluation of children, the WHO notes that indirect effects include impacts to stress hormones, blood pressure, muscle spasms, annoyance, sleep disturbance, mental health, ability to read and concentrate, and trouble with memory and attention. (World Health Organization, Children and Noise: Children's Health and the Environment (2009), Exhibit 7, pdf p. 23.) The study also found that noise levels between 40-50 dBA result in a 10-20% chance of awakening, and exposure to noise levels greater than 70 dBA causes "increases in vasoconstriction, heart rate and blood pressure." (Children and Noise, pdf p. 24.) A different study found that "noise levels measured in this study are of sufficient intensity to be injurious. For example, a 5-dB(A) increase in noise level between 45 and 65 dB(A) has been associated with 38% increased odds for hypertension even after control for several well-known risk factors." (King et al., The New York Academy of Medicine, Noise Levels Associated with Urban Land Use (2012), Exhibit 8 [Attachment 8], p. 1028.)	
528-31	In addition to the highest noise levels, another important factor regarding health impacts from noise is the increase in ambient noise levels. The DEIR states, "a 10-db increase is generally perceived as a doubling of loudness." (DEIR, p. 24-3.) Many of the project's activities would create noise levels of 5 or more dB. (DEIR, pp. 24-31, 24-56, 24-57.) In 2017, Toronto Public Health released a report that compiled studies regarding the health impacts of noise. It found that the probability of several health effects is increased by dBA that is less than 70	The thresholds used for the project evaluate adverse effects to human health in consideration of principles in the EPA document Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (U.S. Environmental Protection Agency 1974). Please see previous response to comment 528-30 for further discussion. Therefore, the EIR does not ignore impacts on human health, as asserted in the comment. Regarding the increase in noise levels, the analysis in the EIR acknowledges

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	but increases by 5 or 10. "Seidler and colleagues (2016b) reported a statistically significant increase in odds of hypertensive heart disease for every 10dBA increase in noise over 55dBA (Leq 24)." (Toronto Public Health, How Loud is Too Loud? Health Impacts of Environmental Noise in Toronto (2017), Exhibit 9 [Attachment 9], p. 10 [TPH].) "Sorensen and colleagues (2011a) reported that in people over 64.5 years of age, exposure to every 10 dBA (Lden) increase in residential road traffic noise was associated with a 27 percent higher risk for stroke." (TPH, pp. 10-11.) Recio and colleagues (2016) found a 3.5 percent increase in the risk of death from myocardial infarction and 2.9 percent increase in the risk of death from ischaemic heart disease, and 2.4 percent increase in the mortality rate of cerebrovascular disease for every 1 dBA increase in nighttime noise levels between 58.7 - 76.3 dBA (Lmax night) for people 65 and older. For people younger than 65, there was an 11 percent increased risk of death from myocardial infarction and ischaemic heart disease for every 1 dBA increase in average nighttime noise levels between 56.2 - 69.9 dBA. (TPH, Exhibit 9 [Attachment 9], p. 10.) The DEIR estimates the duration of project construction activities to be 12 to 14 years. (DEIR, p. 24-1.) Rather than describe how consistent construction noise over more than a decade might impact the cognitive and emotional health of the surrounding communities, the DEIR chose to ignore this human health impact.	that construction noise impacts would be significant and unavoidable after mitigation, as stated in Chapter 24, Noise and Vibration.
528-32	The DEIR Improperly Defers Noise Studies Resulting in an Inadequate Impact Analysis	The commenter's assertion that the absence of data related to noise level testing of piles "results in an informationally deficient document" is incorrect. CEQA does not require a lead agency to perform every possible

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	The DEIR also includes future field investigations. These investigations would conduct a cofferdam pile installation test. (DEIR, p. 24-61.) The test piles would be used to "test pile drivability using impact and vibratory methods up to the required pile tip depth." (DEIR, p. 24-61.) "It is anticipated that sound levels would be measured during the process of pile testing, to determine sound-level values using each method and the performance requirements for potential mitigation options." (DEIR, p. 24-61 - 62.) The sound-level values obtained through this testing would be used to update the noise modeling. (DEIR, p. 24-64.) The DEIR concedes that updated modeling would "be used to determine where impacts would occur to receptors due to pile driving, to update the construction noise analysis for all facilities, based on daytime and nighttime noise level criteria[.]" (DEIR, p. 24-64.) Failing to perform these tests prior to the DEIR results in an informationally deficient document. The recent Save the Agoura Cornell Knoll v. City of Agoura Hills (2020) 46 Cal.App.5th 665 provides guidance (Agoura). In Agoura, the court found mitigation for special-status species to be improperly deferred. (Id. at pp. 691-694.) In particular, the court found reliance on future surveys was an impermissible deferral because "there was no showing that it was infeasible for the City to perform these surveys prior to project approval so that the MND could provide an adequate assessment of the sensitive plant populations that may be impacted." (Id. At p. 692.) The same is true here. The DEIR has failed to provide any explanation for why testing to determine accurate noise levels was infeasible prior to the publication of the DEIR. Failing to conduct this study prior to the DEIR's analysis results in an inadequate impact analysis of noise.	study or experiment to evaluate a potential impact. (CEQA Guidelines, § 15204(a).) Here, the noise analysis is based on interpreting the available scientific data, using conservative assumptions for the levels of noise emissions from construction equipment, modeling, and prior pile driving noise measurements. The analysis of pile driving noise in the EIR is intended to present a worst-case condition. The modeling of pile drivers in Chapter 24, Noise and Vibration, assumed source noise levels in the upper range of values measured in previous studies (table titled Source Sound Levels for Pile Driving in Chapter 24 of the EIR; Washington State Department of Transportation 2018). The previously collected measurements were based on impact-driven piles. For the proposed project, vibratory methods would primarily be used. As stated in Chapter 24, "Vibratory methods would be used to drive sheet piles and intake foundation pier casings at all locations. Impact driving may be required in some situations where hard or gravelly soil is encountered such that vibratory methods cannot penetrate the soil layer." Based on geotechnical investigations to date, the use of impact driving is anticipated to be limited (Delta Conveyance Design and Construction Authority 2022). However, the analysis in the EIR assumes impact driving will be needed in some cases. As stated in Mitigation Measure NOI-1, future field investigations would include the testing of pile driving shrouds to further reduce noise levels disclosed in the EIR. Accounting for difference in pile type and additional noise reduction, future field investigations are expected to demonstrate lower noise levels than those presented in the EIR. Any future field investigations would comply with state environmental review requirements, as described in Chapter 3, Description of the Proposed Project and Alternatives.

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	Although this new information may not change the determination that Impact NOI-1 would be significant and unavoidable, it could show that the noise impact would be greater than previously disclosed. This is important because, as described above [See comments 30,31], it could change the analysis of health impacts from noise.	
528-33	XI. Conclusion The State and its water contractors should be investing in new technologies that provide additional water to local jurisdictions, not recycling outdated ideas that were put forth and rejected decades ago. The real alternatives to the Tunnel should include desalination, water recycling, groundwater remediation, or other similar measures where local supply enhancement is emphasized. These types of alternatives would provide for a more sustainable future and are worth the State's long-term investment. The Tunnel would not generate additional water and is dependent on moving water large distances at great expense to both Californians and the environment. Due to the impacts discussed in this letter and the short-sightedness of the project as a long-term investment, LAND requests that DWR abandon this project and pursue more economical, sustainable, and environmentally friendly options.	Please refer to Chapter 2, Purpose and Project Objectives, regarding the purpose of the project. Please refer to Chapter 3, Description of the Proposed Project and Alternatives, in the section titled No Project Alternative; and Appendix 3C, Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions. Please also refer to Common Response 3, Alternatives Development and Description, regarding the development of the reasonable range of potentially feasible alternatives evaluated in the EIR, and to Common Response 4, No Project Alternative Description and Analysis, regarding reasonably foreseeable actions that are considered part of the No Project Alternative, which include additional water conservation programs, water recycling projects, groundwater recovery projects, desalination of seawater or brackish groundwater, surface water storage, groundwater management, and water transfers and exchanges that may be pursued by a variety of local, state, and federal agencies. The California Water Resilience Portfolio identifies modernization of Delta water supply infrastructure as an action needed to improve water supply resiliency for the health and welfare of all Californians. The Delta Conveyance Project is meant to complement and support other portfolio water supply management actions.
528-34	[ATT 1: National Marine Fisheries Service, Biological Opinion for the Non-Physical Barrier of the South Delta Temporary Barriers Program.]	The commenter is providing this attachment in support of their comments. Please see responses to comments 528-20 and 528-21, which address these comments.

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528-35	[ATT 2: National Marine Fisheries Service, Summary of Marine Mammal Protection Act Acoustic Thresholds.]	The commenter is providing this attachment in support of their comments. Please see responses to comments 528-20 and 528-21, which address these comments.
528-36	[ATT 3: Rebuttal Testimony of Michelle Leinfelder-Miles]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
528-37	[ATT 4: Article by Wang et al, titled "Odour and Odorant Emission Estimation of Dredged Sediment" dated 2010.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
528-38	[ATT 5: United States Environmental Protection Agency report titled "Evaluating Environmental Effects of Dredged Material Management Alternatives -- A Technical Framework", revised May 2004.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
528-39	[ATT 6: Report titled "Onondaga Lake, Sediment Management Winter 2013 Additional Odor Mitigation Plan", dated April 2013.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
528-40	[ATT 7: World Health Organization, Children and Noise: Children's Health and the Environment (2009).]	The commenter is providing this attachment regarding potential adverse health, psychological and cognitive effects on children from transportation noise in support of their comments. Please see responses to comments 528-30 and 528-31, which address these comments.
528-41	[ATT 8: King et al. 2012. Noise Levels Associated with Urban Land Use. Journal of Urban Health Vol.89 (6).]	The commenter is providing this attachment regarding noise level differences between residential and mixed-use urban areas and potential implications on public health in support of their comments. Please see responses to comments 528-30 and 528-31, which address these comments.
528-42	[ATT 9: Toronto Public Health. How Loud is Too Loud? Health Impacts of Environmental Noise in Toronto. Technical Report. April 2017.]	The commenter is providing this attachment regarding adverse health, psychological and cognitive effects on children from transportation noise in support of their comments. Please see responses to comments 528-30 and 528-31, which address these comments.

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529-1	(Pearson District), Reclamation District No. 551 is a public agency within the Sacramento-San Joaquin Delta, adjacent to and within the proposed Delta Conveyance Project (Delta Tunnel), area of influence. The District appreciates the opportunity to submit comments on the draft Environmental Impact Report (DEIR) for the proposed Delta Tunnel.	This information describes the background of the commenter and other general introductory text. It is not a comment on the contents of the EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.
529-2	These comments are focused on the likely significant and unavoidable impacts and concerns related to flood control, drainage and the potential impacts related to access, resource scarcity, buried and exposed resources, levee stability and other items tied to operations, maintenance, repairs, rehabilitation and replacement (OMRR&R) over the life of the construction of this project which could impact Pearson District, a Project levee system within the Sacramento River Flood Control Project in the North Delta, directly adjacent to and downstream of the proposed southern-most intake-settlement basin and tunneling facility.	This comment contains introductory comments and background of the letter and other general introductory text. Responses to the detailed comments in this letter are provided herein. In general, the concerns raised regarding flood control, drainage and levee stability are addressed in Chapter 3, Description of the Proposed Project and Alternatives, Chapter 7, Flood Protection, as well as Common Response 3, Alternatives Development and Description, and Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs.
529-3	The Department of Water Resources (DWR) has been actively pursuing potential isolated water conveyance infrastructure that would impact elements of flood control and drainage for reclamation districts in the delta, depending on the location and proximity of intakes, and intermediate shafts, including potential impacts associated with settlement along the intake and tunneling alignments in the proposed alternatives and preferred alternative, alternative 5.	The comments regarding the significance of impacts on flood control, drainage, and settlement are not supported by the analyses contained in Chapter 7, Flood Protection, and Chapter 10, Geology and Seismicity. Chapter 7 of the EIR provides the results of the analysis of flood control and drainage impacts attributable to constructing and operating the Delta Conveyance Project. As demonstrated in Chapter 7, all flood and drainage related impacts would be less than significant for all project alternatives, with the exception of Alternatives 2a and 4a for Impact FP-1. The construction-related impacts occurring under Alternatives 2a and 4a would be reduced to a less-than-significant level through mitigation. Please see Chapter 10, Impact GEO-4, which analyzes the potential for tunnel-induced ground settlement and surface structure-related ground settlement. The impact was determined to be less than significant.

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		Furthermore, the Tunneling Effects Assessment technical memorandum (Delta Conveyance Design and Construction Authority 2022c) provides a sufficient level of detail to show that settlement will be minor overall and that future geotechnical studies would determine what site-specific measures would be needed to protect existing infrastructure and buildings. With today's state-of- the-art pressurized tunnel boring machines, face losses are unlikely to cause surface settlement problems as long as face pressures are maintained, voids around the segmental lining are filled with backfill grout, injection quantities are continuously monitored and checked with theoretical volumes, and additional backfill grout is automatically injected if needed.
529-4	Dual Conveyance Alternative Description A critical element of dual conveyance requires a detailed project description of the necessary rehabilitation and improvement of the existing system of levees throughout the Delta. This should include an evaluation of Project and Non-Project levee features to ensure reliability of the through delta conveyance system. This should include not only levees and channels downstream of the Delta Cross Channel and the Old/Middle River corridor, but all levee systems to ensure protection of freshwater through the Delta, as well as ensuring protection and access to intake and shaft components of the proposed Delta Tunnel. This element of the preferred alternative is not well defined, it is difficult to determine if this is a significant element in the current DEIR. This should be included in the final EIR, and added to the no-action alternative as well.	Delta-wide levee work is beyond the scope of the Delta Conveyance Project. Please refer to Common Response 3, Alternatives Development and Description, for a discussion of why levee repairs and upgrades were not included as a project alternative in the EIR. Impact FP-1 in Chapter 7, Flood Protection, and the Delta Conveyance Design and Construction Authority Intake Flood Management technical memorandum and Levee Vulnerability Assessment technical memorandum (Delta Conveyance Design and Construction Authority 2022a, 2022b) assessed impacts on urban and nonurban Delta levees during the construction and postconstruction phases of the project. The analysis in Chapter 7 concludes that the construction and operation of the Delta Conveyance Project would not result in reduction in flood protection provided by the existing levee system. Please also see Common Response 4, No Project Alternative Description and Analysis, regarding the CEQA requirements for describing and evaluating a No Project Alternative in an EIR and how the No Project Alternative for the Delta Conveyance Project meets those requirements.

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529-5	Most levees do not meet a structural, FEMA, or USACE standard tied to future federal support or warrant the risk to the significant investment proposed without addressing the long-term reliability of the required flood control system improvements. Rehabilitation and improvement of the existing Delta levee system provides assurances for water supply reliability, water quality and support of the Co-Equal goals. Pearson District [Reclamation District No. 551] does not have a FEMA's 100-year certification and is not planning to meet that standard. The Pearson District's Five-year Plan will be completed in 2023 and does provide a preliminary cost and quantity estimate to meet OMRR&R [operations, maintenance, repairs, rehabilitation and replacement] requirements and maintain PL 84-99 eligibility. The Final EIR should incorporate cost estimates for the Delta Project Levees to meet PL 84-99 eligibility requirements. Any movement, or settlement caused by the boring of the tunnel could fail this critical District feature. The Final EIR should describe how this and other similar features are to be monitored and improved in anticipation of the proposed project.	Please refer to Chapter 2, Purpose and Project Objectives, as well as Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the adequacy of the purpose and objectives statements for the purposes of CEQA. Flood control improvements are not included in the project objectives. Please refer to Common Response 3, Alternatives Development and Description, regarding the alternatives screening process and the range and scope of alternatives considered, including suggestions for alternatives that would include improvements to existing levees. Although the Delta Conveyance Project is not a flood control project, it has been designed to ensure that intake structures on the Sacramento River and modified flood control levees would not reduce the protection afforded by the existing flood control system. As described in Chapter 7, Flood Protection, and Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, DWR does not own or maintain all levees in the Delta, and, depending on the levee and the area of protection, different standards and guidelines apply. Per CEQA Guidelines, Section 15124, a project description shall contain information pertaining to the general description of a project's technical, economic, and environmental characteristic, but not supply extensive detail beyond that needed for evaluation and review of the environmental impact. As such, detailed costs are not presented in the EIR. Please refer to Common Response 7, Implementation Considerations, regarding project costs and funding. In regard to settlement caused by tunnel boring, please see Chapter 10, Geology and Seismicity, Impact GEO-4, which analyzes the potential for tunneling-induced ground settlement and surface structure-related ground settlement. The analysis found that as a result of actions that would be taken to prevent settlement, including site-specific evaluations of the settlement hazard associated with the site-specific soil conditions overlying

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		the tunnel throughout the alignment and compliance with applicable design standards and building codes, this impact would be less than significant. Ground settlement is also discussed in the Tunneling Effects Assessment technical memorandum (Delta Conveyance Design and Construction Authority 2022c). The settlement values included in the technical memorandum are unmitigated and are based on the excavated diameter that includes the overcut. Please see response to comment 529-3 regarding the unlikelihood that face losses would cause surface settlement. As stated in Chapter 3, Description of the Proposed Project and Alternatives, field investigations describe past and future efforts to identify geotechnical, hydrogeologic, agronomic, and other field conditions, which will guide the construction methods and monitoring programs used for final engineering design and construction.
529-6	Waterside impacts to bank protection downstream of the intakes, related to approach velocities, scour and eddy effects, and surge related drawdown that impact slope stability need to be evaluated and explicitly stated how the project will address these impacts. Any changes in water surface due to the construction project impacts must address embankment, slope stability, seepage potential, and the drainage impacts related to the project that affect public agIncies.	The issues raised in the comment are addressed in Chapter 7, Flood Protection. Specifically, the issues raised are discussed under Impact FP-1 and Impact FP-2. As stated in Chapter 7, these potential impacts would be less than significant for the proposed project. As discussed in Chapter 7, Impact FP-1, more detailed hydraulic evaluations concerning hydraulic loading, scour, and erosion forces at the interface between the intake structures and the river terrain would be completed as part of the final project design. At the intakes, which are jurisdictional levees, the levee will be realigned around the perimeter of the sedimentation basins and will be maintained by DWR as part of the Delta Conveyance Project. These levees will require USACE Section 408 Permits and Central Valley Flood Protection Board permits. Also, channel margin enhancements associated compensatory mitigation that would occur on federal project levees may require permission from USACE in accordance with USACE's authority under the Rivers and Harbors Act (33 United States Code § 408) and levee vegetation policy. Any restoration activities associated with compensatory mitigation would be designed, constructed, and maintained to ensure no reduction in performance of the federal flood project.

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		Please also refer to Common Response 3, Alternatives Development and Description, regarding the level of detail for the description of the proposed project and its alternatives and regarding the adequacy of the project description for the purposes of the CEQA analysis.
529-7	Impacts due to Duration of Construction A primary concern to Pearson District [Reclamation District No. 551] is the impacts associated with the duration of construction as a result of the proposed Delta Tunnel. The project will rely upon hauling materials between multiple project sites to staging and laydown areas relying on trucking primarily, and local, county, and state roads, bridges and numerous channel crossings, due to the construction of the intakes and facilities within Maintenance Area 9. All access corridors for Pearson District are critical, including Highway 160, Twin Cities Road, Hood Franklin Road, Lambert Road, and many others. These critical access corridors will all be impacted severely during construction of the project, with detours that are not well defined or understood.	DWR is committed to working closely with affected groups to develop site-specific construction transportation demand management plans to address local transportation impacts as described in Chapter 20, Transportation under mitigation measure TRANS-1. In Chapter 20, Transportation, in the section titled Impacts of the Project Alternatives on Transportation, specific limitations are identified to reduce effects on the community from construction-related traffic on Delta roadways. Please refer to Impacts TRANS-3 and TRANS-4 in Chapter 20, which address potential construction impacts as they relate to access, roadway improvements, and emergency access. A combination of transportation demand management plans (described in Mitigation Measure TRANS-1) and improvements to the transportation system would be developed in coordination with the State of California and local agencies to reduce potential effects related to traffic safety hazards and emergency access on Delta roadways serving project alternatives' construction sites.
529-8	There are impact to emergency services that should be addressed in the EIR. There will be an increase in traffic and the number of people working in the Delta because of the project and an increase in equipment being used and transported through the area. The State should work with emergency services to develop a rerouting plan and to set up a temporary firehouse.	Please refer to response to comment 529-7 regarding emergency services. In addition, as stated in Chapter 21, Public Services and Utilities, the issues related to emergency services are addressed under Impact UT-1 and impacts would be less than significant for all project alternatives. The primary emergency response services for the project would be provided by the construction contractors. As discussed in Chapter 20, Transportation, under Impact TRANS-1, significant and unavoidable impacts, with mitigation, would be expected due to an increase in average vehicle miles traveled during construction. Please see Chapter 3, Description of Proposed Project and Alternatives, and Appendix 3D, Intakes, Roads, and Shafts Summary Tables, regarding planned road improvements and haul roads identified to accommodate

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		construction traffic.
529-9	A setback of Highway 160 during construction does not make sense given the numerous channels and new levee crossings that would be required.	As described in Chapter 1, Introduction, the Delta Conveyance Design and Construction Authority has developed preliminary design concepts and alternatives to be evaluated in the EIR with a focus on ways to reduce or avoid construction related effects. The State Route 160 setback would be required to construct proposed north Delta intakes and maintain SR 160 for traffic during construction. The effects of this of SR 160 setback within intake construction sites is fully analyzed in the DEIR.
529-10	The duration and impact of associated with this long-term construction project will cripple Pearson District [Reclamation District No. 551] operations, let alone the immense impacts to landowners. Impacts due to construction traffic must be monitored and coordinated well in advance to ensure all elements associated with the project have been identified in advance with contingencies, BMP's, and all avoidance measures in place, along with a robust action plan to repair and replace during construction and rehabilitation post construction. This aspect should be well defined in the final EIR.	Please refer to response to comment 529-7 regarding transportation-related impacts and mitigation. DWR will conduct pre-construction pavement analysis of access roadway segments and determine the need to improve these access roads. Improvements may include pavement remediation (e.g., fill potholes, asphalt cracking and slurry seals), road widening (minimum of 12 feet), and other roadway design options to serve construction traffic. After completion of a project site construction, the condition of the access roads for each construction site will be analyzed and remediation of roadways will be completed as needed to return the facility to the improved conditions that were constructed by DWR.
529-11	A detailed analysis of all known features along, through and traversing the district [(Pearson District), Reclamation District No. 551] boundary, and those buried features including gas lines, active or abandoned gas wells which could impact seepage and groundwater levels if damaged during boring, impacting drainage, land use, and levee seepage and stability need to be analyzed. Other items such as unknown water systems, communication and data portals, and structural elements such as houses, facilities, pumpstations should be evaluated and regularly monitored. Any impact to the ability of pumps to operate due to changes in water surface elevations	As discussed in Chapter 3, Description of the Proposed Project and Alternatives, DWR would conduct a number of field investigations prior to construction to better understand field conditions and help guide appropriate construction methods and monitoring programs for final engineering design and construction. Field investigations include surveys to identify buried groundwater and gas wells, groundwater testing and monitoring, soil borings, fault studies, installation of monitoring devices, and vibratory testing, among other things. As stated in Chapter 21, Public Services and Utilities, DWR will coordinate with local and regional utility providers to address potential conflicts with local water, electric, natural gas, and telecommunications services.

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	needs to be identified as a possible impact due to project construction and long-term operations.	Potential changes in surface water elevations are discussed in Chapter 5, Surface Water, and analyzed in relevant resource chapters. As described in Chapter 5, in general, long-term average monthly flows for the project alternatives are similar to existing conditions, with some minor differences.
529-12	The significant trucking limitations caused by the massiver project could impact local resources for material delivery and hauling for OMRR&R projects and activities for Pearson District. There are concerns that local trucking capabilities, or increase in costs, due to scarcity, could impact the ability of Pearson District to perform work within limited budgets for services year over year. Given a 10+ year timeline for construction, this could impact the construction economy for many years.	The comment's claim that project construction would impact local trucking resources for material delivery and hauling for OMRR&R projects is not supported by the information documented in the Delta Conveyance Engineering Project Reports (EPRs) (Delta Conveyance Design and Construction Authority 2022d, 2022e) and the Draft EIR. As noted in the Logistics Strategy EPR, trucking resources are assumed to be provided by the contractor using a larger area outside of the Delta, including throughout the Sacramento Valley, San Joaquin Valley, and the San Francisco Bay Area. Contractors may also use trucking resources from other geographical areas, including southern California or other states and relocate the required trucking assets to the area. Therefore, local truck resources serving OMRR&R projects within the Delta region would be minimally impacted. Truck trips for construction of the project alternatives are included in the roadway segment and intersection analysis contained in Appendix 20A, Delta Conveyance 2020 Traffic Analysis, and Appendix 20C, Delta Conveyance 2040 Traffic Analysis. The traffic analysis contained in the appendices were completed to aid in the understanding of potential major increases to traffic volumes on roadways and vehicle delay at intersections that may be caused with the addition of project-generated construction traffic. Refer to Chapter 20, Transportation, and Common Response 14, Transportation, for additional discussion. Potential socioeconomic impacts from project construction were also assessed in Chapter 17, Socioeconomics, as they relate to local employment and community cohesion (see ECON-1 and ECON-3). These

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		impact analyses consider all required construction activities, including truck driving.
529-13	Any construction project areas, or impact areas due to tunneling operations, that require dewatering and drainage must consider self-sufficient and independent drainage through lands within the District, operated and maintained by Pearson District [Reclamation District No. 551]. The existing system of drainage ditches and canals were designed for existing conditions only. The Pearson District pumpstation(s) are not designed for additional construction dewatering for project areas within the District. Evaluation of respective drainage systems should be performed in advance and consideration for how this drainage will impact property owners' ability to control water surface elevations, drain lands, and maintain water quality within the District.	As described in the Process and Method of Review for Impeding or Redirecting Localized Flood Flow section of Chapter 7, Flood Protection, and in the Local Water Supply, Drainage, and Utilities section of Chapter 3, Description of the Proposed Project and Alternatives, the location and capacity of existing drainage and irrigation facilities that may be affected by construction of the Delta Conveyance Project would be determined and the capacity of this infrastructure to convey drainage or irrigation water would be maintained. At all construction sites, all stormwater and dewatering flows generated would be collected, treated on-site, and stored on-site for re-use on-site to minimize the need for diverting other water; the water would be stored in tanks on the construction site for reuse for dust control and other construction needs. The storage facilities would also eliminate the "peak flow" stormwater flows into existing drainage channels. If the storage tanks are full and on-site water demands are fully met, the water would be discharged at a rate that would not increase peak flow rates in the drainage channels because the water would be discharged infrequently and after the peak storm event had completed. The proposed project and alternatives would discharge treated water at a rate that would not increase peak flow rates for these waterways. Additionally, as noted in the discussion of Impact FP-2 in Chapter 7, a review of the drainage systems will be performed to assess the impacts of tunneling operations, dewatering, and drainage as part of the final design. Please refer to Chapter 3, Description of the Proposed Project and Alternatives, in the section titled Local Water Supply, Drainage, and Utilities, and Chapter 7, Flood Protection, for more information. Please refer to Chapter 8, Groundwater regarding the potential for the project to impact groundwater levels. Impacts to agricultural facilities are

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		addressed in Chapter 15, Agricultural Resources; as described in mitigation measure AG-3, affected supporting agricultural infrastructure would be replaced or relocated to reduce impacts on agriculture. As noted in Chapter 3, drainage will be addressed at each construction location, captured, and treated on site.
529-14	Higher water tables, and adjacent stage in surrounding water bodies, Snodgrass Slough and the Sacramento River (for example), could also impact the interior water table, and increase drainage costs, or change soil conditions affecting landowners orchards, vineyards, crops and access within Pearson District [Reclamation District No. 551]. This must be addressed in the final EIR.	Please refer to response to comment 529-13 regarding groundwater levels and drainage. Furthermore, the analysis in Impact GW-1 and Impact GW-2 shows that under construction, groundwater levels would generally be maintained at the level of existing conditions. Please refer to Chapter 11, Soils, regarding the evaluation of the potential impacts on soil conditions.
529-15	Highway 160 and County Roads cross the District [(Pearson District), Reclamation District No. 551], and provides access to all connected lands between Hood, Clarksburg, Freeport, West Sacramento, Sacramento, Elk Grove, Point Pleasant, Walnut Grove, Rio Vista, Thornton, Lodi and Stockton. The numerous landowners, businesses, schools, emergency and public service agencies, and the traveling public all rely on dependent infrastructure to safely travel, work, live and recreate in the Delta.	Please see Common Response 14, Transportation, regarding comments about the methodology and approach to impact analysis. Please see Chapter 20, Transportation, regarding information on selected study areas and the analysis of potential transportation impacts. The project was developed to incorporate traffic restrictions and road improvements to limit effects on local and regional roadways, including Interstate 5, SR 160, SR 99, SR 12, SR 4, Twin Cities Road, and Hood-Franklin Road, as discussed in Chapter 20 in the section titled Impacts of the Project Alternatives on Transportation.
529-16	Emergency operations during high water events due to rainfall runoff or emergency flood events occur regularly in the Delta every 5-10 years, depending on many factors. This comment is not meant to quantify the impacts associated with construction elements, rather, the final EIR must evaluate the range of potential impacts project construction sites will have on a range of river stage/flow and interior runoff scenarios which could not only impact the Delta Tunnel, but also Pearson District [Reclamation District No. 551], Sacramento County, California Department of Transportation, Hood and Courtland and the State Plan of Flood Control Sacramento River Flood	Please refer to response to comment 529-8 regarding the consideration of impacts on emergency services. During conceptual engineering design, all project alternatives were subject to an assessment of flood risks and a levee vulnerability assessment; see the Delta Conveyance Design and Construction Authority Intake Flood Management technical memorandum and the Levee Vulnerability Assessment technical memorandum (Delta Conveyance Design and Construction Authority 2022a, 2022b). These documents identify potential vulnerabilities within the Delta levee systems, evaluate Delta flood risk, management measures, emergency response, and flood inundation

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	Control Project. The likelihood of any number of natural emergency events is high during a 10+ year construction period and all potential scenarios need to be evaluated and planned for with local, state agencies in advance and should be explicitly documented in the EIR. Any potential emergencies caused due to the Delta Tunnel project should also be generally described, for operational guidance and support with the State, counties and local agencies.	mapping, and provide site specific recommendations for structure flood risk mitigations to major construction locations. At the intake sites, the jurisdictional levee would be constructed before the existing levee was removed to allow intake construction, thereby not changing the existing protection level. At the reception and maintenance shaft sites, the tunnel shaft would be raised at a height greater than the flood elevation and this would occur prior to construction of the tunnel shaft opening. Due to the limited number of construction workers at the reception and maintenance shafts, no other measures were considered during construction. At the tunnel launch shaft sites, either the island levees would be improved (Bouldin and Lower Roberts islands) or a ring-levee would be constructed (Twin Cities Complex) to protect the workers and the sites. The tunnel launch shaft sites at the Southern Complex would be protected by existing levees; and the Bethany Complex would not be susceptible to major flooding. With respect to concerns about river stage/flow during construction, the only structures constructed within the river would be the intakes. The table in Chapter 7, Flood Protection, titled Water Surface Elevation Differences for the Project Alternatives at Select Locations in the Sacramento River between the American River Confluence and Sutter Slough Relative to 2022 Conditions provides modeled water surface elevation differences for each project alternative during a 100-year and 200-year flood relative to existing conditions. The figure in Chapter 7 titled Map of the Urban and Nonurban Levees Along the Sacramento River between the American River Confluence and Sutter Slough shows the geographic extent of the HEC-RAS modeling, which extends from the mouth of the American River downstream to Sutter Slough. Although construction of the north Delta intakes for Alternatives 2a and 4a, alternatives that propose construction of three intakes, would increase water surface elevations by up to 0.12 feet during the 200-year flood event, this increase would be reduced to 0.09 feet with Mitigation Measure FP-1; the surface elevation increase

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		attributable to Alternative 5 construction would be 0.08 feet. With respect to management of stormwater flows on land, the proposed project and alternatives would capture and treat all stormwater flows in plants located on the construction sites and store the water in tanks on the construction site for reuse for dust control and other construction needs. If the storage tanks are full and on-site water demands are fully met, the water would be discharged at a rate that would not increase peak flow rates in the drainage channels because the water would be discharged infrequently and after the peak storm event occurs. Please refer to the section in Chapter 3, Description of Proposed Project and Alternatives, titled Local Water Supply, Drainage, and Utilities and to Chapter 7 for more information. Please see response to comment 529-13 regarding determining capacity of and maintaining drainage and irrigation infrastructure.
529-17	Pearson District, Reclamation District No. 551, urges DWR to consider addressing detailing construction related impacts due to the significant duration of the construction project related to resource limitations for the Delta including access, trucking, and the inevitable emergency operation impacts.	Please refer to response to comment 529-8 regarding the consideration of impacts on emergency services and 529-12 regarding the consideration of impacts on trucking resources. In addition, please see Common Response 14, Transportation, regarding comments about the methodology and approach to impact analysis. Please refer to Impacts TRANS-3 and TRANS-4 in Chapter 20, Transportation, which address potential construction impacts as they relate to access, roadway improvements, and emergency access.
529-18	The current preferred alternative does not clearly define the dual conveyance levee rehabilitation and improvement to ensure longterm water supply reliability or protection of critical elements of the Delta Tunnel.	Please refer to response to comment 529-4 regarding rehabilitation of non-project levels which are not part of the proposed project, nor would meet the basic objectives for the project. Numerous other federal, state and regional flood protection entities are continuing to pursue levee improvements with or without implementation of the Delta Conveyance Project.
529-19	Pearson District [Reclamation District No. 551] could have additional significant impacts related to the tunneling operation under the district and lands related to ground	Please refer to response to comment 529-11 regarding field investigations that will inform final design and construction. Please refer to response to comment 529-5 regarding settlement and also regarding efforts in the

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	movement, impacts to buried features such as gas wells and pipelines, and ongoing construction efforts of the Delta Tunnel related to dewatering, seepage and water table impacts, construction traffic impacting access locally and regionally. The District levees do not meet FEMA 100-Year or USACE PL 84-99 active status and require investment to rehabilitate and improve the levee system.	Delta related to levee management. Please refer to response to comment 529-8 regarding the transportation analysis. Please also refer to Chapter 8, Groundwater, for the analysis of potential impacts on groundwater.
529-20	Thank you for the opportunity to provide comments on this project Pearson District [Reclamation District No. 551] welcomes any feedback or questions regarding this letter.	This information describes general concluding text. It is not a comment on the contents of the EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.
530-1	These comments on the draft environmental impact report (Draft EIR) prepared for the proposed Delta Conveyance Project ("DCP" or "Project") are submitted on behalf of City of Stockton ("City" or "Stockton"). As explained in these comments, Stockton has significant concerns that the Draft EIR does not adequately evaluate the potential for the DCP to adversely affect the City's water supply and the health of its citizens and the Delta environment.	This comment makes introductory statements and describes the contents of the comment letter noting that additional comments are being made related to concerns about water supply and water quality and resulting potential effects on the health of the residents of the City of Stockton. The comment references subject matter in the EIR. Please see responses to letter 530 contained herein (e.g., responses to comments 530-11, 530-12, 530-13, 530-14, 530-15, 530-20, and 530-21) for detailed responses regarding water quality related comments.
530-2	I. Background Stockton is located on the San Joaquin River in the southeast Sacramento-San Joaquin River Delta (Delta). With 315,000 residents, Stockton is the largest municipality wholly within the Delta. It has a large environmental justice community and higher than statewide average percentage of residents who live below the poverty line. Stockton derives a substantial percentage of its water supply from Delta surface waters. The well-being of the City, its residents, and economy is thus inextricably linked to the Delta, the quantity and quality of Delta water supplies, and the Delta ecosystem. Stockton relies on a portfolio of water supply sources and supporting infrastructure to meet existing and future demands. The City of Stockton Municipal Utilities Department (COSMUD)	This information describes the background of the organization or individual commenter. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.

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	provides potable drinking water to a service population of more than 180,000, which is approximately 55 percent of the municipal and industrial potable water demand of the Stockton Metropolitan Area. Stockton's water supply includes surface water rights to divert up to 30 million gallons per day (MGD) of water from the San Joaquin River, contracted surface water supplies, and groundwater. Currently, the COSMUD obtains approximately 38 percent of its water supply from the San Joaquin River, but the volume of water extracted from the San Joaquin River is projected to increase over time. By 2035, water from the river intake will constitute about 58 percent of the COSMUD's supply at an operational capacity of 90 MGD. Stockton's most significant source of water is its Delta Water Supply Project (DWSP), which derives its source water via diversion works from the Delta at the southwest tip of Empire Tract. The Delta Water Treatment Plant (DWTP) treats water diverted under the City's San Joaquin River water right, as well as purchased Mokelumne River water. Stockton's acquisition of its own surface water rights and construction of its associated water treatment plant was key in reducing the City's reliance on groundwater through an active conjunctive use program. In addition to providing potable drinking water, Stockton owns, operates, and maintains wastewater collection and treatment facilities that serve the entire Stockton Metropolitan Area. The City discharges treated wastewater to the San Joaquin River from its Regional Wastewater Control Facility (RWCF) under a National Pollutant Discharge Elimination System (NPDES) permit issued by the Central Valley Regional Water Quality Control Board. Wastewater discharge to the San Joaquin River following tertiary treatment is an essential service to Stockton's residential, commercial, and industrial sectors.	

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530-3	The location and operation of the Project intakes presents the potential for significant adverse impacts to Stockton's water supply and operation of its RWCF treated wastewater discharge, through impacts to water quality, to the City's [Stockton] ability to divert water at its intake, as well as public health impacts. Construction of the tunnels and other facilities, including truck and rail trips, could have significant adverse impacts from criteria pollutant and toxic emissions, including impacts to environmental justice communities.	Please see response to comment 530-6 regarding the Delta Conveyance Project's potential impacts on the City of Stockton's water and wastewater utility operations. Please see Chapter 23, Air Quality and Greenhouse Gases, for a description of the impacts from criteria pollutants and toxic emissions. As discussed in Chapter 23, while the impacts associated with the production of criteria air pollutants in Stockton, which is within the San Joaquin Valley Air Pollution Control District (Impact AQ-2) would be significant, the impact would be reduced to less than significant with the implementation of Mitigation Measure AQ-2. Additionally, Environmental Commitments EC-7, EC-8, and EC-13 would be implemented to reduce construction equipment and vehicle exhaust emissions generated. Please see Chapter 29, Environmental Justice, for a description of the potential effects of the Delta Conveyance Project on environmental justice communities.
530-4	II. Purpose and Project Objectives (Chapter 2) A. Inappropriately Narrow Scope of Project Objectives The Purpose and Project Objectives (Draft EIR, ch. 2) are too narrowly drawn, focusing only on benefits to State Water Project (SWP) operations and south of Delta water deliveries. The objectives reference providing "operational flexibility to improve aquatic conditions in the Delta," but the Project does not commit to improving aquatic conditions, nor does it include any objectives that would protect water supplies for water users in and upstream of the Delta.	Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the discretion CEQA affords lead agencies in defining the project purpose and objectives and the scope of the purpose and objectives statements for the purposes of CEQA which are not inappropriately narrow. Please refer to Common Response 3, Alternatives Development and Description, regarding the alternatives screening process (see also Appendix 3A, Identification of Water Conveyance Alternatives), and development of the reasonable range of feasible alternatives evaluated in the EIR, as well as information regarding comment-suggested alternatives that are not evaluated in the Draft EIR. Common Response 3 also discusses operation of the Delta Conveyance project which does not include changes to State Water Project or Central Valley Project operations upstream of the proposed north Delta intakes.

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530-5	Framing Project objectives so narrowly discourages consideration of alternatives to the Project that would protect and restore the Delta environment and thus is inconsistent with the California Environmental Quality Act (CEQA) as well as with the Delta Reform Act's (Water Code, section 85000 et seq.) coequal goals of improving water supply reliability and protecting, restoring, and enhancing the Delta ecosystem, as well as the Legislature's directive that "coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place." (Water Code section 85054.) The DCP addresses only an in-Delta solution to protect the reliability of water deliveries south of the Delta and, based on the unduly narrow objectives, the Draft EIR fails to consider alternatives that would attain the stated objectives while also protecting in-Delta uses. The Project objectives should be expanded to include prevention of water quality degradation in the Delta and avoidance of adverse impacts to Delta water supplies, consistent with the Delta Plan. [Footnote 1: Available at https://deltacouncil.ca.gov/delta-plan/.] Broadening Project objectives in this way would necessarily expand the range of potentially feasible alternatives, and thus ensure that Department of Water Resources (DWR) gives adequate consideration to means of avoiding or substantially lessening significant impacts associated with its reliability goals.	Although a lead agency may not give a project's purpose an artificially narrow definition, a lead agency may structure its EIR alternative analysis around a reasonable definition of underlying purpose and need not study alternatives that cannot achieve that basic goal as explained further in Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues. Please also see Common Response 3, Alternatives Development and Description, for information on development of the reasonable range of feasible alternatives evaluated in the EIR, which meet the basic project objectives. Please also see Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, regarding the relationship of the project to the Delta Reform Act and a discussion of the co-equal goals. Potentially significant environmental impacts associated with construction and operation of the alternatives on water quality, including potential degradation, are evaluated in Chapter 9, Water Quality. Chapter 6, Water Supply, includes information on potential changes to SWP and CVP water supply that could result from the Delta Conveyance Project. The EIR fully evaluates potentially significant environmental impacts from construction and operation of the alternatives on multiple resources in Chapters 5 through 32. As summarized in the Executive Summary of the EIR, most of the potentially significant environmental impacts on resources within the Delta such as fisheries, wildlife, and vegetation can be reduced to less than significant levels after the implementation of feasible mitigation measures.
530-6	B. Inconsistency with Delta Plan Policies The Delta Plan contains policies, recommendations, and performance measures designed to protect the Delta environment and existing Delta land uses from the impacts of major new projects, including the proposed Project. The Delta Reform Act requires that projects within the boundaries of the	The project would not affect water quality due to increases in chloride and cyanobacteria, bromide or other constituents or result in any other impacts that would limit the City's ability to use its drinking water intake or impact the City's wastewater discharge operations, as described in responses to comments 530-12, 530-13, 530-14, 530-15, 530-17, 530-20, and 530-26. Please see Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, regarding the relationship of the project to the

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	Delta that will significantly impact the achievement of the statutorily established coequal goals for protection of the Delta and provision of a reliable water supply demonstrate consistency with the coequal goals and each of the regulatory polices contained in the Delta Plan before the Project may be implemented. (Water Code, sections 85054, 85057.5, 85225; Cal. Code Regs., tit. 23, section 5002(b)(1).) The Delta Plan also contains priority recommendations that identify actions "essential to achieving the coequal goals" (Delta Plan, p. ES-17) and performance measures related to meeting the Delta Plan goals and policies. (Delta Plan, appen. E: Performance Measures for the Delta Plan, as amended Apr. 26, 2018.) The Draft EIR does not evaluate the Project's consistency with all relevant Delta Plan policies, recommendations, and performance measures and so fails to adequately address potential negative impacts to existing in-Delta users, specifically the City's [Stockton] water and wastewater utility operations. Project impacts to the City's water supply are inconsistent with the coequal goals themselves and, specifically, Delta Plan policy DP P2, which states that water management facilities "must be sited to avoid or reduce conflicts with existing uses . . . ." (Cal. Code Regs., tit. 23, section 5011, emphasis added.) The City's DWSP and RWCF are existing uses in the Delta. As described in these comments, the location of Project intakes may limit the City's ability to use its drinking water intake, due to significant increases in chloride and cyanobacteria, and possibly bromide and other constituents, and also may impact the City's wastewater discharge operations. Any impacts to these uses, including to the availability or reliability of Stockton's water supply, must be acknowledged and avoided or fully mitigated.	Delta Reform Act and a discussion of the coequal goals. Please also see Common Response 8 for information on the self-certification process whereby state and local agencies can demonstrate consistency with relevant Delta Plan policies. For more information regarding the coequal goals and consistency with the Delta Plan, please also see Appendix 3E, Delta Reform Act Considerations. Chapter 21, Public Services and Utilities, describes how construction and operations and maintenance activities could affect water and wastewater service providers and infrastructure.

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530-7	C. Omission of Necessary Levee Improvements The Project objectives also should reflect the need for continued use of the existing south Delta pumps, and the critical importance of maintaining existing through-Delta conveyance. Therefore, assessment of "approaches to modernize water conveyance through the [Delta]" must not be limited to the single-tunnel project, but also prioritize rehabilitation of existing Delta levees. (Draft EIR, p. 3-1.) The seismic threat cited by tunnel proponents as justifying a new north Delta conveyance presents an even more significant threat to the water supply, health, and safety of Delta residents, as well as proposed tunnel infrastructure located throughout the Delta. Reframing Project objectives to include objectives and actions related to Delta levee investment and improvement would be consistent with the stated reliability objectives as well as with the Legislature's directive that the "coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place." (Water Code section 85054.) Climate change models for the 2017 Central Valley Flood Protection Plan Update project a 35 percent to 50 percent increase in 200-year flood flows in the San Joaquin River tributaries by 2041-2070. The greatest risk to people and property in the San Joaquin River basin is in the Stockton Metropolitan Area. The U.S. Army Corps of Engineers has estimated that there are 235,000 people and $28.7 billion of damageable property in the 500-year floodplain in the Stockton area, which will largely become the 200-year flood plain with climate change. Estimates are that the Stockton area	Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the project's purpose and objectives and the scope of the purpose and objectives. Please see Appendix 3E, Delta Reform Act Considerations, for a discussion of the Delta Reform Act's coequal goals and how the practical effect of many of the proposed mitigation measures in the EIR and environmental commitments in the EIR would protect Delta values. Please also see Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, for information on the relationship of the project to the Delta Protection Act and the Delta Reform Act and Delta Plan consistency. Please refer to the discussion in Common Response 8 regarding levee management for information on the programs DWR oversees that provide to levee maintaining agencies for their use to protect and improve critical levees in many areas of the Delta and how DWR regularly works with local governments to maintain and improve the levees that protect the Delta. The programs and funding opportunities are independent of the Delta Conveyance Project and will continue as they have, regardless of the approval of Delta Conveyance Project, as described in Common Response 8. The suggestion that approval of the project would reduce funding available for levee maintenance is speculative.

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	levees need $1.3 billion in upgrades simply to have adequate protection against current 200-year flood levels. Delta levee investment and rehabilitation in the Project description would serve Project objectives as well as the Delta Reform Act's mandate to improve water supply reliability for the state (not just Delta exporters). Including Delta levee rehabilitation as part of the Project also would demonstrate that assertions by the Newsom Administration and Delta Conveyance Design and Construction Authority that Project proponents seek to include multi-benefit projects as part of the Project are not mere lip service to Delta interests. If the Project purpose and objectives are not revised to include significant rehabilitation of Delta levees, the Draft EIR must be revised to evaluate and disclose the potential for the Project to lead to reduced investment in Delta levee maintenance (through redirection of funds that would otherwise have been spent in support of the SWP and Central Valley Project (CVP) through-Delta conveyance), and the likely environmental consequences of this reasonably foreseeable Project effect in terms of increased risk to human health and property in the Delta.	
530-8	III. Project Description (Chapter 3) The Project description must provide sufficient and complete information about the ways in which DWR may operate the Project to enable an accurate and meaningful evaluation of Project impacts. (Cal. Code Regs., tit. 14, § 15124; Buena Vista Water Storage Dist. V. Kern Water Bank Authority (2022) 76 Cal.App.5th 576, 588 ["Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental cost, consider mitigation measures, assess the advantage of	The information provided in Chapter 3, Description of the Proposed Project and Alternatives, regarding the operation of the Delta Conveyance Project intakes (e.g., including integration with CVP, consistent with the COA) is an accurate description of the criteria under which the Delta Conveyance Project will operate. As discussed in Common Response 3, Alternatives Development and Description, the purpose of the Delta Conveyance Project is not to change the existing operation of upstream reservoirs. The hydrologic modeling reflects the project criteria and potential changes in hydrologic conditions including river flows, reservoir storage, and water deliveries. Those

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	terminating the proposal . . . And weigh other alternatives in the balance."].) The description of the Project is incomplete without identifying the full range of potential operations and assessing the likely impacts of those operations. (Ibid.) The EIR must specify the quantity and timing of water to be diverted at the north Delta diversion, and how the SWP and CVP will be operated with the Project in place, given the coordinated operations of those projects. Each of these operational aspects are essential to understand and draw meaningful conclusions about the Project's effects on the Delta environment and the City's Delta water supply.	changes are summarized in Chapter 5, Surface Water, and Chapter 6, Water Supply, and provide information that was used to support the environmental analyses in other EIR chapters and allow an accurate comparison of impacts among alternatives.
530-9	There is insufficient information in the Draft EIR to understand the long-term effects on surface water and the City's [Stockton] water supply of prolonged use of north Delta diversion (NDD) facilities. Alternative 5 does not describe how the proposed Project would shift diversions from south Delta intakes to the NDD in real time operations. This is a significant omission in the Project description, because the DCP and NDD increase total SWP/CVP diversions from the Delta, which results in corresponding decreases in Delta outflow, increases in Delta salinity and residence time, affecting the formation of harmful cyanobacteria and exacerbating existing public health risks to Delta residents. An understanding of relevant criteria in the use of NDD facilities is necessary to understand when and if increased salt in the Delta will result in increases in upstream releases necessary to meet State Water Resources Control Board Decision 1641.	Please refer to Chapter 3, Description of the Proposed Project and Alternatives, section titled Integration of North Delta Intakes with South Delta Facilities for a description of regular project operations and shifts from south Delta intakes to the proposed north Delta intakes under limited circumstances. Prolonged use of the north Delta diversion facilities is neither reasonably foreseeable nor necessary to meet project objectives. Please refer to Common Response 3, Alternatives Development and Description, for a description of conditions under which diversions would be shifted from south Delta SWP facilities to the proposed north Delta diversion facilities. The results of the impact analyses presented in Chapter 9, Water Quality, do not support the commenter's assertion that the project would result in substantial increases in Delta salinity and residence time nor in degradation of Delta water quality including increases in the frequency or magnitude of CHABs. Please refer to Chapter 9, Water Quality, which demonstrates that the proposed Delta Conveyance Project operations would result in less-than-significant impacts on Delta salinity and CHAB formation at the locations analyzed for the EIR. Based on these impact assessment determinations, adverse changes in the vicinity of City of Stockton diversion facilities is not expected.

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530-10	This [The long-term effects on surface water and [City of] Stockton's water supply of prolonged use of the north Delta diversion (NDD) facilities] is a particular concern for Stockton in maintaining the quality of its water supply. Depending on the timing and volume of a NDD, the Project may lead to a need for increased surface water treatment or limit diversions altogether at certain times, and compromise Stockton's ability to recycle water or recharge groundwater. The Draft EIR must be revised adequately to identify, analyze, and avoid or mitigate the Project's potential impact on the City's San Joaquin River water supply diverted at the DWSP [Delta Water Supply Project]. In evaluating impacts to Stockton, the Draft EIR must be revised to describe operational impacts to and mitigation for the unique circumstances of the City's diversion location and treatment plant capabilities, and to meaningfully evaluate alternatives to the Project that would avoid the impacts to Delta water quality.	As described in Chapter 2, Purpose and Project Objectives, the basic objective of the Delta Conveyance Project is to restore and protect the reliability of SWP water deliveries. The Delta Conveyance Project helps meet this by constructing and operating new water supply facilities within the Delta. The Delta Conveyance Project is not proposing changes to operations or amount of storage provided by upstream facilities and also does not preclude future changes to the state's water supply either through modifications of the operation of existing facilities or increasing water storage. As further discussed in responses to comments 530-11 through 530-15, Chapter 9, Water Quality, provides a thorough analysis of the water quality-related impacts on the municipal and domestic water supply beneficial use in the Delta, including at the City of Stockton's drinking water diversion location on the San Joaquin River.
530-11	IV. Water Quality Impacts As described below, the Draft EIR is legally inadequate in its analysis and determinations regarding the proposed project's significant environmental impacts related to water quality. (Draft EIR, ch. 9.) In addition to the comments herein, Stockton refers DWR to the Technical Memorandum prepared by Exponent, attached hereto as Exhibit 1 [Attachment 1]. The Draft EIR must be revised and recirculated to correct the identified deficiencies.	The EIR has been prepared in compliance with CEQA and its requirements and adequately discloses and analyzes potential impacts on water quality. Please see Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding significant environmental impacts and recirculation. As stated in Chapter 9, Water Quality, all impacts on water quality were determined, based on substantial evidence, to be less than significant or less than significant with mitigation incorporated (Impact WQ-6).
530-12	A. Chloride Levels Stockton operates a drinking water intake located in the San Joaquin River at Empire Tract. The City diverts water from its intake at Empire Tract when water quality is sufficient for use	Chapter 9, Water Quality, Impact WQ-4 (chloride) provides a complete assessment of impacts on chloride levels in the Delta, including at the City of Stockton's drinking water intake at Empire Tract. Neither the U.S. EPA nor the State of California have promulgated/adopted a chloride criterion/objective of 110 mg/L for the protection of the municipal and

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	as drinking water. The City does not divert water when water quality is not sufficient – i.e., when chloride levels exceed 110 mg/L. Thus, increases in salinity at the City's intake have the potential to reduce the amount of water the City may divert from the Delta. In expert testimony presented in the water right change petition proceeding for the predecessor project to the DCP, California WaterFix, Stockton showed how operation of that project, which had a diversion capability of 9,000 cubic feet per second (cfs) would result in the City losing access to its Delta water supply for up to 60 days a year, depending on the water year type, due to significant chloride increases at Stockton's intake. The DCP may divert up to 7,500 cfs of water, depending on which alternative is approved. Under any alternative, impacts to the City's water supply would be significant, unless operational criteria are imposed that clearly prevent this substantial degradation of water quality.	domestic supply beneficial use in the San Joaquin River at Empire Tract or elsewhere in the Delta. Impact WQ-4 impact determinations are based on whether project operations would cause federal criteria or state objectives for chloride to be exceeded more often and the amount of chloride degradation that would occur. The assessment concluded that project operations would not cause exceedances of chloride criteria/objectives more often than under existing conditions or cause substantial degradation of chloride to levels that would put beneficial uses at risk of adverse effects. Impact WQ-4 (chloride) was determined to be less than significant.
530-13	DWR fails to identify specific water quality impacts for Stockton because the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta WQCP) objectives do not identify the City as a compliance point. In describing chloride, the Draft EIR states: The Bay-Delta WQCP established two water quality objectives for chloride for the Delta (Appendix 9F, Chloride, Section 9F 4, Applicable Water Quality Criteria/Objectives). The chloride objectives are for the protection of municipal and industrial beneficial uses. One of the chloride objectives is 150 mg/L for a certain number of days per year, depending on water year type, and is to be met at either Contra Costa Pumping Plant #1 or City of Antioch's drinking water intake on the San Joaquin River. The second chloride objective is 250 mg/L and applies at Contra Costa Pumping Plant #1, Banks and Jones Pumping	Please refer to response to comment 530-12 regarding the complete assessment of impacts on chloride levels at the City of Stockton's drinking water intake at Empire Tract. As noted in that response, neither the U.S. EPA nor the State of California have promulgated/adopted a chloride criterion/objective of 110 mg/L for the protection of the municipal and domestic supply beneficial use in the San Joaquin River at Empire Tract or elsewhere in the Delta. Impact WQ-4 (chloride) concludes that there would not be increased frequency of river concentrations exceeding the applicable objective of 250 mg/L, which is based on the drinking water MCL, there would not be degradation that would result in substantially increased risk for adverse effects on beneficial uses, and impacts would be less than significant.

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	Plants, and Barker Slough at the North Bay Aqueduct. These locations are source water intakes within the Delta for drinking water supplies . . . . The City of Stockton also has a drinking water supply intake on the San Joaquin River at Empire Tract. The Bay-Delta WQCP objectives do not specifically identify this as a compliance location. (Draft EIR, pp. 9-74 – 9-75.) Even if the objectives for other locations applied at Stockton, they would be insufficient to ensure the DCP does not have a substantial adverse impact to City's water supply because they do not ensure the project will not significantly increase chloride levels above the City's operating threshold. The Draft EIR offers no meaningful analysis or mitigation for project impacts on the operation of Stockton's direct diversion intake and, instead, effectively suggests Stockton would need to find another water source or provide a higher level of treatment: Central Valley RWQCB WQCP includes secondary MCLs as water quality objectives for waters designated for municipal and domestic supply use. The chloride secondary MCL consists of a recommended level of 250 mg/L for consumer acceptance, an upper level of 500 mg/L if it is neither reasonable nor feasible to provide more suitable waters, and a short-term level of 600 mg/L for existing community water systems on a temporary basis pending construction of treatment facilities or development of acceptable new water sources (Appendix 9F, Section 9F.4). (Draft EIR, p. 9-75.) The Draft EIR must consider the project's potential to substantially degrade water quality for municipal uses in Stockton, regardless of whether any established	

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	standards would be exceeded. Known or likely impacts to Stockton's water supply must be disclosed and mitigated with equal or higher drinking water protections than DWR has afforded to other Delta water users, including Contra Costa and Antioch.	
530-14	Not only is the Draft EIR's water quality impact analysis deficient for failure to consider the unique impacts that the DCP will have on Stockton, based on its location and source water criteria, but the analysis that is provided does not provide meaningful information regarding changes to water quality. As explained in the comments of Susan Paulsen, P.E., Ph.D., of Exponent, included with this letter, throughout the Draft EIR, DWR discusses water quality changes resulting from the proposed project as long-term averages aggregated statistically. For example, electrical conductivity (EC) data from the Delta Simulation Model II (DSM2) were first processed to compute monthly average EC values, from which statistical distributions were then calculated for the full 95-year simulation period. (See Draft EIR, appen. 9G.) As Dr. Paulsen notes, based on her expertise, although the long-term average salinity data presented in the Draft EIR indicate that many locations can expect increases in salinity, particularly during the summer fall months, the information in the Draft EIR does not provide the level of detail required to adequately assess project impacts.	Chapter 9, Water Quality, provides a thorough analysis of the water quality-related impacts on the municipal and domestic water supply beneficial use in the Delta, including at the City of Stockton's drinking water diversion location on the San Joaquin River. All water quality impact determinations in Chapter 9 are based on substantial evidence, including modeled changes in boron, bromide, chloride, organic carbon, mercury, and selenium concentrations at the City's drinking water intake at Empire Tract. Please see Common Response 10, Surface Water Quality and Groundwater Resources, regarding the presentation of data and use of monthly average modeling results in the water quality impact analysis. As noted in that Common Response, sufficient level of detail is provided, and the use of monthly averages depends on the constituent and type of analysis conducted.
530-15	Like Stockton, most entities within the Delta—including municipal water purveyors, agricultural water users, and publicly-owned treatment works—operate facilities and manage treatment operations on short timeframes (e.g., hourly). Model results that are processed to show long-term averages, and then provided in summary statistical format, do not provide the information needed to assess the impacts of	Please see Common Response 10, Surface Water Quality and Groundwater Resources, regarding the presentation of data and use of monthly average modeling results in the water quality impact analysis. The purpose of Chapter 9, Water Quality, is to assess environmental impacts resulting from project operations-caused changes in surface water quality, relative to water quality for existing conditions, based on the thresholds of significance. The use of monthly averaged modeling output was

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	the proposed Project on their operations. The City measures salinity (EC) at its intake and operates its intake on a real-time basis. Because the Draft EIR has presented water quality information in the format of long-term averages presented in summary statistical format, the Draft EIR does not provide the information the City needs to evaluate the potential impacts of the proposed project on its drinking water operations.	appropriate relative to modeling capabilities and provided sufficient (i.e., n=93) concentration values for each month from which to assess the degree and direction of water quality changes due to project operations. As disclosed in Chapter 9, the impact on water quality at the City's intake location due to operations would be less than significant because (1) the project would not cause an increased frequency of exceedance of federal water quality criteria or state water quality objectives at the time-steps they are applied, which include averaging concentrations for chloride, and (2) the project would not cause degradation of water quality, including chloride, that would adversely affect the beneficial uses, including drinking water uses. Please see Common Response 10 regarding water quality analysis thresholds of significance.
530-16	Furthermore, the Exponent report notes: DWR has described project operations in Appendix 5A, Section B of the Draft EIR. Project operations were simulated using the CalSim3 and DSM2 models as described in the EIR. In a section called "Relaxation of Regulatory Requirements," DWR notes that, "CalSim 3 makes storage release decisions and routes water through the stream network, based on a set of pre-defined rules that represent existing or future assumed regulations and operations criteria. These pre-defined rules do not include temporary relaxation of non-discretionary regulatory requirements such as occurred in 2014 and 2015 as a result of Temporary Urgent Change Petitions submitted to the State Water Board." (emphasis added). DWR further notes that "Frequency of extreme conditions is expected to increase in the future under the combined effects of climate change and sea level rise."	Please see Common Response 9, Hydrologic Modeling and Approach, regarding best available tools, modeled representation of future conditions and climate change and consideration of drought and temporary urgency change petitions (TUCP). Please also see Common Response 3, Alternatives Development and Description, regarding the TUCP process. As described in sections Relaxation of Regulatory Requirements, Monthly Timestep, and Extreme Conditions of Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, CalSim 3 does not represent real time policy and operational decisions during extreme circumstances that deviate from standard operating polices.

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	Thus, DWR's modeling and project evaluations do not incorporate the changed operations that have occurred pursuant to the Temporary Urgent Change Petitions (TUCPs) issued in recent years during critically dry conditions. In addition to the TUCPs issued in the critically dry years of 2014 and 2015, TUCPs were also issued in 2016, 2021 and 2022. The historical simulation period of 1922-2015 includes 15 critically dry years. It is entirely foreseeable that TUCPs may be adopted and project operations may be modified during critically dry years in the future, yet DWR has not evaluated water quality conditions within the Delta under these conditions, including the potential impact of operation of the new proposed North Delta Diversion intakes. Because DWR has not simulated the changed operations that may result during critically dry conditions, DWR's modeling evaluation and discussion of impacts within the Draft EIR is incomplete. Further, DWR's model simulations of future conditions indicate that the salinity of the Delta will increase over time as a result of sea level rise. DWR has not disclosed if it anticipates requiring TUCPs more frequently under these conditions, or the water quality impacts of operating under TUCPs in the future. (Exhibit 1, Exponent Comments, pp. 8-9.)	
530-17	Changes in Delta water quality also have the potential to impact the requirements of Stockton's wastewater discharge permit and its ability to maintain compliance with permit conditions as well. If water quality in the Delta is degraded by the operation of the proposed project (or the alternatives to the proposed project), this may result in a determination that	As demonstrated in the impact analysis of multiple water quality constituents in Chapter 9, Water Quality (Impact WQ-1 through WQ-14), in which water quality degradation was evaluated, water quality impacts on the San Joaquin River downstream of the city's discharge would be less than significant. Hence assertions regarding the potential for water quality changes to result in more stringent wastewater discharge permit

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	Stockton's discharges of treated wastewater have the reasonable potential to contribute to exceedances of water quality standards and the subsequent implementation of more stringent permit requirements.	requirements for the city are not supported by the analysis.
530-18	If the project results in a loss of an adequate surface water supply of suitable quality, Stockton may be forced to rely more heavily on groundwater for municipal and domestic water supply. As a member of the East San Joaquin Groundwater Authority, the City participated in the development of a groundwater sustainability plan (GSP) to ensure groundwater sustainability within the critically over drafted Eastern San Joaquin Groundwater Subbasin. Groundwater in areas near Stockton has elevated levels of total dissolved solids (TDS), limiting its suitability for municipal and industrial use, and presenting challenges to the City's wastewater treatment operation, which aims to limit salt discharges to the Delta. A key reason the City pursued contracted surface supplies and the DWSP was to protect the groundwater basin from further overdraft and reduce the amount of TDS that eventually are discharged to the Delta. Increased groundwater reliance is not a sustainable option for the City, and thus, it is of critical importance that the proposed Project evaluate and protect the quality and availability of the City's Delta water supplies and other source waters.	Please see responses to comments 530-12, 530-13, and 530-15 regarding effects of the project alternatives on water quality at the City's intake location. Based on the impact determinations in Chapter 9, Water Quality, the project would not cause the loss of an adequate surface water supply of suitable quality water for the City and therefore would not result in the claims asserted by the comment regarding the groundwater subbasin.
530-19	To address potential impacts to the City's [Stockton] water supply, DWR should use DSM2 model results to compute the total number of hours that the salinity will exceed the City's operational threshold of 110 mg/L chloride. Results for both the No Project and the full range of project alternatives, and for both existing conditions and future scenarios, should be presented in tabular and/or graphical format so that the City and DCP decision-makers can assess the impacts of the	Please see Common Response 10, Surface Water Quality and Groundwater Resources, regarding the presentation of data and use of monthly average modeling results in the water quality impact analysis. Furthermore, as noted in response to comment 530-13, the relevant water quality objective for chloride for protection of municipal and domestic supply beneficial uses at this location is the secondary maximum contaminant level (MCL) of 250 mg/L.

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	proposed project on the operations of the City's drinking water intake and the City's water supply. For additional discussion and recommendations, see the attached report prepared by Exponent.	
530-20	B. Algal Blooms The proposed Project has the potential to modify Delta hydrodynamics, making Delta waters warmer and more stagnant, increasing the risk of harmful algal blooms (HABs). Depending on the timing and volume of a NDD [north Delta diversion], the project may increase in the frequency or duration of HABs, leading to reductions in the amount of water the City may divert from the Delta, increases in necessary surface water treatment by the City, and increased public health risk to Stockton's residents who recreate or fish in the Delta. Toxic algal blooms and cyanotoxins, such as microcystis, are a growing public health threat to Stockton residents that will be exacerbated by climate change and any new Delta conveyance that diverts water from the Sacramento River in the northern Delta. A key way that the project may have a significant impact associated with HABs is by increasing residence time in the Delta. The Draft EIR correctly notes that an increase in residence time may contribute to an increased likelihood of algal blooms. However, the impact analysis is flawed due to errors in estimating residence time, in addition to reliance on an irrelevant analysis of channel velocity as an indicator of the probability of harmful algal blooms, as explained by Exponent. For a detailed description of the errors in the Draft EIR analysis of HABs, see the attached report prepared by Exponent, which	The comment shares concerns about the residence time modeling approach supporting the CHABs analysis in Chapter 9, Water Quality, but these concerns are not supported by the current scientific understanding of cyanobacteria growth and the formation of CHABs in the Delta. Please see Common Response 10, Surface Water Quality and Groundwater Resources, regarding the appropriateness of the residence time modeling and use of modeled channel velocity to support the CHABs analysis in Impact WQ-14. Please see Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding comment claims about recirculation. Consideration of the comments prepared by Exponent as attachments to this comment letter commence at response to comment 530-65 below.

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	explains the Draft EIR's flawed attempt to measure residence time by including in its analysis the use of Delta sub-regions, creating artificial and inaccurate measurements. Because the Draft EIR analysis is based on irrelevant information, the Draft EIR's impact determinations that rely on that information are not reliable or suitable for informed decision-making. The Draft EIR impact analysis must be revised to reconsider the project's potential to increase harmful algal blooms in light of relevant information and recirculated for public review. Also, the project's operations plan must recognize the threat posed by HABs, and consider, account for, and avoid adverse impacts to Delta hydrodynamics, including residence time, so as not to increase the frequency or duration of cyanotoxins or HABs.	
530-21	C. Bromide Concentrations The City [Stockton] is concerned about the potential for increasing bromide concentrations at its drinking water intake, as increased bromide concentrations correspond to higher levels of disinfection byproducts. The Draft EIR estimates bromide concentrations for San Joaquin River inflow and San Francisco Bay water based on regression equations that ultimately convert chloride concentrations to bromide concentrations using a linear conversion equation. Stockton has analyzed samples from its drinking water intake for chloride and bromine and found that the ratio between bromide and chlorine is not fixed. The use of a linear equation to estimate bromide concentrations based on chlorine is not appropriate based on Stockton's survey data and requires additional review. Stockton requests additional conversation with DWR regarding how to best evaluate the potential impacts of the project on bromide concentrations at the City's intake.	This comment is a summary of the related detailed comment 530-79. As explained in response to comment 530-79, the methodology used in the EIR for calculating bromide concentrations at the City's intake assessment location was appropriate and suitable for making Chapter 9, Water Quality, impact determinations because it accounts for the variability in bromide concentrations over a long time.

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530-22	D. Climate Change Stockton will be impacted by climate change, including through sea level rise (SLR), which will increase salinity within the Delta, potentially including at the City's drinking water intake. Water quality changes due to SLR in turn are expected to impact the NPDES permit requirements applicable to the City's wastewater treatment discharges. In addition to the other deficiencies noted in these comments and the Exponent report, the Draft EIR does not use best available science, or substantial evidence, in assessing DCP impacts of significant concern to Stockton because it relies on a future hydrologic baseline developed using an extreme assumed SLR, rather than a reasonably foreseeable level. NPDES permits should be issued every five years. For planning purposes, Stockton and other NPDES permit holders need information relevant to the five-year permit life. It would be impossible to plan for these if the scenarios evaluated are so extreme that permit holders would need to skip forward 20 years in a shorter period of time for planning purposes. DWR should evaluate the impacts of the proposed Project for a reasonably foreseeable change in sea level, rather than only an extreme scenario that is so unlikely that its probability is not quantified. (Cal. Code Regs., tit. 14, § 15064.) As discussed in the attached report by Exponent, DWR elected to simulate hydrodynamics and water quality within the Delta based on a model scenario that assumed 1.8 feet of SLR by the year 2040. The probability of 1.8 feet of SLR in 2040 is so small that it is unquantified. As noted by Exponent, lower levels of SLR by 2040 are much more likely. There is a 66 percent likelihood of 0.5-0.8 feet of sea level rise in 2040 and a 0.5 percent	Please see Common Response 9, Hydrologic Modeling and Approach, regarding best available tools, modeled representation of future conditions and climate change, modeled representation of CEQA baseline existing condition, climate change assumptions as input into hydrologic model. Regarding the comment on best available science, Appendix 5A, Modeling Technical Appendix, Section A, Modeling Overview, provides a comprehensive discussion of the modeling framework determined to be the best available tools to support the development of the EIR. Regarding the comment's concern that sea level rise will impact wastewater treatment plant NPDES permit requirements, Appendix 9L, Water Quality 2040 Analysis, presents analysis of effects of the alternatives with sea level rise. Based on the modeling results presented in the appendix, impact conclusions for water quality conditions in the Delta under the 2040 scenario do not differ from the impact conclusions in Chapter 9, Water Quality, which determined that impacts on Delta water quality from project operations would be less than significant. The EIR evaluates (Appendix 30A, CalSim 3 Results Sensitivity to 2040 Climate Change and Sea Level Projections) Delta Conveyance Project incremental impacts under both 1.8 ft sea level rise and 0.5 ft sea level rise projections using CalSim 3. Given the similarities in the CalSim 3 results for both the 1.8-ft and 0.5-ft sea level rise scenarios, it was determined that the DSM2 simulation of 0.5-ft was not required. Given the similarities in the incremental changes between the 1.8-ft and 0.5-ft sea level rise scenarios, the EIR concludes that the incremental changes in Delta water quality will be similar to the detailed Delta water quality modeling and impacts described in Chapter 9.

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	probability of 1.3 feet of sea level rise in 2040, which represent reasonably foreseeable conditions. In choosing to evaluate DCP effects using a model scenario with 1.8 feet of SLR, DWR chose an extremely unlikely scenario that generated unexplained results and that may mask the likely impacts of the proposed Project. DWR did not simulate Delta water quality conditions for lower (reasonably foreseeable) values of SLR. DWR used CalSim 3 to simulate 0.5 feet of SLR, and it appears that DWR has the input data needed to perform DSM2 simulations for this condition but elected not to do so. Simulating both a no-project and project alternative water quality conditions with the reasonably foreseeable 0.5 feet of SLR would allow the City and decision-makers to evaluate the impacts of the proposed Project under reasonably foreseeable conditions. [Footnote 2: An accurate representation of future baseline conditions also is important to decision-makers, including south of Delta stakeholders, in evaluating both impacts under CEQA and the relative benefit of the proposed Project, in relation to its staggering cost, as evidenced in comments on the Draft EIR by the Los Angeles County Sanitation Districts (LA County San). Troubled by the projected modest improvements to salinity in export deliveries reported in the Draft EIR, LA County San urged DWR to implement an operations strategy that would control salinity "to the maximum extent practical." (LA County San's Comment Letter on the Draft EIR, Nov. 28, 2022, p. 2.) This statement reinforces concerns of Delta residents that the Project may be operated to prioritize the NDD, with even more substantial adverse impacts to the Delta.]	
530-23	V. The DCP Violates Numerous Laws Enacted to Protect the Delta and Areas Where Water Originates Approval and implementation of the DCP as proposed would	The comment assertion that the Delta Conveyance Project would not comply with existing laws and regulations is not supported by the contents of the EIR, nor the description of the project in Chapter 3, Description of the Proposed Project and Alternatives. Please also refer to Common

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	violate numerous laws enacted to protect the Delta and other areas where water originates. Those laws include the 1959 Delta Protection Act (Water Code, section 12200 et seq.), the 1992 Delta Protection Act (Pub. Resources Code, section 29700 et seq.), the Watershed Protection Act (Water Code, section 11460 et seq.), area of origin laws (Water Code, section 1215 et seq.), and the 2009 Delta Reform Act.	Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the project's purpose and objectives, including DWR's continuing commitment to operate the State Water Project as modified to include the Delta Conveyance Project in compliance with all state and federal water quality and environmental laws. DWR has complied and would continue to comply with applicable sections of the water code while operating the SWP, with or without the approval of the Delta Conveyance Project. Please see Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, for information on the relationship of the project to the Delta Reform Act. Please also see Appendix 3E, Delta Reform Act Considerations, for a discussion of the Delta Reform Act's coequal goals and how the practical effect of many of the proposed mitigation measures in the EIR and environmental commitments in the EIR would protect Delta values.
530-24	A. 1959 Delta Protection Act The 1959 Delta Protection Act: (1) requires the SWP and CVP to provide salinity control and an adequate water supply for the Delta (Water Code, sections 12201, 12202); (2) prohibits the export of water from the Delta to which in-Delta users are entitled, and water which is necessary for salinity control and an adequate supply "to maintain and expand agriculture, industry, urban and recreational development in the Delta" (Water Code, section 12204); (3) requires maintenance of a "common source of fresh water" in the Delta to serve both in-Delta water needs and export water needs when water surplus to the in-Delta needs is available (Water Code, section 12201); and (4) requires all releases of water from storage reservoirs into the Delta for export from the Delta to be integrated to the "maximum extent possible" in order to fulfill the objectives of the Act (Water Code, section 12205).	The comment assertion that the Delta Conveyance Project would not comply with existing laws and regulations is not supported by the contents of the EIR, nor the description of the project in Chapter 3, Description of the Proposed Project and Alternatives. Chapter 3 describes the operational criteria, real-time operational decision making and adaptive management of the Delta Conveyance Project. Specific diversion requirements and bypass requirements described in Chapter 3 would require DWR to divert and export Sacramento River water only when conditions allow, and not as characterized by the comment. As described in both Chapter 3 and Common Response 3, Alternatives Development and Description, the Delta Conveyance Project's operational criteria do not include changes to State Water Project or Central Valley Project operations upstream of the proposed north Delta intakes. Common Response 3 describes how the project would be operated to shift diversions from the south Delta to the north Delta (during the summer and fall) or divert water in the north Delta during excess flow conditions while meeting regulatory requirements (during the winter and spring). The analyses provided in the EIR Chapters 5–32 evaluate the potential impacts of the proposed operations for all

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	The DCP conflicts with the 1959 Delta Protection Act in numerous respects, including the fact that the Project, by design, is intended to directly circumvent the maintenance and provision of that "common source of fresh water" (or "common pool") by constructing intakes and tunnels in the northernmost tip of the Delta that enable DWR to divert and export substantial amounts of Sacramento River fresh water directly into the tunnels that would otherwise flow into that common pool in the absence of the tunnels. Such a bypass deprives essentially the entirety of the Delta of the common salinity control and other benefits mandated by the 1959 Delta Protection Act that such fresh water would provide if it flowed into the common pool before it was exported. Furthermore, Water Code section 12204 prevents the SWP and CVP from exporting any water from the Delta that is necessary to ensure that in-Delta water users at all times have an adequate water supply of suitable quality. The DCP will in many instances result in the export of water from the Delta that directly deprives in-Delta water users of that supply and quality. Examples of such instances include the planned deprivation of such water supply and quality via the export of Sacramento River fresh water through the tunnels, instead of allowing that fresh water to flow through and freshen the Delta before it is exported from the common pool in the event of extended droughts and in the event of individual or widespread levee failures and/or SLR which draw sea water into the Delta, and impair the water quality of the common pool. In such instances, rather than allowing Sacramento River fresh water to flow into the common pool to maintain and re-freshen its water quality as mandated by the 1959 Delta Protection Act, the Project will enable and encourage the SWP	alternatives. Finally, as described in multiple impact analyses contained in Chapter 9, Water Quality (e.g., Impact WQ-5), the Delta Conveyance Project would be required to operate to meet water quality objectives and standards. Please also see response to comment 530-23 regarding the Delta Conveyance Project and the relationship with the Delta Reform Act.

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	and CVP, instead, to abandon the common pool and bypass it via the diversion of that fresh Sacramento River water through the tunnels.	
530-25	B. 1992 Delta Protection Act In the 1992 Delta Protection Act, the Legislature made numerous findings and declarations for the protection of the Delta, including the following set forth in Public Resources Code sections 29701 and 29702, respectively: The Sacramento-San Joaquin Delta is a natural resource of statewide, national, and international significance, containing irreplaceable resources, and it is the policy of the state to recognize, preserve, and protect those resources of the delta for the use and enjoyment of current and future generations. The basic goals of the state for the delta are the following: . . . (b) Protect, maintain, and, where possible, enhance and restore the overall quality of the delta environment, including, but not limited to, agriculture, wildlife habitat, and recreational activities. The Draft EIR demonstrates that the DCP will not "preserve," "protect," or "maintain," much less "enhance" the Delta's "irreplaceable resources" and the "overall quality of the delta environment" in direct contravention of the 1992 Delta Protection Act. Importantly, the Draft EIR fails to demonstrate that the DCP will not substantially impair Stockton's surface water supply or the public health of its citizens.	Please see responses to comments 530-23 and 530-24 regarding the operation of the Delta Conveyance Project, if approved, and the SWP and required compliance with applicable laws and regulations. The 1992 Delta Protection Act and amendments were renamed as the Delta Reform Act in 2009. Please see Appendix 3E, Delta Reform Act Considerations, for a discussion of the Act's coequal goals and how the practical effect of many of the proposed mitigation measures in the EIR and environmental commitments in the EIR would protect Delta values. Please also see Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, for information on the relationship of the project to the Delta Reform Act and Delta Plan consistency. The Delta Conveyance Project is not inconsistent with the Delta Protection Act or Delta Reform Act. Please also see Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, for a discussion regarding the purpose and objectives of the project. As described in Common Response 1, the objectives of the project do not include restoring the Delta ecosystem. The analysis in the EIR evaluates the potential impacts of the project and project alternatives on the existing Delta ecosystem.
530-26	C. Watershed Protection Act and Area of Origin Laws Water Code section 11460 of the Watershed Protection Act	Please see responses to comments 530-23 and 530-24 regarding the operation of the Delta Conveyance Project and the SWP and required compliance with applicable laws and regulations. Please see Common

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	provides: In the construction and operation by the department of any project under the provisions of this part a watershed or area wherein water originates, or an area immediately adjacent thereto which can conveniently be supplied with water therefrom, shall not be deprived by the department directly or indirectly of the prior right to all of the water reasonably required to adequately supply the beneficial needs of the watershed, area, or any of the inhabitants or property owners therein. Water Code section 1216 similarly provides: A protected area shall not be deprived directly or indirectly of the prior right to all the water reasonably required to adequately supply the beneficial needs of the protected area, or any of the inhabitants or property owners therein, by a water supplier exporting or intending to export water for use outside a protected area pursuant to applications to appropriate surface water filed, or groundwater appropriations initiated, after January 1, 1985, that are not subject to Section 11460. The DCP as proposed would violate these mandates in many respects, as the Draft EIR does not establish that the construction or operation of the Project will not deprive the Delta, including Stockton, or other areas of origin of their prior right to all of the water reasonably required to adequately supply their beneficial needs. A transparent analysis would reveal that there are many instances when the Project will indeed result in deprivations to the Delta area in extended	Response 3, Alternatives Development and Description, and Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, regarding water rights. As described in these two Common Responses and elsewhere throughout the EIR, DWR and the operation of the Delta Conveyance Project, if approved, will comply with existing water rights. For example, as identified in the Executive Summary section titled Chapter 6, Water Supply, the project alternatives do not include any actions that would modify water deliveries to non-SWP and non-CVP water rights holders, including in-Delta water rights holders. Therefore, operation of the project would not result in adverse impacts on surface and groundwater quality and quantity within the Delta and other areas of origin during the construction and operation because water rights of other entities would not be modified.

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	droughts, individual or widespread levee failures, and SLR. Apart from such events, the Project's projected adverse impacts to surface and groundwater quality and quantity within the Delta and other areas of origin during the construction and operation of the Project will likewise result in direct and/or indirect deprivations of those areas' prior rights to that water and to the unimpaired quality of that water in violation of Water Code section 11460 and/or 1216.	
530-27	D. The Delta Reform Act of 2009 The 2009 Delta Reform Act (DRA) provides comprehensive protections for the Delta. The DCP as proposed violates the DRA in numerous substantial respects. The DRA defines the coequal goals of Delta water management as "the two goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place." (Water Code, section 85054.) The DCP as proposed directly conflicts with the DRA's coequal goal of protecting, restoring, and enhancing the Delta ecosystem. The Project simply relocates impacts from the export of Delta water to a new area of the Delta and includes no protective, restoration, or enhancement measures in excess of mitigation required to reduce project impacts pursuant to CEQA and other laws, and, as described herein, even those measures are themselves legally and practically deficient.	Please see responses to comments 530-23, 530-24, and 530-25 regarding the Delta Reform Act, the Delta Protection Act, and the Delta Plan and the information contained in the EIR, including the purpose and objectives of the project, Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, and Appendix 3E, Delta Reform Act Considerations, that demonstrate consistency with the achievement of the coequal goals.

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530-28	The DCP also conflicts directly with the DRA's [2009 Delta Reform Act] requirement that Delta water be managed in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta. (Water Code, section 85054.) The Draft EIR does not demonstrate that Project operations would not impair currently reliable local surface and groundwater supplies and, eventually, the Delta communities that depend on those supplies, including Stockton.	Please see responses to comments 530-23 and 530-24 regarding the operation of the Delta Conveyance Project, if approved, and the SWP. Please see responses to comments 530-25 and 530-27 for information on the relationship of the project to the Delta Reform Act. Please see Common Response 3, Alternatives Development and Description, for information on how the project would be operated to shift diversions from the south Delta to the north Delta (during the summer and fall) or divert water in the north Delta during excess flow conditions while meeting regulatory requirements (during the winter and spring). Chapter 3, Description of the Proposed Project and Alternatives, describes how specific diversion requirements and bypass requirements would require DWR to divert and export Sacramento River water only when conditions allow, thereby ensuring that local surface and groundwater supplies would not be adversely affected. Given the above, the project would not impair currently reliable local surface and groundwater supplies.
530-29	The Project does not use best available science as defined by the DRA's [2009 Delta Reform Act] implementing regulations. (See Cal. Code Regs., tit. 23, section 5001(f), appen. 1A; see also Water Code, sections 85302(g), 85308.) For example, the Project's analysis uses extreme completely improbable assumptions about SLR and fails to account for the consequences of SLR (including levee overtopping) in its analysis of Project impacts. It also relies on incorrect and irrelevant analyses of residence time, thus reaching unsupported conclusions about the Project's potential to increase harmful algal blooms and affect public health and water supply security in the Delta.	Please see Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the use of best available science for analysis documented in the EIR. As described in Common Response 1, DWR used the best available scientific information to produce analyses of the effects of the project, drawing on a number of scientific and engineering disciplines that include geology, hydrology, biology, ecology, chemistry, engineering, and climatology. DWR is also using adaptive management as a part of the monitoring program to allow the best available science to be incorporated into future management decisions. Information related to adaptive management and how DWR is using and incorporating it into the Delta Conveyance Project is contained in both Common Response 1 and Common Response 3, Alternatives Development and Description, related to the Operations Adaptive Management and Monitoring Plan. Please also see Common Response 6, Climate Resilience and Adaptation, and Common Response 9, Hydrologic Modeling and Approach, regarding the appropriateness of various climate change scenario assumptions. Please see Common Response 10, Surface

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		Water Quality and Groundwater Resources, for information on the appropriate use of residence time in the methods to evaluate the potential for the Delta Conveyance Project to increase harmful algal blooms. Information is presented regarding the residence time definition and use, describing the importance of residence time (i.e., the length of time a parcel of water remains in a defined area) in assessing the ability of harmful algal blooms to form.
530-30	In the DRA [2009 Delta Reform Act], the Legislature declared state policy, in pertinent part, as follows: "The policy of the State of California is to reduce reliance on the Delta in meeting California's future water supply needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency." (Water Code, section 85021.) Despite this policy and the DRA regulations that require such reduced reliance (Cal. Code Regs., tit. 23, section 5003), the Project does precisely the opposite. The DCP directly conflicts with the policy of reduced reliance because it would export growth inducing water supplies from the Delta that increase—rather than decrease—reliance on the Delta to meet present and future water supply needs outside the Delta. In addition to increasing reliance on Delta water, the Project will also divert funding from projects that would promote reduced reliance on Delta water. The participating water contractor agencies will incur additional financial obligations through their SWP contract charges, and possibly also bond debt, to finance DCP construction. Incurring this increased public debt will impair the ability of water contractor agencies to secure funds for other water projects that improve regional water self-reliance without relying on the Delta. The Draft EIR fails to adequately disclose and analyze the full nature and extent to which the Project will directly and indirectly increase reliance upon the Delta, nor does it identify and analyze measures to	The assertion that Delta Conveyance Project water supplies are growth inducing is not consistent with the EIR. Please see responses to comments 530-23 and 530-24 regarding the operation of the Delta Conveyance Project, if approved, and the SWP and required compliance with applicable laws and regulations, including the Delta Reform Act. As described in Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, under the Delta Reform Act (Water Code § 85021), it is the obligation of each region that relies on water from the Delta watershed, not DWR, to determine the best ways to meet this goal by improving regional self-reliance. Common Response 5, Public Water Agencies Water Management Practices, provides an overview of regional and local water supply activities funded by water agencies that may participate in the Delta Conveyance Project. There is no evidence that if these agencies participate in that the Delta Conveyance Project then these funding actions would end. Common Response 7, Implementation Considerations, provides information on a benefit cost study being prepared for the Delta Conveyance Project. Finally, as described in Chapter 31, Growth Inducement, the Delta Conveyance Project would not directly or indirectly induce growth.

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	mitigate or avoid that increase in reliance upon the Delta.	
530-31	VI. Limited Utility of the Draft EIR as an Information Document An EIR is intended as an informational document "to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project[.]" (High Sierra Rural Alliance v. County of Plumas (2018) 29 Cal.App.5th 102, 105, citing Pub. Resources Code, § 21061; Cal. Code Regs., tit. 14, § 15003(b)-(e).) In addition to the methodology problems discussed above, the Draft EIR does not fulfill CEQA's mandate that it "be organized and written in a manner that will be meaningful and useful to decisionmakers and the public." [Footnote 3: Pub. Resources Code, § 21003, subd. (b).] An EIR should be written in a way that readers are not forced "to sift through obscure minutiae or appendices" to find important components of the analysis. [Footnote 4: San Joaquin Raptor Rescue Center v. County of Merced (2007) 149 Cal.App.4th 645, 659; California Oak Foundation v. City of Santa Clarita (2005) 133 Cal.App.4th 1219, 1239.] Documents that are confusing in their presentation are incomprehensible to the very people they are meant to inform. [Footnote 5: San Franciscans for Reasonable Growth v. City & County of San Francisco (1987) 193 Cal.App.3d 1544, 1548.] Analyzing and understanding the operations and potential impacts of the DCP involved locating information found in many different places throughout the Draft EIR documents. In many cases, information needed to evaluate the impacts of the proposed Project at the City's facilities were spread out	Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the length and complexity of the EIR and requests for recirculation. As discussed in Common Response 1, the EIR presents information in numerous different formats, including, text, graphs, tables, and figures, which describe impacts on resources, such that decision makers and the public can understand information. In addition, DWR made use of a logical organization and presentation across all resource chapters and used appendices for more lengthy and technical information so that resource chapters could be shorter but provide an adequate level of detail to enable evaluation, review, full disclosure of the environmental impacts, and proposed mitigation. Please also see Common Response 1 regarding the scope of analysis contained in the EIR. Please refer to Common Response 3, Alternative Development and Description, regarding the development of a reasonable range of feasible alternatives evaluated in the EIR that meet the basic project objective. Please refer to Common Response 2, Public Outreach Activities, regarding the duration of the comment period, DWR's extension of the comment period to 142 days (112 days greater than the required 30-45 days for an EIR), and DWR's timely responses to information requests, such as modeling information, during the public review period.

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	through multiple chapters and multiple appendices, and the City had to obtain the Draft EIR modeling files and engage the expertise of Exponent in order to attempt to understand the Draft EIR's determinations and potential Project impacts. Although the comment period for the Draft EIR was extended, due to these factors, the City was unable to complete its desired level of review of the impacts of the proposed Project. For the reasons explained in these comments, CEQA requires that the Draft EIR be revised and recirculated in response to comments; in revising the Draft EIR, DWR should strive for a more cohesive analysis with sufficient information included in the impact analyses (as opposed to appendices), that can be readily understood by decision-makers and the public, and allow an appropriately long period for public comment and review (more than two months and outside of the end-of-the-year holiday season).	
530-32	VII. Conclusion [City of] Stockton is extremely disappointed that, like prior conveyance proposals, DCP prioritizes export water quality at the expense of Delta residents, and the Draft EIR fails to demonstrate the DWR will protect the water supply, health, and safety of Delta residents. Based on the information available to date, the Project is likely to have significant adverse impacts to Stockton's water supply and the health of its residents.	The comment assertion that there would be significant adverse impacts on Stockton's water supply and the health of its residents is not consistent with the findings from analyses contained in the EIR. Potentially significant environmental impacts of the project and proposed mitigation measures are evaluated in Chapters 7-32. As described in Chapter 9, Water Quality, impacts associated with water quality would be less than significant. As described in Chapter 26, Public Health, potential impacts associated with public health would either be less than significant or mitigated to a less than significant level. Please also refer to Chapter 2, Purpose and Project Objectives, and Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the project's purpose and objectives, including DWR's continuing commitment to operate the State Water Project, as modified to include the Delta Conveyance Project, in

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		compliance with all state and federal water quality and environmental laws.
530-33	Stockton's concerns are amplified because, based on our review of the Draft EIR, it is apparent that (1) the DCP as DWR asserts it will be operated will not have much water quality benefit to the intended beneficiaries (making the massive investment questionable and begging the question of whether there are other potentially feasible alternatives equally or more capable of both meeting Project objectives and complying with the DRA [2009 Delta Reform Act], i.e., such as partial or full brackish water desalination with levee improvements), and thus (2) it is reasonably foreseeable that DWR will in fact not operate the DCP as claimed (prioritizing use of the south Delta pumps), because there will be too much pressure from the water exporters to use the NDD [North Delta Diversion].	Chapter 3, Description of the Proposed Project and Alternatives, describes the operational criteria, real-time operational decision making and adaptive management of the Delta Conveyance Project. Specific diversion requirements and bypass requirements described in Chapter 3 explain that DWR would divert and export Sacramento River water only when conditions allow. In addition, Common Response 3, Alternatives Development and Description, explains that it is speculative and unfounded for DWR to operate the project in ways not described in the EIR. Please also see Common Response 3, Alternatives Development and Description, for information on development of the reasonable range of feasible alternatives evaluated in the EIR and why alternatives such as desalination and/or with levee improvements are not feasible alternatives for the purposes of meeting the most basic project objective. Please see responses to comments 530-23 and 530-24 regarding the description of the operation of the Delta Conveyance Project, if approved, and required compliance with applicable laws and regulations, including the Delta Reform Act. Please also see response to comment 530-216 regarding compliance with existing water rights. Please see Appendix 4B, North Delta Diversion Priority Sensitivity Analysis, which provides a sensitivity analysis of prioritizing north Delta diversion operations over south Delta operations and concludes that impacts would not be greater or substantially different than those disclosed in the chapters of the EIR.
530-34	The DCP violates numerous laws intended for the protection of the Delta, Delta water supply and water quality for in Delta users, recreation, etc., and the legislative mandates for the SWP. Stockton urges DWR and the Newsom Administration to consider the state's obligations to Delta residents and pursue a less impactful, less expensive regionally based multi-benefit alternative that will protect the life and economy of the Delta and sensitive Delta habitats. DWR should coordinate and	The comment assertion that the Delta Conveyance Project, if approved, would not comply with existing laws and regulations is not supported by the contents of the EIR, nor the description of the project in Chapter 3, Description of the Proposed Project and Alternatives, or the content contained in numerous Common Responses (e.g., Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs). In addition, please see responses to comments 530-5, 530-23 and 530-24, and 530-26, describing operation of the Delta Conveyance Project, if approved, and

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	consult with Stockton on its approach, and as it revises the Draft EIR, to ensure that all impacts of the DCP or a better alternative, including those identified in these comments, are accurately and adequately evaluated and fully avoided or mitigated. City staff are available to answer questions about these comments and provide any additional information that will help ensure that the Project EIR accurately evaluates and discloses, and thoroughly mitigates, impacts to Stockton.	compliance with laws and regulations. Please refer to Chapter 2, Purpose and Project Objectives, regarding the purpose of the project. Please see Chapter 1, Introduction, for a description of the State Water Project and background information regarding how water supply has been developed and managed in California. Please also refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the project's purpose and objectives, including DWR's continuing commitment to operate the State Water Project as modified to include the Delta Conveyance Project, if approved, in compliance with all state and federal water quality and environmental laws. The Draft EIR accurately and adequately evaluated and disclosed all potentially significant environmental impacts, including those on water quality (Chapter 9, water Quality), and proposes mitigation where feasible to reduce, avoid, or minimize impacts.
530-35	[Att 1:] The City of Stockton (Stockton or "the City") is located on the San Joaquin River in the southeast Sacramento-San Joaquin Delta (the Delta). The City of Stockton Municipal Utilities Department (COSMUD) serves approximately 55 percent of the total City of Stockton Municipal and Industrial (M&I) demand, with the remaining M&I demand met by the California Water Service Company and San Joaquin County. In 2012, the COSMUD began obtaining a portion of its potable water supply from the San Joaquin River to establish a longterm reliable water supply. [Footnote 1: Brown and Caldwell. 2016. City of Stockton 2015 Urban Watershed Management Plan. July.] Currently, the COSMUD obtains approximately 38 percent of its water supply from the San Joaquin River, with purchased water and groundwater providing the remaining supply. The volume of water extracted from the San Joaquin River is projected to increase over time, such that by 2035 water from the river intake will constitute about 58 percent of the COSMUD's supply. The current	This information describes the background of the organization or individual commenter. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.

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	operational capacity of the intake is 30 million gallons per day (MGD). In 2015, the COSMUD's potable and raw water demand was approximately 26,300 acre-feet/year (ac-ft/yr), while the COSMUD's projected demand in 2035 is expected to be over 43,000 ac-ft/yr. COSMUD's intake pump station facility is located on the San Joaquin River at Empire Tract.	
530-36	[ATT 1:] The City [of Stockton] is concerned that the construction and operation of the proposed Delta Conveyance Project (DCP) may affect water quality and its ability to use water diverted at its intake.	Chapter 9, Water Quality, provides a complete analysis of water quality effects from construction of the project. In addition to implementing traditional construction best management practices and environmental commitments to minimize construction-related effects on water quality, DWR will obtain and comply with all necessary agency permits for construction of the project as described in Chapter 1, Introduction. With regard to project operations, effects to water quality at the City's intake were assessed in Impacts WQ-1 through WQ-14 using appropriate water quality standards or thresholds if no standards exist. The assessments included modeling results for boron, bromide, chloride, mercury, organic carbon, and selenium, and a modeling-based assessment for CHABs. Water quality impacts from project operations at the City's intake would be less-than-significant and project operations would not affect the City's ability to divert water at its intake.
530-37	[ATT 1:] Stockton also operates a wastewater treatment plant that discharges treated wastewater to the San Joaquin River immediately downstream of the Highway 4 Bridge in Southwest Stockton. The City's wastewater discharges are regulated by a National Pollutant Discharge Elimination System (NPDES) permit. The City is concerned about the potential for receiving water degradation brought about by the proposed DCP leading to more stringent NPDES permit requirements resulting in greater capital investment and treatment plant complexity.	This comment provides information regarding Stockton's wastewater treatment plant. Please see response to comment 530-17 regarding the potential for project operations to cause water quality degradation in the San Joaquin River at the City's wastewater treatment plant outfall and related effects on NPDES permit compliance.

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530-38	[ATT 1:] Exponent evaluated the Draft EIR and developed the following comments: 1. DWR's water quality analysis is presented in the form of long-term averages, masking important information needed to assess the impacts of the proposed project on the City of Stockton's drinking water intake.	Please see Common Response 10, Surface Water Quality and Groundwater Resources, regarding the use of monthly average modeling results in the water quality impact analysis.
530-39	[ATT 1:] Exponent evaluated the Draft EIR and developed the following comments: 2. DWR's simulation of project operations does not include the relaxation of operations rules, such has occurred in recent critically dry years, and as such does not accurately simulate and represent the likely operations and impacts of the proposed project.	Please refer to response to comment 530-16 regarding TUCPs. The Extreme Conditions section of Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, acknowledges that CalSim 3 results differ from real time operations under extreme conditions and the model does not represent the unique real-time policy decisions that SWP and CVP operators make in consultation with agencies.
530-40	[ATT 1:] Exponent evaluated the Draft EIR and developed the following comments: 3. DWR's analysis of impacts to Harmful Algal Blooms is flawed due to errors in estimating residence time.	The assertion of the comment regarding flaws in the CHAB analysis due to errors in estimating residence time is not supported by the analysis in the EIR and is not supported by the current scientific understanding of cyanobacteria growth and the formation of CHABs in the Delta. Please see Common Response 10, Surface Water Quality and Groundwater Resources, regarding the appropriateness of the residence time modeling conducted to support the CHABs analysis in Chapter 9, Water Quality, Impact WQ-14.
530-41	[ATT 1:] Exponent evaluated the Draft EIR and developed the following comments: 4. DWR's velocity analysis is irrelevant to the potential for the formation of harmful algal blooms.	The assertion by the comment regarding the irrelevance of velocity is not supported by the analysis in the EIR, as velocity is relevant to consider. Please see Common Response 10, Surface Water Quality and Groundwater Resources, regarding the appropriateness and use of modeled channel velocity to support the CHABs analysis in Chapter 9, Water Quality, Impact WQ-14.
530-42	[ATT 1:] Exponent evaluated the Draft EIR and developed the following comments:	Please see responses to comments 530-21 and 530-79 regarding modeled bromide concentrations at the City's intake assessment location, which indicate that the evaluation of bromide is appropriate to assess the

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	5. DWR should evaluate bromide concentrations at Stockton's intake using best available information.	potential for impacts on the City of Stockton.
530-43	[ATT 1:] Exponent evaluated the Draft EIR and developed the following comments: 6. DWR should evaluate the impacts of the proposed project on the City's wastewater discharge operations and NPDES [National Pollutant Discharge Elimination System] permit.	Please see response to comment 530-17 regarding impacts of the project on the City's wastewater operations.
530-44	[ATT 1:] Exponent evaluated the Draft EIR and developed the following comments: 7. Comments regarding DWR's evaluation of climate change 7.1. DWR conducted CalSim 3 sensitivity modeling for multiple sea level rise scenarios, but did not model conditions in the Delta for the same scenarios.	Please see Common Response 9, Hydrologic Modeling and Approach, regarding modeled representation of future conditions and climate change, and climate change assumptions as input into the hydrologic model. The CalSim 3 2040 Climate Sensitivity Analysis section of Appendix 30A, CalSim 3 Results Sensitivity to 2040 Climate Change and Sea Level Projections, describes the approach used for evaluating multiple sea level conditions, for a variety of metrics at a number of locations; exceeding the requirements of CEQA.
530-45	[ATT 1:] Exponent evaluated the Draft EIR and developed the following comments: 7. Comments regarding DWR's evaluation of climate change 7.2. In choosing the H++ model scenario with 1.8 feet of sea level rise, DWR chose an extremely unlikely scenario that generated unexplained results and that may mask the likely impacts of the proposed project.	Please see Common Response 9, Hydrologic Modeling and Approach, regarding modeled representation of future conditions and climate change, and climate change assumptions as input into the hydrologic model. The Sea Level Rise section of Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, describes the assumptions used to frame the analysis of sea level rise scenarios presented in the EIR. The Sea Level Rise Assumptions and Sensitivity Analysis Results sections in Appendix 30A, CalSim 3 Results Sensitivity to 2040 Climate Change and Sea Level Projections, describe these assumptions with respect to the results of a sensitivity analysis that compared the No Project Alternative 2040 with Alternative 5 using three scenarios as illustrated in multiple figures; beginning with Figure titled Shasta End-of-Month Storage (S_SHSTA), Exceedance Probability for Monthly Average End-of-Month Storage (thousand acre-feet) for May, No Project Alternative and Alternative 5

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		(2040); 2040 and ending with Figure titled, Rock Slough Salinity (RS_EC_MONTH), Monthly Average EC (UMHOS/CM), No Project Alternative and Alternative 5 (2040). The commenter alleges without any evidence that the climate change assumptions used in the Delta Conveyance Project EIR somehow are masking the potential impacts. The EIR evaluates Delta Conveyance Project incremental impacts under both 1.8 ft sea level rise and 0.5 ft sea level rise projections using CalSim 3 as shown in Appendix 30A. Given the similarities in the CalSim 3 results for both the 1.8-ft and 0.5-ft sea level rise scenarios, it was determined that the DSM2 simulation of 0.5-ft was not required.
530-46	[ATT 1:] Exponent evaluated the Draft EIR and developed the following comments: 7. Comments regarding DWR's evaluation of climate change 7.3. DWR's methodology for modeling salinity for scenarios with sea level rise is unclear.	Please see Common Response 9, Hydrologic Modeling and Approach, regarding modeled representation of future conditions and climate change, climate change assumptions as input into hydrologic model. The Delta Salinity Compliance section of Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, provides a discussion of how salinity was addressed through the hydrologic modeling effort. DWR believes the level of information regarding changes in salinity is accurately estimated and evaluated in the EIR. The commenter has provided a statement of opinion regarding the salinity modeling; however, the comment does not provide new information, raise a significant environmental issue relating to the proposed project or address the adequacy, accuracy, or completeness of the EIR. Therefore, no further response is required. DWR has reviewed all comments and will consider all comments in its decision-making process.
530-47	[ATT 1:] Exponent evaluated the Draft EIR and developed the following comments: 7. Comments regarding DWR's evaluation of climate change 7.4. DWR's analysis of in-Delta impacts in 2040 is incomplete, as DWR did not evaluate WQ impacts of levee overtopping or	Please see response to comment 530-91, for a detailed comment and response regarding 2040 analyses contained in the EIR.

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	breaches.	
530-48	[ATT 1:] Exponent evaluated the Draft EIR and developed the following comments: 7. Comments regarding DWR's evaluation of climate change 7.5. DWR's analysis of the proposed project for 2100 did not consider water quality impacts of sea level rise.	Please see response to comment 530-93, for a detailed comment and response regarding climate change analyses past 2040.
530-49	[ATT 1:] Exponent evaluated the Draft EIR and developed the following comments: 7. Comments regarding DWR's evaluation of climate change 7.6. DWR's assumption of stationarity is flawed.	Please see Common Response 9, Hydrologic Modeling and Approach, regarding best available tools as it relates to stationarity. As described in this Common Response, the assumption of stationarity is based on the best available science available to DWR. While each CalSim 3 simulation represents a single point in time or stationarity, the Draft EIR included evaluation of Delta Conveyance Project impacts under multiple scenarios representing different current and future conditions.
530-50	[ATT 1:] Exponent evaluated the Draft EIR and developed the following comments: 8. DWR's method of computing and presenting summary statistics is flawed.	The EIR uses a number of different methods and statistical evaluation to model results depending on the resource. The different models used, rationale for their use, and type of modeling results are described in the methods section of each resource chapter (i.e., Chapters 7 through 32). Detailed responses to detailed comments regarding the use of summary statistics are provided to letter 530 herein.
530-51	[Att 1:] Exponent evaluated the Draft EIR and developed the following comments: 9. The Draft EIR is lengthy and difficult to review, and our comments are not complete.	Please see Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding analysis of the project as a whole and the length and complexity of the EIR. Detailed responses to detailed comments regarding the length and complexity of the EIR are provided to letter 530 herein.
530-52	[Att 1:] Qualifications I have 25 years of experience with projects involving hydrology, hydrogeology, hydrodynamics, aquatic chemistry, and the environmental fate of a range of	This information describes the background of the organization or individual commenter. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-

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	constituents. I have knowledge of California water supply issues, including expertise in California's Bay-Delta estuary. My expertise includes designing and implementing field and modeling studies to evaluate groundwater and surface water flows, the source and distribution of water within the Delta, and contaminant fate and transport. I have also designed studies using one-dimensional hydrodynamic models, three-dimensional computational fluid dynamics models, longitudinal dispersion models, and Monte Carlo stochastic models to evaluate flows, water quality, and mixing within the Delta, and I have directed modeling studies and utilized the results of numerical modeling to evaluate surface and ground water flows. My curriculum vitae is provided as Attachment A [See ATT 2].	making process.
530-53	[ATT 1:] Comments 1. DWR's water quality analysis is presented in the form of long-term averages, masking important information needed to assess the impacts of the proposed project on the City of Stockton's drinking water intake.	Please see Common Response 10, Surface Water Quality and Groundwater Resources, regarding the use of monthly average modeling results in the water quality impact analysis.
530-54	[ATT 1:] The City of Stockton operates a drinking water intake located in the San Joaquin River at Empire Tract, and a wastewater treatment plant that discharges treated effluent to the San Joaquin River immediately downstream of the Highway 4 Bridge in Southwest Stockton. The City is concerned that the proposed DCP may impact operations at its drinking water intake, which diverts water of suitable quality, generally on an hourly basis. The City is further concerned about water quality changes within the Delta that may impact compliance with its NPDES permit for the discharge of treated wastewater.	Please see response to comment 530-36 regarding the impact of the project on the City's ability to divert surface water of suitable quality at its intake. Please see response to comment 530-17 regarding the impact of the project on the City's ability to discharge treated wastewater and the ability of the City to meet wastewater discharge permit requirements, given there would be no substantial degradation of receiving waters as a result of operations of the project.

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530-55	[ATT 1:] DWR's Draft Environmental Impact Report for Delta Conveyance Project [Footnote 2: Draft EIR documents were downloaded from https://www.deltaconveyanceproject.com/read-the-document.] (Draft EIR) assesses the impacts of the proposed project over a 95-year timeframe that includes water years classified as critical, dry, below normal, above normal, and wet. [Footnote 3: Water years are classified as critically dry, dry, below normal, above normal, and wet based on a formula described in https://cdec.water.ca.gov/reportapp/javareports?name=WSIHIST. Accessed on Oct 21, 2022.] DWR simulated project operations and conditions within the Delta for water years (WY) 1923-2015 using several models. The CalSim 3 model, which utilizes a monthly time step, was used to simulate project operations, including reservoir releases and diversions and exports. Output from CalSim 3 was used as input to DWR's Delta Simulation Model II (DSM2), DSM2 simulates flows and water quality within the Delta using a 15-minute time step, which is necessary to capture tidally-driven flows and water quality conditions within the Delta estuary. An additional model, SCHISM, was used to simulate Delta hydrodynamics and water quality for future conditions (with climate change), and to adjust the DSM2 and CalSim 3 model parameters used to simulate Delta conditions with sea level rise.	The comment describes content in the EIR regarding the types of models used and the presentation of results. Please see Common Response 10, Surface Water Quality and Groundwater Resources, regarding the use of monthly average modeling results in the water quality impact analysis.
530-56	[ATT 1:] Throughout the Draft EIR, DWR discusses water quality changes resulting from the proposed project as long-term averages aggregated statistically. For example, electrical	Please see response to comment 530-14 and Common Response 10, Surface Water Quality and Groundwater Resources, regarding the use of monthly average modeling results in the water quality impact analysis.

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	conductivity (EC) data from DSM2 were first processed to compute monthly average EC values, from which statistical distributions were then calculated for the full 95-year simulation period. See, for example, Figures 1 and 2 [See ATT 1 Exhibit 1 and ATT 1 Exhibit 2], which are reproduced from EIR Appendix 9G.	
530-57	[ATT 1, Exhibit 1: Model results for monthly average electrical conductivity at Emmaton, Existing Conditions. Reproduced from EIR Appendix 9G, page 9G-9.]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-58	[ATT 1, Exhibit 2: Model results for average electrical conductivity at Emmaton, Alternative 5 (proposed project), and increment due to project (Alternative 5 minus Existing Condition). Reproduced from EIR Appendix 9G, page 9G-14.]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-59	[ATT 1:] Although the long-term average salinity data presented in the EIR indicate that many locations can expect increases in salinity, particularly during the summer and fall months (see Figures 1 and 2 [See ATT1 Exhibit 1 and ATT1 Exhibit 2], which show salinity increases at Emmaton in the western Delta), the information in the Draft EIR does not provide the level of detail required to assess project impacts. Like the City of Stockton, most entities within the Delta, including municipal water purveyors, agricultural water users, and POTWs [publicly owned treatment works] who discharge to the Delta, operate facilities and manage treatment operations on short timeframes (e.g., hourly). Model results that are processed to show long-term averages, and then provided in summary statistical format, do not provide the information needed to assess the impacts of the proposed project on their operations. In addition, DWR has made fundamental statistical errors as detailed in Opinion 7 that make it even more difficult to assess	Please see responses to comments 530-14 and 530-15, as well as Common Response 10, Surface Water Quality and Groundwater Resources, regarding the presentation of data and use of monthly average modeling results in the water quality impact analysis. As noted in these responses, the use of monthly averaged modeling output was appropriate relative to modeling capabilities and provided sufficient detail to assess the degree and direction of water quality changes due to project operations relative to the water quality thresholds of significance.

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	the impacts of the proposed project.	
530-60	[ATT 1:] The City [Stockton] diverts water from its intake at Empire Tract for treatment and Municipal and Industrial (M&I) use. Increases in salinity at the City's intake, or an increase in the frequency or duration of harmful algal blooms, will reduce the amount of water the City may divert from the Delta. The City measures salinity at its intake and operates its intake on a real-time basis. Because the Draft EIR has presented water quality information in the format of long-term averages presented in summary statistical format, the Draft EIR does not provide the information the City needs to evaluate the potential impacts of the proposed project on its drinking water operations.	Please see responses to comments 530-14 and 530-15, as well as Common Response 10, Surface Water Quality and Groundwater Resources, regarding the use of monthly average modeling results in the water quality impact analysis. As noted in these responses, there is sufficient detail to assess the degree and direction of water quality changes due to project operations relative to the water quality thresholds of significance.
530-61	[ATT 1:] To address potential impacts at the City's [Stockton] drinking water intake, DWR should use DSM2 model results to compute the total number of hours that salinity will exceed the City's operational threshold of 110 mg/L chloride. Results for both the no-project and the full range of project alternatives, and for both existing conditions and future scenarios, should be presented in tabular and/or graphical format so that the City can assess the impacts of the proposed project on the hourly operations of its drinking water intake.	As noted in response to comment 530-13, the relevant water quality objective for chloride for municipal and domestic supply beneficial uses at this location is the secondary maximum contaminant level (MCL) of 250 mg/L. Please see Common Response 10, Surface Water Quality and Groundwater Resources, regarding the use of monthly average modeling results in the water quality impact analysis.
530-62	[ATT 1:] Changes in Delta water quality have the potential to impact the requirements of Stockton's wastewater discharge permit and ability to maintain compliance with permit conditions as well. When an NPDES permit is issued or re-issued, the Regional Water Quality Control Board (Regional Board) performs a "reasonable potential analysis" to determine if a discharge has the "reasonable potential" to "cause or	As demonstrated in the impact analysis of multiple water quality constituents in Chapter 9, Water Quality (Impact WQ-1 through WQ-14), in which water quality degradation was evaluated, water quality impacts on the San Joaquin River downstream of the City's discharge would be less than significant. Hence assertions regarding the potential for water quality changes to result in more stringent wastewater discharge permit requirements for the City are not supported by the analysis.

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	contribute" to an exceedance of water quality standards; water quality degradation in the Delta makes it more likely that the discharge will be found to have "reasonable potential." The Regional Board also imposes permit conditions, including effluent limitations, that are computed considering receiving water constituent concentrations, and calculates total maximum daily loads (TMDLs) that are a direct function of receiving water quality. If water quality in the Delta is degraded by the operation of the proposed project (or the alternatives to the proposed project), this may result in a determination that Stockton's discharges of treated wastewater have the reasonable potential to contribute to exceedances of water quality standards and the subsequent implementation of more stringent permit requirements, which could lead to required changes in treatment, including the construction of new facilities.	
530-63	[ATT 1:] 2. DWR's simulation of project operations does not include the relaxation of operations rules, such has occurred in recent critically dry years, and as such does not accurately simulate and represent the likely operations and impacts of the proposed project.	Please see Common Response 9, Hydrologic Modeling and Approach, regarding best available tools, consideration of drought and temporary urgency change petitions, and modeled representation of operation criteria. The commenter has provided a statement of opinion regarding the modeling assumptions provided in the Extreme Conditions section of Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, which provides an explanation of modeling limitations.
530-64	[ATT 1:] DWR has described project operations in Appendix 5A, Section B of the Draft EIR. Project operations were simulated using the CalSim3 and DSM2 models as described in the EIR. In a section called "Relaxation of Regulatory Requirements," DWR notes that "CalSim 3 makes storage release decisions and routes water	The modeling simulations included in the EIR are complete and accurate for the purposes of impact disclosure. Please see Common Response 9, Hydrologic Modeling and Approach, regarding best available tools, consideration of drought and temporary urgency change petitions (TUCP), and modeled representation of operation criteria. Temporary urgency change petitions are not part of the project description as described Common Response 3, Alternatives Development and Description.

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	through the stream network, based on a set of pre-defined rules that represent existing or future assumed regulations and operations criteria. These pre-defined rules do not include temporary relaxation of non-discretionary regulatory requirements such as occurred in 2014 and 2015 as a result of Temporary Urgent [sic] Change Petitions submitted to the State Water Board." [Footnote 4: Draft EIR, Appendix 5A, Section B, at p. B-66. [Note that this appendix has multiple pages with duplicate page numbers. This quotation is found on the first page B-66 (pdf p. 70), not the second page B-66 (pdf p. 286).]] (emphasis added) DWR further notes that "Frequency of extreme conditions is expected to increase in the future under the combined effects of climate change and sea level rise." [Footnote 5: Ibid.] Thus, DWR's modeling and project evaluations do not incorporate the changed operations that have occurred pursuant to the Temporary Urgency Change Petitions (TUCPs) issued in recent years during critically dry conditions. In addition to the TUCPs issued in the critically dry years of 2014 and 2015, TUCPs were also issued in 2016, 2021 and 2022. [Footnote 6: https://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/tucp/] The historical simulation period of 1922-2015 includes 15 critically dry years. [Footnote 7: https://cdec.water.ca.gov/reportapp/javareports?name=WSIHIST] It is entirely foreseeable that TUCPs may be adopted and project operations may be modified during critically dry years in the future, yet DWR has not evaluated water quality conditions within the Delta under these conditions, including the potential impact of operation of the new proposed North	As described in sections Relaxation of Regulatory Requirements, Monthly Timestep, and Extreme Conditions of Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, CalSim 3 does not represent real time policy and operational decisions or extreme circumstances that deviate from standard operating polices.

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	Delta Diversion intakes. Because DWR has not simulated the changed operations that may result during critically dry conditions, DWR's modeling evaluation and discussion of impacts within the Draft EIR is incomplete. Further, DWR's model simulations of future conditions indicate that the salinity of the Delta will increase over time as a result of sea level rise. DWR has not disclosed if it anticipates requiring TUCPs more frequently under these conditions, or the water quality impacts of operating under TUCPs in the future.	
530-65	[ATT 1:] 3. DWR's analysis of impacts to Harmful Algal Blooms is flawed due to errors in estimating residence time DWR's analysis of cyanobacteria harmful algal blooms is presented in Chapter 9 (Water Quality) and Appendix 9E. DWR evaluated five primary factors that "provide favorable conditions" for Mycrocystis to outcompete other phytoplankton in the Delta, including (1) water temperature, (2) channel flow velocities, (3) residence times, (4) water column irradiance/clarity, and (5) nutrient availability. Our analysis focuses on the hydrodynamic parameters of channel flow velocities and residence time. DWR's residence time analysis. DWR correctly notes that an increase in residence times may contribute to an increased likelihood of algal blooms. DWR's analysis focused on evaluating residence times in nine Delta locations "that have been part of routine Delta monitoring programs and identified as primary bloom areas" [Footnote 8: Draft EIR, Appendix 9E, at p. 9E-8.] plus additional locations "to more accurately capture how the project alternatives could potentially affect water residence times across the Delta." [Footnote 9: Draft EIR, Appendix 9E, at p. 9E-9.] DWR identified sub-regions of the Delta as indicated in Figure 3 and used the DSM2 model to	Please see response to comment 530-40 regarding the CHAB analysis. As noted in that response, and in Common Response 10, Surface Water Quality and Groundwater Resources, the comment assertion that the residence time modeling approach supporting the CHABs analysis in Chapter 9, Water Quality, is flawed is not supported by the current scientific understanding of cyanobacteria growth and the formation of CHABs in the Delta. The approach to residence time used in Chapter 9 is appropriate and supports the CHABs analysis in Impact WQ-14.

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	simulate a concentration of 100 units within each sub-region (and zero units outside of each sub-region), then to compute the time (in hours) for 90% of the water within that subregion to leave each sub-region. [Footnote 10: Draft EIR, Appendix 5A, Section C.6.6, at p. C-21: "For this analysis, a concentration of 100 is assigned to all DSM2 channels within the zone defined, while for all other DSM2 channels outside the zone an initial concentration of zero is assigned." "For each channel within the zone, residence time for a given channel is defined as the length of time it takes for 90% of the constituent to leave through either end of channels." and "The residence time for the entire zone is defined as the average of the length of residence time for the individual DSM2 channels within the defined zone."] This "Time (in hours) to Flush 90 Percent of Water from the Location" was computed for each month in the simulation period (1923-2015), and results were averaged for each month. Results for the existing condition and project alternatives were compared; if results were the same for each alternative, DWR concluded that residence time within that sub-region of the Delta did not increase as a result of the project. Based on its analysis, DWR noted increases in residence time in some of the sub-regions it analyzed [Footnote 11: For example, the EIR noted, "In the San Joaquin River near Venice Island, model results show median residence time generally increases under all alternatives for the full simulation period for the months of July through November (Table 9-50; refer to Appendix 9E, Tables 9E-3-10-1 to 9E-3-10-6 and Figure 9E-3-10.)" (Draft EIR, Chapter 9, p. 9-166) DWR further found that alternatives 2a and 4a, which involve higher diversion rates and potentially a third intake, have greater impacts: "The	

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	greatest increase in residence time in the San Joaquin River near Venice Island was modeled to occur in November at the 75th percentile. Residence time in the 75th percentile increase by 16 to 17 hours under Alternatives 1, 2b, 2c, 3, 4b, 4c, and 5 and by 32 hours under Alternatives 2a and 4a." (Draft EIR, Chapter 9, p. 9-167).], [Footnote 12: For example, the EIR noted "At Mildred Island, the modeled median residence time for the full simulation period under the project alternatives, relative to existing conditions, show [sic] little to no change in residence time for June and November (Table 9-51; refer to Appendix 9E, Tables 9E-3-8-1 to 9E-3-8-6 and Figure 9E-3-8). Under all project alternatives there are increases in median residence time in July, August, September, and October….." (Draft EIR, Chapter 9, p. 9-168).] but "little to no change" in residence time in other sub-regions. [Footnote 13: For example, Table 9-47 (which is not referenced in the text of the Draft EIR) shows "modeled median residence time in hours using DSM2 for Existing Conditions and Project Alternatives for Locations with Short Residence Time (i.e., ≤ 72 hours [3 days])" and indicates little difference or slight increases between existing conditions and project alternatives (Draft EIR, Chapter 9, p. 9-160).] However, as detailed below, DWR's analysis is fundamentally flawed and is not indicative of residence times of the Delta estuary.	
530-66	[ATT 1, Exhibit 3: Map of Sub-regions from DSM2 model grid Version 8.2.1 from Jue 2021.]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-67	[ATT 1:] Flaws in DWR's analysis of residence time. As detailed below, DWR's analysis of residence time is flawed in several respects: 1. Small sub-regions of the Delta are arbitrary, and results are a	The comment assertion that the residence time modeling approach supporting the CHABs analysis in Chapter 9, Water Quality, is arbitrary is not supported by the current scientific understanding of cyanobacteria growth and the formation of CHABs in the Delta. Please see Common Response 10, Surface Water Quality and Groundwater Resources,

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	function of the subregions selected, not a function of hydrodynamics within the Delta. The methodology employed by DWR to estimate "pseudo-residence time" [Footnote 14: We use the term "pseudo-residence time" because, as detailed below, DWR's calculations are unrelated to the true residence time of an estuary.] divided the Delta into a number of sub-regions. DWR provided no basis for the selection of the sub-regions, either in terms of their size, the volume of water they contain, or any other factor. Thus, the subregions defined by DWR are arbitrary, and the "pseudo-residence time" for each sub-region is a function of the size/volume and tidal flow conditions of that sub-region. The pseudo-residence time values calculated by DWR are unrelated to the actual residence time of the estuary. To understand why DWR's methodology is flawed, consider that water may leave each defined sub-region by (1) advecting and dispersing into channels adjacent to each sub-region (i.e., remaining within the Delta) or (2) being pumped out of the region (e.g., for in-Delta consumptive use or exported from the Delta). Water that sloshes into adjacent channel segments due to tidal flows remains within the Delta, as would any algal cells that were present in the water within each defined sub-region. Many of the sub-regions are connected to multiple channels within the Delta; for example, the Middle River sub-region is connected to five separate channels [Middle River to the north, Empire Cut, Middle River to the south, North Victoria Canal, and the channel between Woodward and Bacon Islands], such that DWR's original tracer may exit this sub-region through five different channels (but remain in the Delta) in addition to being pumped out of the channels for in-Delta consumptive use (thus	regarding the appropriateness of the residence time modeling, calculations performed to support the CHABs analysis in Impact WQ-14, and description of why site-specific residence times were assessed and considered in the impact analysis. Regarding the commenter's IKEA showroom analogy for Delta residence time and CHABs, the important consideration is not the residence time for the Delta as a whole as asserted, but rather residence time at specific locations within the Delta where other conditions are favorable for CHABs. As described further in Chapter 9, Appendix 9E, Cyanobacteria Harmful Algal Blooms, and Common Response 10, cyanobacteria are not produced at the same rate or to the same abundance in all areas of the Delta. Rather, CHABs form at specific locations within the Delta and cyanobacteria cells are then dispersed broadly across the Delta. Therefore, relating residence time for the Delta as a whole to CHAB formation potential is not as useful as assessing residence time in areas known to experience CHABs, as done in the EIR. With reference to the IKEA showroom analogy, the time a person spends in the entire IKEA store is not as useful in explaining sales (sales being analogous to CHABs) as the amount of time they spend in certain sections of the store and why. Shoppers have varying reasons for being in the store and thus spend different amounts of time in different departments, with varying effects on sales. Total sales (in dollars) attributed to the kitchen section may be three or four times higher than those for the bedroom section, based on time spent in these departments or department-specific factors, such as inventory and discounted items. Furthermore, time spent in the store could be on nonactive shopping activities. Some shoppers may pause to take a call on their cell phone. Some shoppers may need to use the restroom. Shoppers making purchases spend time in the checkout line, the duration of which can vary greatly. Active shopping time combined with nonactive shopping time gives a single metric of time spent in the store, but it does not differentiate the more important metrics of time spent actively shopping in different areas of the

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	being removed from the Delta). Further, algal cells may flow through several of DWR's defined sub-regions before they are removed from the Delta. For example, a portion of the San Joaquin River water that enters the Delta at Vernalis may flow through the Stockton Deep Ship Channel, Venice Island, Franks Tract, and Jersey Island sub-regions (and through channels between these sub-regions) before exiting the Delta. Thus, algal cells that may be present within one sub-region of the Delta will flow through other Delta channels and remain within the Delta for far longer than indicated by DWR's calculation of the pseudo-residence time. An imperfect analogy for understanding why DWR's methodology is incorrect is the Ikea Showroom. It would not be appropriate to estimate the average length of time a person spends in an Ikea store by evaluating the average length of time spent by people in the bedding section, or in the kitchens section. Rather, because there are multiple (tortuous) paths that a person may take through an Ikea, the average time spent within the Ikea can best be estimated by monitoring the total number of people inside the store during open hours and the rate at which people enter and leave the Ikea through the exterior doors. See Figure 4 [See ATT1, Exhibit 4].	store and why purchases are made. Hence, to understand sales (or CHAB formation in the Delta), it is important to understand the time customers spend actively shopping in each section of the store and department-specific factors, not just the total time spent in the store. Therefore, the IKEA showroom analogy is an inappropriate representation of how residence time should be calculated for the CHABs analysis in the EIR.
530-68	[ATT 1 Exhibit 4: Ikea Showroom Diagram]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-69	[Att 1:] Flaws in DWR's analysis of residence time. As detailed below, DWR's analysis of residence time is flawed in several respects: 2. Residence time for estuary should be evaluated for the system as a whole.	The comment assertion that the residence time modeling and calculations supporting the CHABs analysis in Chapter 9, Water Quality, should be evaluated for the Delta as a whole is not supported by the current scientific understanding of cyanobacteria growth and the formation of CHABs in the Delta. This comment presents alternative calculations of residence time for

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	Chapter 7 of Fischer et al. (1979) presents a detailed analysis of mixing in estuaries, including a derivation of the residence time (called the "mean detention time," defined as the mean time that a particle of tracer remains inside an estuary). The mean residence time is estimated as the volume of water in the estuary divided by the flow rate of freshwater inflows. [Footnote 15: Fischer, H.B., E.J. List, R.C.Y. Koh, J. Imberger, and N.H. Brooks. Mixing in Inland and Coastal Waters. Academic Press: London. 1979. Chapter 7: Mixing in Estuaries. At pp. 274-275.] DWR has used DSM2 modeling to perform more detailed estimates of residence time, defined as the time required for flows entering the Delta to leave the Delta (as a whole). Specifically, DWR calculated the residence time of fresh water in the Delta using particle tracking simulations modeled with the DSM2 Particle Tracking Module (Mierzwa et al. 2006a [Footnote 16: Mierzwa, M., J. Wilde, and B. Suits. 2006a. Long-Term Trends of Delta Residence Time. California Department of Water Resources. Bay-Delta Office. Modeling Support Branch. Delta Modeling Section.], 2006b [Footnote 17: Mierzwa, M., J. Wilde, B. Suits, and T. Sommer. 2006b. Methodology for Flow and Salinity Estimates in the Sacramento-San Joaquin Delta and Suisun Marsh. Chapter 3: Developing a Residence Time Index to Study Changes in 1990-2004 Delta Circulation Patterns.], and Wilde et al. 2006c [Footnote 18: Wilde, J., M. Mierzwa, and B. Suits. 2006. Using particle tracking to indicate Delta residence time. California Dept. of Water Resources. Bay-Delta Office. Modeling Support Branch. Delta Modeling Section.]). Mierzwa et al. (2006a and 2006b)) simulated the residence time of water in the Delta between 1990 and 2004 by tracking water that entered the system at Freeport (on the Sacramento River)	the Delta. Please see Common Response 10, Surface Water Quality and Groundwater Resources, regarding the appropriateness of the residence time modeling and calculations performed to support the CHABs analysis in Impact WQ-14. As described in Common Response 10, the definition of residence time and DWR's approach to evaluating residence time are scientifically supported and not arbitrary. The residence time calculation presented by the commenter, which does not represent the local conditions, is not relevant for the mechanisms driving the CHABs dynamics. The approach, described both in Chapter 9 and further clarified in Common Response 10, fully evaluates the potential impacts of the operation of the Delta Conveyance Project on CHABs.

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	and at Vernalis (on the San Joaquin River). The residence time was defined as the number of days required for 75% of the particles injected over a 24-hour period at a specific location (e.g., Freeport) to leave or be removed from Delta channels. The particles were assumed to have left Delta channels when they passed (i.e., were detected) at the following locations: SWP and CVP pumps, CCWD and North Bay Aqueduct intakes, Delta Island diversions, and the Sacramento River at Chipps Island. Mierzwa et al. (2006a and 2006b) determined the average 75% particle residence time for each month (e.g., every February, every October) between 1990 and 2004, and then calculated a long-term mean for each month with those averages. The long-term mean monthly residence times are shown in Table 1 [ATT 1 Exhibit 5], together with minimum and maximum monthly residence times during the 1990-2004 time period. The monthly average residence times of Sacramento River inflows ranged from an average of 16 days during February (minimum of 3 days and maximum of 38 days), to 51 days during October (minimum of 37 days and maximum of 74 days). Monthly average residence times for San Joaquin River flows ranged from an average of 16 days during January (minimum of 6 days and maximum of 38 days), to 33 days during April (minimum of 8 days and maximum of 54 days). As expected, residence times were longer during dry years than during wet years; minimum residence times for Sacramento inflows occurred during 1997 and 1998, which were wet years, while maximum residence times occurred during 1992, a critically dry year. Corrected residence times. By definition, residence time is a	

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	function of the amount of water present in the system and the flow rate of water into (or out of) the system. Residence time can be estimated as follows: Residence time = Volume of water / Flow rate into system = Volume of water / Flow rate out of system During high flow conditions, residence times are shorter, while during low flow (drought) conditions, residence times are longer. Exponent assessed the residence time of water within the Delta for each month in the 95-year simulation period for the existing condition scenario and the proposed project (Alternative 5). To perform the calculation, Exponent used the USGS estimate of the volume of water within the Delta [1.343 million acre-feet (MAF)]. [Footnote 19: U.S. Geological Survey, 2007. Suisun Bay & Delta Bathymetry: Production of a 10-meter Grid. Available at https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/SHR/SHR-407.pdf.] Total monthly inflows were calculated from DWR's DSM2 model results for the proposed project scenario as the sum of flows from the Sacramento River, San Joaquin River, eastside streams, and Yolo bypass minus any diversions from the proposed North Delta intakes. Exponent also computed monthly residence times for the 2040 no-project and proposed project scenarios, which involve 1.8 ft of sea level rise. Based on the estimated surface area of the Delta (57,000 acres from Jassby and Cloern (2000)) and an increase in water level of 1.8 ft, we estimated that the volume of water in the Delta would increase by 102.6 TAF with 1.8 ft of	

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	sea level rise, and we computed Delta inflows from DSM2 model results as noted above. Results of our residence time computations are shown in Table 2 [ATT 1, Exhibit 6].	
530-70	[ATT 1, Exhibit 5: Average monthly residence times between 1990 and 2004 based on Mierzwa et al. 2006b]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-71	[ATT 1, Exhibit 6: Mean residence time in the Delta over the 95-year simulation period. Computed from Delta volume and Delta inflows from DWR's DSM2 model scenarios.]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-72	[Att 1:] Several observations follow from Table 2 [ATT 1, Exhibit 6]. First, the mean residence time for Alternative 5 (proposed project) is higher in all months than the mean residence time for existing conditions. Similarly, the mean residence time in 2040 for Alternative 5 (proposed project) is higher in all months than the mean residence time for the 2040 no-project condition. The long-term mean monthly residence time increases with the proposed project by between 8% and 15%.]	This comment is interpreting residence times computed by the commenter and presented in an exhibit included in the comment letter. The approach the commenter used for residence times is not appropriate to characterize the effects on CHABs dynamics. Please see Common Response 10, Surface Water Quality and Groundwater Resources, regarding the appropriateness of the residence time modeling and calculations performed to support the CHABs analysis in Impact WQ-14.
530-73	[Att 1:] Second, the shift in hydrology is apparent in the computed residence times. The residence times in 2040 (no project) are lower than the residence times in 2020 (existing condition) for the months of December, January, February, March and April due to increasing Delta inflows as a result of shifting hydrological conditions. In the remaining seven months of the year, including the warmer summer months when algal blooms are most likely, climate change results in an increase in residence time, increasing the likelihood of algal blooms under these conditions, and the proposed project increases residence time even more than climate change alone.	Please see response to comment 530-72 regarding the comment interpretation of residence time computed by the commenter and information contained in Common Response 10, Surface Water Quality and Groundwater Resources, regarding the calculations performed to support the CHAB analysis in Impact WQ-14.

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530-74	[ATT 1:] 4. DWR's velocity analysis is irrelevant to the potential for the formation of Harmful Algal Blooms DWR's analysis of the potential for the formation of algal blooms includes analyses of the velocity of flows in Delta channels. For example, DWR stated, "DSM2 was used to model channel velocities at various Delta locations (Appendix 9E). This analysis focused on how the project alternatives would affect 15-minute absolute velocity (regardless of direction) in channels of the Delta. Mathematical daily average velocity may approach zero when flows on the tidal cycle move in opposite directions, and thus is not very useful for determining how channel velocity affects cyanobacteria. In such tidally influenced channels, 15-minute absolute velocity (regardless of direction) is the parameter that best characterize [sic] the degree of channel mixing that occurs daily. Hence, this analysis determines how the project alternatives would affect 15-minute absolute velocity, relative to velocities for existing conditions at the assessment locations. The project alternatives would have negligible, if any, effect on the probability with which any given 15-minute absolute velocity would occur at the assessment locations during the June through November period … Consequently, the project alternatives would not alter turbulence and mixing within Delta channels sufficiently to substantially affect, or even measurably affect, the frequency or size of Microcystis or other cyanobacteria blooms at any Delta assessment location, relative to existing conditions." [Footnote 20: Draft EIR, Chapter 9, at pp. 9-156 to 9-157.] As detailed below, the EIR presents a simplified analysis of	The comment assertion that modeled 15-minute channel velocities are irrelevant for the CHABs analysis in Chapter 9, Water Quality, is not supported by the current scientific understanding of cyanobacteria growth and the formation of CHABs in the Delta. Please see Common Response 10, Surface Water Quality and Groundwater Resources, regarding the appropriateness of using 15-minute channel velocities to support the CHABs analysis in Impact WQ-14.

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	Delta hydrodynamics and channel velocities, presenting cumulative probability diagrams based on 15-minute absolute velocities. However, rather than focusing on factors that may be relevant for cyanobacteria, DWR's analysis of 15-minute absolute velocities only establishes that channel velocities within the Delta are driven by the tides. To illustrate this point, Exponent has prepared several figures. Figure 5 [See ATT1 Exhibit 7] presents the channel velocities predicted by the DSM2 model in the channel between Venice Island and Empire Tract, near Stockton's drinking water intake, for water year (WY) 1987, a dry water year. [Footnote 21: https://cdec.water.ca.gov/reportapp/javareports?name=WSIHIST] Figure 5 presents the simulated velocities both as 15-minute model output and as daily average (or net) velocity. Figure 5 demonstrates that the flow at Stockton's municipal drinking water intake reverses direction on a daily basis, with 15-minute velocities ranging from -0.37 feet per second (fps; upstream direction) to +0.68 fps (downstream direction). Thus, flow at Stockton's intake location "sloshes" back and forth twice daily as a result of tidal forcing. In contrast, daily average velocities are much lower, ranging from about +0.07 fps (downstream) to +0.24 fps (downstream). Thus, while instantaneous (15-minute) velocities can reach high levels, high velocities do not persist for long periods of time, and the net velocity, with tidal fluctuations removed, is much lower in this area of the Delta. Figure 6 [See ATT 1 Exhibit 8] presents 15-minute and daily average velocities for the month of June 1987. Consistent with Figure 5, 15-minute velocities range from about -0.36 fps (upstream) to +0.64 fps (downstream direction), but daily	

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	average velocities range from about +0.1 fps (downstream) to +0.18 fps (downstream). Finally, Figure 7 [See ATT1 Exhibit 9] presents 15-minute and daily average velocities for a seven-day period in June 1987; 15-minute velocities in Figure 7 range from -0.36 fps (upstream) to +0.64 fps (downstream), but daily average velocities range from about +0.11 fps (downstream) to +0.18 fps (downstream). In contrast to Figures 5-7, which show the impact of tidal forcing on velocities in the San Joaquin River near Stockton's intake, the EIR presents only exceedance probability plots of "15-minute absolute velocity." See, for example, Figure 8 [See ATT 1 Exhibit 10], which presents a cumulative probability distribution for the "15-minute absolute velocity" for the month of June (i.e., all Junes within the 95-year simulation period). Figure 8 indicates that the "15-minute absolute velocity" varies from about 0 fps to about +0.6 fps, and that the lines for the six model scenarios (existing condition plus project alternatives) fall nearly on top of each other (i.e., are virtually indistinguishable). Figure 8 does not indicate the "sloshing" nature of flows at this location within the Delta, or the fact that daily average absolute velocities are far lower than the range of the "15-minute absolute velocity" values. Figure 5 to Figure 7 clearly indicate that low channel velocities occur approximately four times per day near Stockton's intake (i.e., as the sloshing flow changes direction), and that daily average velocities can be characterized as "low" relative to peak 15-minute velocities. Because the 15-minute channel velocity indicates strong sloshing, it is expected that the	

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	velocity distribution will not change significantly as a result of implementation of the proposed project. (After all, the proposed project will not change tidal forcing, which is driven by gravitational forces exerted on the earth by the sun and the moon.) For this reason, DWR's analysis of the frequency of low channel velocities is not meaningful in the context of hydrodynamics in the Delta or the potential for the development of algal blooms. While the net channel velocity might be meaningful in the context of assessing project impacts to algal bloom formation (because it is a measure of the net movement of water through the channels of the Delta, which is related to residence time), the "15-minute absolute velocity" is not relevant (because it demonstrates only that the Delta is a strongly tidal system). Indeed, it is well established that algal blooms form within the Delta under current conditions, particularly in channels with less flushing (i.e., where tidally or daily averaged velocities are low), even though those channels currently experience "15-minute absolute velocity" values identical or similar to those modeled using DSM2 and depicted in the EIR. However, DWR did not present information regarding either tidally- or daily-averaged net velocities, and such information cannot be derived or inferred from the velocity information presented in the EIR. Thus, DWR's analysis of 15-minute absolute velocity is irrelevant to the formation of HABs in the Delta. DWR should remove its analysis of 15-minute velocity and remove channel velocity as an indicator of the probability of harmful algal blooms. Because the Draft EIR analysis is based on irrelevant information, the Draft EIR's impact determinations that rely on that information are not reliable or	

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	suitable for informed decision making. The Draft EIR impact analysis should be revised to reconsider the Project's potential to increase harmful algal blooms in light of relevant information.	
530-75	[ATT 1, Exhibit 7: 15-Minute flow velocity and daily average flow velocity near Stockton's intake during water year 1987.]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-76	[ATT 1, Exhibit 8: 15-Minute flow velocity and daily average flow velocity near Stockton's intake for the month of June 1987.]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-77	[ATT 1, Exhibit 9: 15-Minute flow velocity and daily average flow velocity near Stockton's intake from June 11-17, 1987.]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-78	[ATT 1, Exhibit 10: Figure 9E-2-8-1 from EIR page 9E-79.]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-79	[ATT 1:] 5. DWR should evaluate bromide concentrations at Stockton's intake using best available information The City [Ciy of Stockton] is concerned about the potential for increasing bromide concentrations at its drinking water intake, as increased bromide concentrations correspond to higher levels of disinfection byproducts. In the Draft EIR, DWR calculated the bromide concentration at multiple locations within the Delta using two different approaches: a mass-balance method and a regression method.^22 [Footnote 22: Draft EIR, Appendix 9D, at pp. 9D-1 to 9D-2.] At San Joaquin River at Empire Tract location, which is near the City's intake, DWR used the mass-balance method to estimate bromide concentrations.	The equation used to convert DSM2-modeled electrical conductivity (EC) output to chloride then bromide concentrations, as outlined in this comment and described in detail in Appendix 9D, Bromide, was the best available tool at the time the Draft EIR was prepared. The data offered by the commenter was collected after the Draft EIR was published, and over a short timeframe (i.e., 4 months). Bromide concentrations representing the San Joaquin River, on which the City of Stockton's intake is located, were varied by month for the entire 94-year simulation for the analysis contained in the Draft EIR. Hence, variability in bromide concentrations was represented in the modeling. Please see Common Response 10, Surface Water Quality and Groundwater Resources, regarding averaging of modeling output and use of these results in the impact assessment.

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	In the mass-balance method, DWR used the DSM2 model to simulate average monthly source water flow fractions; DWR then used the monthly average bromide concentrations estimated for each of the six source water inflows to compute the estimated bromide concentration in the San Joaquin River at Empire Tract. As described in Section 9D.3, Appendix 9D, a constant bromide concentration for the eastside tributaries and monthly values for Sacramento River and Delta agricultural return flow were used. For San Joaquin River inflow and San Francisco Bay water, bromide concentrations were estimated based on regression equations (Equations 1 and 2)^23 [Footnote 23: Draft EIR, Appendix 9D, at p. 9D-4.] that convert EC to chloride concentration, followed by a linear conversion equation (Equation 3)^24 [Footnote 24: Draft EIR, Appendix 9D, at p. 9D-2.] that converts chloride to bromide concentration. Equation 1 San Joaquin River at Vernalis Cl = 0.1845 * EC at Vernalis - 23 Equation 2 San Francisco Bay at Martinez Cl = 0.285 * EC at Martinez - 50 Equation 3 Br = 0.0035 ∗ Cl Equation 3 was developed based on the relationship between chloride and bromide in samples collected at Mallard Slough, where chloride and bromide from San Francisco Bay (i.e., largely seawater) dominate. DWR presented calculated bromide concentrations in the form of long-term monthly average concentrations^25 [Footnote 25: Draft EIR, Appendix 9D, at p. 9D-128.] (see the example in Figure 9 [See ATT1, Exhibit 11]) and for different water year	

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	types.^26 [Footnote 26: Draft EIR, Appendix 9D, at pp. 9D-128 to 9D-130.] As with salinity (see Comment 1), information on bromide concentrations in the form of long-term averages is not useful for the City to determine impacts to its drinking water intake. In order to better understand the relationship between chloride and bromide concentrations, the City has analyzed samples collected at the City's drinking water intake between July 2022 and October 2022 for chloride and bromine. Our preliminary analysis indicates that the relationship between concentrations of these constituents is not fixed. The City is providing its dataset to DWR and requests additional conversation regarding how to best evaluate the potential impacts of the project on bromide concentrations at the City's intake. The City also requests that DWR provide information needed to evaluate the impacts of bromide concentrations on the hourly operations of the City's intake.	
530-80	[ATT 1, Exhibit 11: Figure 9D-6-1 Long-Term Monthly Average Bromide concentration at San Joaquin River at Empire Tract.]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-81	[ATT 1:] 6. DWR should evaluate the impacts of the proposed project on the City's wastewater discharge operations and NPDES permit As noted in Comment 1 [See comments 53-62], changes in Delta water quality have the potential to impact the City's discharge of treated wastewater at its discharge location at San Joaquin River immediately downstream of the Highway 4 Bridge in Southwest Stockton. Specifically, increases in salinity, increases in the frequency of harmful algal blooms, and changes in the concentrations of other water quality	Please see response to comment 530-17 and responses to comments 530-54 through 530-62 regarding the impact of the project on the City's ability to discharge treated wastewater and the ability of the City to meet wastewater discharge permit requirements, given there would be no substantial degradation of receiving waters as a result of operations of the project.

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	constituents regulated in the City's NPDES permit have the potential to result in increasingly stringent permit requirements, potentially leading to the need to construct new treatment facilities. DWR should evaluate the impacts of the proposed project and its alternatives, for both the existing condition and future conditions, within the EIR for the DCP project.	
530-82	[ATT 1:] 7. Comments regarding DWR's evaluation of climate change The Draft EIR evaluated several parameters that are expected to change with climate change, including precipitation patterns, temperature, and sea level rise. Because of its direct impact on salinity, water quality, and residence time within the Delta, our evaluation focused primarily on sea level rise. Stockton will be impacted by sea level rise, which will increase salinity within the Delta, potentially including at the City's drinking water intake. Water quality within the Delta will also be impacted by sea level rise, which in turn is expected to impact the NPDES permit requirements applicable to the City's wastewater treatment discharges. Because Stockton's NPDES permit is renewed approximately every five years, it is important to evaluate impacts to water quality at intervals. Chapter 5A, Section B [Footnote 27: Draft EIR, Appendix 5A, Section B.6.2, at p. B-49.] states that, "Sea level rise assumptions for the project are based on the California Ocean Protection Council's (OPC) guidance updated in 2018, the State of California Sea-Level Rise Guidance (Guidance)." [Footnote 28: State of California Sea-Level Rise Guidance (2018 update), available at https://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20	The commenter has provided a statement of opinion regarding climate change and sea-level rise within the Delta. The comment does not raise a significant environmental issue relating to the proposed project or address the adequacy, accuracy, or completeness of the EIR; therefore, no further response is required. DWR has reviewed all comments and will consider all comments in its decision-making process. The commenter is directed to the Sea Level Rise section of Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, which describes the assumptions used to frame the analysis of sea level rise scenarios presented in the EIR. Appendix 30A, CalSim 3 Results Sensitivity to 2040 Climate Change and Sea Level Projections, included a sensitivity analysis for 0.5-ft sea level rise.

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	180314/Item3_Exhibit-A_OPC_SLR_Guidancerd3.pdf] OPC (2018) presented both probabilistic sea level rise projections (framework of Kopp et al. 2014 [Footnote 29: Kopp, Robert E., et al. (2014), Probabilistic 21st and 22nd- sea-level projections at a global network of tidegauge sites. Earth's future 2.8: 383-406.]) and scenario-based sea level rise projections (H++ extreme sea-level rise scenario in the Fourth National Climate Assessment, developed by Sweet et al. 2017 [Footnote 30: Sweet, William V., et al. (2017), Global and regional sea level rise scenarios for the United States (No. CO-OPS 083).]). The Working Group of OPC's Science Advisory Team (OPC-SAT) concluded that the scenario-based (H++ extreme sea-level rise scenario) needs to be considered alongside the probabilistic sea-level rise projections. Kopp et al. (2014) predicted the sea level rise based on the comprehensive probability distributions for the several climate scenarios. However, Sweet et al. (2017) maintained a scenario-based approach but drew upon the Kopp et al. (2014) framework to localize projections and to discuss the likelihood of scenarios under different emissions pathways. Sweet et al. (2017) also developed an "extreme" scenario, which assumed rapid ice sheet loss in the Antarctic Ice Sheet in both local and global sea-level rise projections. At this point, the probability of the H++ scenario occurrence is not known, and it is not clear when the world may shift to the H++ trajectory (OPC, 2018). Table 3 [See ATT1 Exhibit 12] presents the projected sea level rise (in feet) based on probabilistic projections as well as the H++ scenario for San Francisco. [Footnote 31: State of California Sea-Level Rise Guidance (2018 update), at p. 18.] DWR noted that,	

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	"Guidance recommends considerations of extreme H++ scenario for projects with a lifespan beyond 2050 that have a low tolerance for risk or are critical assets. Therefore, H++ sea level rise projections were used for the climate change analysis. The Delta Conveyance Project, if approved, is expected to become operational around 2040. Therefore, for the Draft EIR, an integrated operational analysis of the project was conducted for the year 2040 (climate period 2026-2055). The H++ sea level rise projection at 2040 is 1.8 feet. Additionally, a sensitivity analysis was conducted for the Draft EIR for the No Project Alternative and proposed project for a sea level rise of 0.5 feet by 2040, corresponding to a 66% probability of occurrence… For the design of project facilities, the H++ sea level rise projection of 10.2 feet at year 2100 was assumed." [Footnote 32: Draft EIR, Appendix 5A, Section B, at p. B-50.] Table 3 indicates that there is a 66% probability that sea level rise in 2040 will be between 0.5-0.8 ft. As noted in Table 4 [See ATT1 Exhibit 13], for the year 2040, a sea level rise of 1.3 feet has a 0.5% probability (i.e., a 1-in-200 likelihood). The probability of the H++ scenario, with 1.8 ft of sea level rise in 2040, is unquantified but is significantly less than 0.5%.	
530-83	[ATT 1, Exhibit 12: Projected Sea Level Rise for San Francisco]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-84	[ATT 1, Exhibit 13: Table 5A-B-9 at pg. B-40 of Appendix 5A]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.

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530-85	[ATT 1:] Comment 7.1 DWR conducted CalSim 3 sensitivity modeling for multiple sea level rise scenarios, but did not model conditions in the Delta for the same scenarios As noted above, there is a 66% likelihood of 0.5-0.8 ft of sea level rise in 2040 and an 0.5% probability of 1.3 ft of sea level rise in 2040. These represent reasonably foreseeable conditions, whereas the probability of 1.8 ft of sea level rise in 2040 is so small that it is unquantified. DWR performed CalSim3 (and SCHISM) model simulations for 0.5 ft of sea level rise and for two alternative versions of 1.8 ft of sea level rise. [Footnote 33: Email exchange between Ms. Kathryn Icelow of DWR and Exponent staff on September 23, 2022.] DWR did not perform Calsim 3 simulations for 1.3 ft of sea level rise. As noted previously, Calsim 3 model output was used as input to the DSM2 model. However, DWR performed DSM2 model simulations for only 1.8 ft of sea level rise. DWR did not simulate hydrodynamics or water quality within the Delta for 0.5 ft of sea level rise in 2040, and DWR did not use Calsim 3 or DSM2 to evaluate conditions with 1.3 feet of sea level rise. In our opinion, it is important that DWR evaluate the impacts of the proposed project for a reasonably foreseeable change in sea level, rather than only an extreme scenario that is so unlikely that its probability is not quantified. Because DWR used Calsim 3 to simulate 0.5 ft of sea level rise, it appears that DWR has the input data needed to perform DSM2 simulations for this condition but elected not to do so. Simulating both a no-project and project alternative water quality conditions with the reasonably foreseeable 0.5 ft of sea level rise would allow the City to evaluate the impacts of the proposed DCP project under reasonably foreseeable conditions.	The Sea Level Rise section of Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, describes the assumptions used to frame the analysis of sea level rise scenarios presented in the EIR. The sections Sea Level Rise Assumptions and Sensitivity Analysis Results of Appendix 30A, CalSim 3 Results Sensitivity to 2040 Climate Change and Sea Level Projections, describe these assumptions with respect to the results of a sensitivity analysis that compared the No Project Alternative 2040 with Alternative 5 using three scenarios as illustrated in multiple figures: beginning with the figure titled Shasta End-of-Month Storage (S_SHSTA), Exceedance Probability for Monthly Average End-of-Month Storage (thousand acre-feet) for May, No Project Alternative and Alternative 5 (2040) and ending with the figure titled Rock Slough Salinity (RS_EC_MONTH), Monthly Average EC (UMHOS/CM), No Project Alternative and Alternative 5 (2040). The EIR evaluates Delta Conveyance Project incremental impacts under both 1.8-ft sea level rise and 0.5-ft sea level rise projections using CalSim 3 as shown in Appendix 30A. Given the similarities in the CalSim 3 results for both the 1.8-ft and 0.5-ft sea level rise scenarios, it was determined that the DSM2 simulation of 0.5 ft was not required.

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530-86	[ATT 1:] Comment 7.2 In choosing the H++ model scenario with 1.8 feet of sea level rise, DWR chose an extremely unlikely scenario that generated unexplained results and that may mask the likely impacts of the proposed project. As noted in Comment 7.1 [See comment 85], DWR elected to simulate hydrodynamics and water quality within the Delta for 1.8 ft of sea level rise, but DWR did not simulate Delta conditions for lower (more likely) values of sea level rise. Figure 10 [See ATT1 Exhibit 14] below shows the exceedance probabilities for electrical conductivity (a measure of salinity) in the Sacramento River at Emmaton for the existing no-project condition (Table 9G-1-1-1, top) and for the 2040 no-project condition (Table 9L.-6-1-1-1, bottom). [Footnote 34: Draft EIR, Table 9G-1-1-1 was reproduced from p. 9G-9 of Appendix 9G. Table 9L.6-1-1-1 was reproduced from p. 9L6-4 of Appendix 9L.] Figure 10 indicates that salinities are simulated to increase significantly at this location in most months of most water year types as a result of sea level rise; both increases in salinity and absolute values of salinity are greatest in the summer and fall months.	The Sea Level Rise section of Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, describes the assumptions used to frame the analysis of sea level rise scenarios presented in the EIR. The sections Sea Level Rise Assumptions and Sensitivity Analysis Results of Appendix 30A, CalSim 3 Results Sensitivity to 2040 Climate Change and Sea Level Projections, describe these assumptions with respect to the results of a sensitivity analysis that compared the No Project Alternative 2040 with Alternative 5 using three scenarios as illustrated in multiple figures: beginning with figure titled Shasta End-of-Month Storage (S_SHSTA), Exceedance Probability for Monthly Average End-of-Month Storage (thousand acre-feet) for May, No Project Alternative and Alternative 5 (2040) and ending with Figure titled, Rock Slough Salinity (RS_EC_MONTH), Monthly Average EC (UMHOS/CM), No Project Alternative and Alternative 5 (2040). The commenter alleges without any evidence that the climate change assumptions used in the Delta Conveyance Project EIR somehow are masking the potential impacts. The EIR evaluates Delta Conveyance Project incremental impacts under both 1.8-ft sea level rise and 0.5-ft sea level rise projections using CalSim 3 as shown in Appendix 30A. Given the similarities in the CalSim 3 results for both the 1.8-ft and 0.5-ft sea level rise scenarios, it was determined that the DSM2 simulation of 0.5 ft was not required. The figure and table referenced in this comment were reproduced from the Draft EIR. The commenter has provided a statement of opinion regarding the presentation of data and offers their interpretation of this data. However, the comment does not provide new information, raise a significant environmental issue relating to the proposed project or address the adequacy, accuracy, or completeness of the EIR; therefore, no further response is required. DWR has reviewed all comments and will consider all comments in its decision-making process.

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530-87	[ATT 1, Exhibit 14: Monthly average electrical conductivity in the Sacramento River at Emmaton for the No Project, Existing Condition Alternative and for the No Project, 2040 Alternative.]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-88	[ATT 1:] The Draft EIR also includes simulation results for EC [electrical conductivity] in the San Joaquin River at Jersey Point for the No Project Condition. These data are reproduced in Figure 11 [ATT 1, Exhibit 15], which shows monthly average EC in San Joaquin River at Jersey Point for the existing no-project condition (Table 9G-5-1-1, top) and for the 2040 no-project condition with 1.8 ft of sea level rise (Table 9L.-6-5-1-1, bottom). [Footnote 35: Draft EIR, Table 9G-5-1-1 was reproduced from p. 9G-33 of Appendix 9G. Table 9L.6-5-1-1 was reproduced from p. 9L.6-28 of Appendix 9L.] Curiously, the data in Figure 11 indicate that EC in the San Joaquin River at Jersey Point is generally lower (i.e., fresher) in the months of May, June, July, and August with 1.8 ft of sea level rise than in the existing condition with no sea level rise. Because Jersey Point is located in the western Delta, it is prone to saltwater intrusion from the Bay. Saltwater from the Bay should enter the Delta in larger quantities with sea level rise than without it; the apparent freshening at this location is contrary to results for the Sacramento River at Emmaton, which is nearby and which shows higher salinity as a result of 1.8 ft of sea level rise. The reason for the apparent freshening of water in the San Joaquin River at Jersey Point during the dry months as a result of sea level rise is unclear [Footnote 36: As discussed in Comment 7.3, this apparent error may be related to either the DSM2 boundary condition for EC at Martinez or to the adjusted dispersion coefficients used in the DSM2 model.], and should be checked and discussed by DWR. Because the change in background salinity caused by sea level	The modeled lower electrical conductivity (EC) levels for the San Joaquin River at Jersey Point under the No Project Alternative (at 2040) relative to existing conditions (at 2020) are due to the operational response of the Central Valley Project (CVP) and State Water Project (SWP) to the combination of climate change hydrology and sea level rise. The influence of sea level rise will be greatest in the Sacramento River at Emmaton, hence the higher EC under the No Project Alternative relative to existing conditions. As such, Emmaton becomes the control point for CVP and SWP operations under the No Project Alternative. Delta outflow is higher, as shown in Chapter 6, Water Supply, in the table titled Summary of Annual Delta Outflow and Exports October–September under the No Project Alternative (2040 Hydrology) as Compared to Existing Conditions (2020 Hydrology). Concurrently, CVP and SWP Delta exports are lower under the No Project Alternative, as shown in the same table. The combination of these factors leads to EC in the Sacramento River at Emmaton being higher under the No Project Alternative while the San Joaquin River at Jersey Point is lower, relative to existing conditions.

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	rise at two relatively close locations in the western Delta is inconsistent (see Figures 10 [ATT 1, Exhibit 14] and 11), it is difficult to understand how Delta water quality will change as a result of sea level rise. Likewise, it is difficult to understand the impact of the proposed project under the sea level rise scenario. Further, as noted above, DWR elected to simulate water quality within the Delta for a sea level rise scenario of 1.8 ft, which has a probability of occurrence that could not be quantified but is much less than 0.5%. This scenario does not represent a reasonably foreseeable condition and results in larger changes in background salinity than would occur for more probable levels of sea level rise, which also makes it difficult to understand the impact of the proposed project for future scenarios.	
530-89	[ATT 1, Exhibit 15: Monthly average electrical conductivity in the San Joaquin River at Jersey Point for the No Project, Existing Condition Alternative and for the No Project, 2040 Alternative.]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-90	[ATT 1:] Comment 7.3 DWR's methodology for modeling salinity for scenarios with sea level rise is unclear. DWR's DSM2 model, which simulates hydrodynamics and water quality within the Delta, was calibrated by comparing simulated water levels and salinity within the Delta to measured, historical values. Because future sea level rise has not yet occurred and observations of it do not yet exist, it is not possible to use the same calibration methodology for future conditions. To adjust the DSM2 model to simulate sea level rise, DWR simulated sea level rise conditions using SCHISM, a 3-D model that includes the Delta, San Francisco	Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, provides information on how the SCHISM assessment was conducted for the project. The SCHISM assessment acknowledges the vulnerability of the central and western Delta to salinity intrusion caused by sea level rise, and additional water may be required to meet current salinity requirements. In addition, the assessments bracketing approach of 1.8 to 10.2 feet of sea level rise confirmed that the proposed north Delta diversion intakes would not be vulnerable to salinity intrusions. DWR believes the SCHISM assessment is an accurate estimate of potential changes in the salinity of the Delta. The Artificial Neural Network section of Appendix 5A, Section B indicates that the ANN is calibrated or trained on DSM2 results that may represent historical or future conditions using a full-

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	Bay, and a portion of the Pacific Ocean. Specifically, the SCHISM model was used to simulate 1.8 ft of sea level rise for a 689-day period extending from February 10, 2009, through December 31, 2010. [Footnote 37: Draft EIR, Appendix 5A, Section F.4.2. DWR also simulated increments of sea level rise up to and including 10.2 ft of sea level rise.] According to Appendix 5A, Section F, "Hydrodynamics and salinity from the 20-month period (5/1/2009 to 12/31/2010) were used to characterize salinity responses to sea level rise in the Delta and for use in lower-dimension model training." [Footnote 38: Draft EIR, Appendix 5A, Section F, at p. F-4.] However, DWR has not described how the results of the SCHISM model were used to "train" the DSM2 model. Further, the SCHISM simulation period includes the latter portion of WY2009 (classified as dry in the Sacramento River Basin and below normal in the San Joaquin River basin), WY 2010 (below normal/above normal), and the first three months of WY 2011 (wet/wet). [Footnote 39: https://cdec.water.ca.gov/reportapp/javareports?name=WSIHIST. Accessed on Oct 21, 2022.] The SCHISM simulation period did not include critically dry year types, when salinity intrusion in the Delta is greatest. Of note, California's Water Supply Strategy also notes that DWR estimates a 10% reduction in water supply by 2040. [Footnote 40: https://resources.ca.gov/-/media/CNRA-Website/Files/Initiatives/Water-Resilience/CA-Water-Supply-Strategy.pdf] Both the Draft EIR and our evaluation of DSM2 boundary conditions for a sea level rise of 1.8 ft shows that the stage (water level) at Martinez was uniformly shifted upward by 1.8 ft relative to the existing condition model runs. [Footnote 41:	circle analysis. The Sea Level Rise section of Appendix 5A, Section B describes the procedure used to adjust/train/corroborate DSM2 to recognize the hydrodynamic-salinity response in the Delta under sea level rise conditions. As described in the EIR, SCHISM 3-dimensional model was used to estimate the potential hydrodynamic and salinity conditions in the Bay-Delta and changes to hydrodynamic/salinity transport processes under the sea level rise conditions. The SCHISM results were used to corroborate DSM2 to ensure DSM2 is able to simulate the proper flow-salinity response in the Delta under sea level rise conditions. This corroborated DSM2 was then used to train the ANN. The time period simulated in SCHISM and used to corroborate DSM2 includes large variation of Delta inflows and exports. While it may not capture the full range of Delta inflows, it is sufficient duration to parameterize the hydrodynamics and salinity transport response to sea level rise in the DSM2. Regarding the sea level rise scenario modeled using DSM2, the modeled lower electrical conductivity (EC) levels for the San Joaquin River at Jersey Point under the No Project Alternative (at 2040) relative to existing conditions (at 2020) are due to the operational response of the Central Valley Project (CVP) and State Water Project (SWP) to the combination of climate change hydrology and sea level rise. The influence of sea level rise will be greatest in the Sacramento River at Emmaton, hence the higher EC under the No Project Alternative (at 2040) relative to existing conditions. As such, Emmaton becomes the control point for SWP and CVP operations under the No Project Alternative (at 2040). Delta outflow is higher, as shown in the Chapter 6, Water Supply, table titled Summary of Annual Delta Outflow and Exports October–September under the No Project

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	"For all the future 2040 studies, Martinez tide estimates for 2020 were adjusted by 1.8 feet (55 centimeters) to represent sea level rise (see Section C.6.2, Incorporating Sea Level Rise Effects in DSM2 Planning Simulations)." (EIR Appendix 5A, Section C.5.2, at p. C-12.)] The downstream boundary condition at Martinez for EC (a measure of salinity) was apparently derived by DWR using a regression equation developed by DWR from the SCHISM model results. [Footnote 42: Draft EIR, Appendix 5A, Section C.6.2, at p. C-14.] Although DWR stated, "DSM2 model results were corroborated for the assumed sea level rise using SCHISM results," [Footnote 43: Draft EIR, Appendix 5A, Section C.6.3, at p. C-15.] it is unclear how the "corroboration" was performed, as the details of this analysis do not appear to be described within the Draft EIR. Additionally, DWR adjusted dispersion coefficients and for seven channels in the Western Delta in DSM2 to improve the fit between DSM2 simulation results and SCHISM model results, but DWR has not described the adjusted dispersion coefficients within the Draft EIR. The Draft EIR also notes DWR used the SCHISM model results to update the artificial neural network (ANN) used by CalSim 3 to simulate salinity within the Delta. CalSim 3 is the main model used to simulate the operations of the proposed project. Although it is not clearly described, it appears that DWR (1) used SCHISM to simulate conditions within the Delta under various sea level rise scenarios for a 609-day period of 5/1/2009 to 12/31/ 2010; (2) used the SCHISM simulation results for this period to derive a regression equation describing EC at the DSM2 boundary at Martinez; (3) used this	Alternative (2040 Hydrology) as Compared to Existing Conditions (2020 Hydrology). Concurrently, SWP and CVP Delta exports are lower under the No Project Alternative, as shown in the same table. The combination of these factors leads to EC in the Sacramento River at Emmaton being higher under the No Project Alternative while the San Joaquin River at Jersey Point is lower, relative to existing conditions.

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	regression equation within DSM2 to simulate a longer time period (1923-2015) [Footnote 44: Draft EIR, Appendix 5A, Section C.6.3, at pp. C-15 to C-16.]; and then (4) used DSM2 model output to train the ANN used by CalSim 3 to simulate project operations for scenarios and alternatives involving future sea level rise. However, the details of this analysis are not provided. In summary, DWR has not provided data and information describing the analyses and assumptions that were made, or the impact of their modeling decisions on the ability of the models to simulate conditions under climate change. Further, as noted in Comment 7.2 [See comments 86-89], DWR's DSM2 model results describing salinity in portions of the western Delta, including in the San Joaquin River at Jersey Point, show a freshening of the Delta in the summer and fall months as a result of sea level rise, a result that is not credible without additional explanation. Finally, DWR failed to conduct SCHISM modeling for the full range of foreseeable conditions, and most notably did not simulate critically dry conditions. The failure to model the response of the Delta estuary during critically dry conditions carried through to both the DSM2 and CalSim 3 models, such that it is not clear that the system of models is capable of simulating hydrodynamics and salinity within the Delta, or the operation of the proposed project, over the range of conditions expected to occur with climate change in the future.	
530-91	[ATT 1:] Comment 7.4 DWR's analysis of in-Delta impacts in 2040 is incomplete, as DWR did not evaluate WQ impacts of levee overtopping or breaches	Chapter 7, Flood Protection, provides a detailed discussion of the existing conditions (baseline conditions), regulatory setting, and environmental impacts consistent with CEQA requirements. As illustrated in the table titled Comparison of Reference Years Used for Flood Protection Impact

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	As noted above, DWR used DSM2 to simulate hydrodynamics and water quality within the Delta for a model scenario involving 1.8 ft of sea level rise. As a result of sea level rise at the western boundary of the Delta, water levels within the Delta were higher than in the model runs describing the existing condition model scenarios. Figure 12 [See ATT1 Exhibit 16], which was created by Exponent using DWR's DSM2 results, shows the simulated water surface elevations for the scenario with 1.8 ft of sea level rise and for existing conditions, and the difference in water surface elevation between the two scenarios. As shown in Figure 12, the stage at Martinez is uniformly 1.8 ft higher for the sea level rise scenario than for existing conditions. The difference between stage at other locations varies a bit with the tidal cycles and ranges from about 1.2 ft at Freeport to 1.8 ft at Prisoner's Point to about 1.9 ft in Old River at Highway 4. Thus, as expected, both average and peak water surface elevations will be significantly higher throughout the Delta with 1.8 ft of sea level rise compared to existing conditions. However, DWR has not evaluated or disclosed the increased potential for levee failures and overtopping that would result from a significantly higher stage within the Delta, or the significant water quality changes that would occur under these circumstances. These effects necessarily affect the baseline conditions against which Project impacts must be assessed. Without accounting for these reasonably foreseeable future baseline conditions under the Draft EIR's assumed sea level rise scenario, DWR's evaluation of the Project impacts1.8 ft of sea level rise is deficient, including DWR's evaluation of water quality within the Delta and the operations of the proposed project that would occur under a levee failure scenario.	Analysis, the two impact statements developed for this chapter are consistent with CEQA Guidelines. No impacts on this topic were identified through the scoping process. Appendix 7A, Flood Protection 2040/2072 Analysis, also considered the effects of the project on flood protection provided by the levees in the vicinity of the project. The 2040 and 2072 assessment also concluded that the project would not adversely affect flood protection provided by Delta levees. While the commenter suggests that there may be a relationship between future sea level rise, potential levee failure, and future water quality impacts, this is speculative and not definable as a foreseeable action. As noted in Common Response 10, Surface Water Quality and Groundwater Resources, DSM2 is a calibrated and validated model which may be used to help assess an action's impact on delta water quality. However, as noted in Common Response 10, DSM2 is not considered predictive and as such does not attempt to forecast the future of the condition of Delta levees, including the location, extent, or duration of potential levee failures or overtopping. EIR Chapter 5, Surface Water, Appendix 5A, Modeling Technical Appendix, Section C, One Dimensional Delta Hydrodynamics and Water Quality Modeling Results, provides additional background information regarding DSM2 and how it was used to help assess environmental impacts. The analysis performed in the EIR indicates that Delta Conveyance Project operations do not increase the flooding risk or significantly impact water quality in the Delta compared to without project conditions under a range of hydrologic and sea level rise conditions.

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530-92	[ATT 1, Exhibit 16: Simulated water surface elevation at select locations in the Delta for the model scenario with 1.8 ft of sea level rise and for the existing conditions scenario.]	The commenter Is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-93	[ATT 1:] Comment 7.5 DWR's analysis of the proposed project for 2100 did not consider water quality impacts of sea level rise DWR simulated a scenario describing 10.2 ft of sea level rise in the year 2100, corresponding to the H++ climate scenario. Based on its modeling, DWR concluded that "intakes in the north Delta were found to not be vulnerable to future salinity intrusion conditions evaluated under the H++ scenario at year 2100." [Footnote 45: Draft EIR, Chapter 30, at p. 30-23.] (emphasis in original) DWR also noted that "the intake facilities are designed to accommodate water level elevations corresponding to 10.2 ft sea level rise and 200-year flood flows under climate change conditions projected for the end of the century." [Footnote 46: Draft EIR, Appendix 5A, Section F.2.] DWR's modeling of the scenario involving 10.2 ft of sea level rise was conducted using output from the SCHISM model for the time period between May 2009 and December 2010. [Footnote 47: Draft EIR, Appendix 5A, Section F.4.2, at p. F-4.] With 10.2 ft of sea level rise at the Golden Gate and at the western boundary of the Delta, water levels within the Delta would rise by a comparable amount. However, DWR assumed that the Delta levees would not overtop, even with 10.2 ft of sea level rise, such that water would be retained within the current channel areas and would not overflow into the land areas adjacent to the Delta channels. DWR referred to its approach as a "'glass wall' approach that assumes the existing levee elevations would keep up with increasing sea levels." [Footnote 48: Draft EIR, Appendix 5A, Section F.6, at p. F-11.] In	The Introduction section of Appendix 5A, Modeling Overview, Section F, Sea Level Rise and Delta Water Quality Modeling, describes how the SCHISM Sea Level Rise Study investigates how Delta water quality changes under seven sea level rise assumptions. The range of sea level rise increments considered span from 1.8 feet (ft) to 10.2 ft. The SCHISM assessment acknowledges the vulnerability of the central and western Delta to salinity intrusion caused by sea level rise, and additional water may be required to meet current salinity requirements. In addition, the assessment bracketing approach of 1.8 to 10.2 feet of sea level rise confirmed that the proposed north Delta diversion intakes would not be vulnerable to salinity intrusions. The SCHSIM assessment also included a scenario where the salinity intrusion was encouraged artificially to simulate a "worst case" condition with 10.2 feet sea level rise. It also included significant addition of tidal prism compared to the current bathymetry. Under all the scenarios evaluated using SCHISM, the salinity at the proposed intakes remained fresh. The commenter appears to disagree with the "glass wall" approach used to model sea level rise and provides three figures prepared by their consultant intended to support the comment that focuses on levees surrounding Bethel Island, a single feature in the Delta. However, the comment does not provide new information, raise a significant environmental issue relating to the proposed project, or address the adequacy, accuracy, or completeness of the EIR, and no further response is required. DWR has reviewed all comments and will consider all comments in its decision-making process.

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	effect, DWR assumed that the Delta channels have vertical walls that extend well above the current levee heights. However, the levees within the Delta have an elevation lower that the water level simulated with 10.2 ft of SLR. For example, Figure 13 [See ATT1 Exhibit 17] shows the elevation of Bethel Island. The levee surrounding Bethel Island has an elevation of about 17 ft. Figure 13 shows the existing condition (without sea level rise) model results for a two-week period in February 1998. To approximate the water surface elevations for a model scenario with 10.2 ft of sea level rise, we added 10.2 ft to the simulated stage for the existing condition; Figure 14 [See ATT1 Exhibit 18] shows that simulated water levels would overtop the Bethel Island levees during most of the high tides that occur during this two-week period. We also note that most of the levees within the Delta are un-engineered, earthen levees. [Footnote 49: https://news.berkeley.edu/2010/04/20/delta/] As such, they are designed to have freeboard, as overtopping of earthen levees causes catastrophic failure. Thus, the true measure of risk is not whether water levels within the Delta will exceed the height of the levees, but whether sufficient freeboard can be maintained to protect the structural integrity of the levees. Further, across the majority of the Delta, the land surface elevations of the Delta islands (i.e., the land surfaces inside the levees) are well below sea level (see Figure 15 [See ATT1 Exhibit 19]). [Footnote 50: USGS National Map 3DEP 1 meter Digital Elevation Models. Data available at: https://www.usgs.gov/3delevation-program] [Footnote 51: California Department of Fish and Game, 2011. Delta	

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	Vegetation and Land Use - 2011 [ds292]] Unless levees were raised significantly (which is not contemplated as part of the proposed project), 10.2 ft of sea level rise would greatly increase the risk of levee overtopping and/or failure, and large volumes of water would enter the Delta and fill the Delta islands, greatly increasing the volume of water within the Delta. Except during exceptionally wet outflow conditions, more saline Bay water would flow into the interior of the Delta, and water quality in the interior of Delta would be far different and frequently much more saline than simulated by DWR using the SCHISM model. Because DWR did not simulate the overtopping of levees within the Delta and the flow of water across the Delta landscape that would occur with this magnitude of sea level rise, it did not and cannot accurately estimate the future baseline water quality conditions that would result from 10.2 ft of sea level rise. As a result, DWR has not and cannot evaluate Project impacts, the project's ability to meet DWR's stated objectives for reliability and water quality benefits, or the structural or operational viability of the proposed intake facilities. Thus, even if proposed intakes were able to withstand 10.2 ft of sea level rise from an engineering point of view (i.e., if they were able to operate at these water levels), DWR has not evaluated whether or how often water quality at the proposed intakes would be suitable for diversion or disclosed how project operations would change (e.g., would the South Delta pumps be abandoned, and all SWP pumping occur at the North Delta Diversion?) and the impacts of such a reasonably foreseeable change. Indeed, DWR noted that "there remains uncertainty over the	

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	degree of salinity intrusion for a specific sea level rise assumption because many issues that affect model results were not addressed in the Study, e.g., levee failure, changes in water use, continued dredging of the ship channels, changing morphology, island flooding, and potential landscape level defenses." [Footnote 52: Draft EIR, Appendix 5A, Section F.2, at p. F-1 and F-2.] DWR's SCHISM modeling for sea level rise [Footnote 53: As noted above, DWR evaluated the project for increments of sea level rise ranging from 1.8 ft to 10.2 ft. DWR did not evaluate the potential for widespread levee overtopping or failure, or the consequent changes to hydrodynamics and water quality, for any of these scenarios.] has not considered the actual physical geometry of the Delta, instead assuming that water would remain within the Delta channels as if they had tall, vertical walls. For this reason, DWR's analysis of future conditions with sea level rise is flawed and unreliable and cannot be used to conclude that the proposed project would be able to operate with this level of sea level rise. For a project of the magnitude and importance of the DCP, it is vital and technically feasible to perform such an evaluation to support informed decision-making regarding the viability and performance of the project under reasonably foreseeable conditions.	
530-94	[ATT 1, Exhibit 17: Bethel Island elevation map]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-95	[ATT 1, Exhibit 18: Simulated stage near Bethel Island under existing condition, and estimated stage with 10.2 ft sea level rise]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.

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530-96	[ATT 1, Exhibit 19: Land surface elevations within the Delta]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-97	[ATT 1:] Comment 7.6 DWR's assumption of stationarity is flawed. As noted in the Draft EIR, "The inflow hydrology for the existing conditions model is based on assumptions of stationarity. However, while there has been no obvious trend in total water year runoff into the Sacramento and San Joaquin Rivers, there have been changes in the timing of that runoff. The fraction of snowmelt runoff between April and July relative to total year-round water runoff has declined over the past century (California Department of Water Resources 2016). Additionally, as the climate continues to warm it is expected to increase variability in precipitation." [Footnote 54: Draft EIR, Appendix 5A, Section B, at p. B-65.] (emphasis added) Stationarity has been defined as the assumption that "the statistical properties of hydrologic variables in future time periods will be similar to past time period." [Footnote 55: U.S. Army Corps of Engineering, Workshop on Nonstationarity, Hydrologic Frequency Analysis, and Water Management. See https://www.usace.army.mil/corpsclimate/Climate_Preparedness_and_Resilience/Hydrology_Support_Adaptation/nonstation_workshop/] However, this assumption is unwarranted, and scientific literature (as noted below) suggests DWR would be wise to consider and plan for hydrologic changes already underway as a result of climate change.	Please see Common Response 9, Hydrologic Modeling and Approach, regarding the use of best available tools and stationarity. As described in Common Response 9, the assumption of stationarity is based on the best science available to DWR. In addition, Common Response 9, addresses why DWR believes the hydrologic modeling approach developed for the project is the best available tool for assessing the environmental impacts of operating the project. While each CalSim 3 simulation represents a single point in time or stationarity, the Draft EIR included evaluation of Delta Conveyance Project impacts under multiple scenarios representing different current and future conditions.

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	DWR's climate analysis is flawed in two primary ways: first, DWR's hydrology analysis in the Draft EIR assumes that the hydrology observed over the simulation period of 1921-2015 is representative of the "existing condition," even though long-term changes in hydrology due to climate change are well underway, and even though a key rationale for the project is the ability to respond to hotter, drier conditions by diverting more river flow in winter months. Thus, DWR has assumed that the hydrology (rainfall, river flows, etc.) observed in the early years of the simulation period are equally likely to recur, without adjustment, as more recent years within the 2020 "existing condition" baseline used in the Draft EIR. Second, DWR has assumed that the 1921-2015 hydrologic sequence is likely to recur in the future (e.g., 2040), despite the changes underway due to climate change. Although DWR has adjusted river flows and other hydrologic variables to reflect expected changes in temperature (e.g., resulting in the loss of snowpack and higher river flows in the winter months, and lower flows in summer and fall months), these changes are imposed upon the same water years within the 1921-2015 simulation period. The relative ratio of wet years, critical years, etc., within the simulation period has not been adjusted. In other words, DWR uses a single, historical hydrologic period to represent both existing and future conditions. However, recent scientific research indicates that hydrologic patterns are shifting due to climate change. For example, Swain et al. (2018) found that, "Anthropogenic forcing is found to yield large twenty-first century increases in the frequency of wet extremes, including a more than threefold increase in sub-seasonal events	

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	comparable to California's 'Great Flood of 1862. Smaller but statistically robust increases in dry extremes are also apparent. As a consequence, a 25% to 100% increase in extreme dry-to-wet precipitation events is projected, despite only modest changes in mean precipitation. Such hydrological cycle intensification would seriously challenge California's existing water storage, conveyance and flood control infrastructure." [Footnote 56: Swain, D.L., B. Langenbrunner, J.D. Neelin, and A. Hall, 2018. Increasing precipitation volatility in twenty-first century California. Nature Climate Change 8, 427-433 (2018). Available at https://www.nature.com/articles/s41558-018-0140-y.] Swain et al. (2018) present figures indicating a marked increase in the frequency of extremely wet seasons and extremely dry seasons in the future relative to the preindustrial era (see Figure 16 [See ATT1 Exhibit 20]). Thus, while the simulation period of 1921-2015 included a mix of water year types corresponding to historically observed conditions, climate change is likely to increase both the number and frequency of critically dry and wet years. Because DWR has used a fixed observational period, the Draft EIR does not capture these larger shifts in hydrology.	
530-98	[ATT 1:] Regarding extremely wet events and the potential for levee overtopping or failure within the Delta, it is also important to note that Swain et al. (2018) report "a substantial increase in the projected risk of extreme precipitation events exceeding any that have occurred over the past century – meaning that such events would be unprecedented in California's modern era of extensive water infrastructure. Few of the dams, levees and canals that	Please see Common Response 9, Hydrologic Modeling and Approach, regarding modeled representation of CEQA baseline existing conditions, modeled representation of future conditions and climate change, and climate change assumptions as input into hydrologic model. In addition, Appendix 5A, Modeling Technical Appendix, Section A, Modeling Overview, provides a comprehensive discussion of model assumptions and limitations related to future climate change. Chapter 7, Flood Protection, provides a detailed discussion of the existing condition (baseline conditions), regulatory setting, and environmental

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	currently protect millions living in California's flood plains and facilitate the movement of water from Sierra Nevada watersheds to coastal cities have been tested by a deluge as severe as the extraordinary 1961-1862 storm sequence – a repeat of which would probably lead to considerable loss of life and economic damages approaching a trillion dollars. Our results suggest that such an event is more likely than not to occur at least once between 2017 and 2060, and that multiple occurrences are plausible by 2100 on a business-as-usual emissions trajectory. Therefore, recognizing that risks associated with hydroclimatic extremes may rise more rapidly than the gradual projected shift in regional mean precipitation might otherwise suggest will be a critical step in ensuring resilience amid a warming climate." [Footnote 57: Ibid.] However, the Draft EIR does not contemplate the impact of these changing hydrologic baselines on water quality within the Delta or on the operation of the proposed project. Nor does the Draft EIR analyze or disclose impacts associated with extreme wet weather events that are likely to occur over the next century. These reasonably foreseeable impacts have the potential to impact both the operation of the proposed project and to influence the future baseline conditions against which the project is evaluated. These impacts are both reasonably foreseeable and represent best available science, and they should be considered before proceeding with the construction of a water resources project of this magnitude and importance.	impacts consistent with CEQA requirements. As illustrated in the table titled Comparison of Reference Years Used for Flood Protection Impact Analysis, the two impact statements developed for this chapter are consistent with CEQA Guidelines. Appendix 7A, Flood Protection 2040/2072 Analysis, also considered the effects on the project on flood protection provided by the levees in the vicinity of the project. The 2040 and 2072 assessment also concluded that the project would not adversely affect flood protection provided by Delta levees. Chapter 9, Water Quality, provides a detailed discussion of the existing condition (baseline conditions), regulatory setting, and environmental impacts, including cumulative impacts of foreseeable projects and programs consistent with CEQA requirements.
530-99	[ATT 1, Exhibit 20: Change in frequency of extremely wet and extremely dry conditions]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.

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530-100	[ATT 1:] 8. DWR's Method of computing and presenting summary statistics is flawed Based upon inspection of the tables summarizing the statistical distributions of water quality parameters (e.g., Figures 1 and 2), it appears that DWR calculated statistical distributions for each scenario, then improperly calculated summary statistics describing the incremental change between scenarios as follows: Step 1: use DSM2 to simulate water quality constituent concentrations for each scenario (e.g., to compute EC in the Sacramento River at Emmaton) Step 2: compute monthly average constituent concentrations for each month in the 95-year simulation period (e.g., the average EC in the Sacramento River at Emmaton for every October in the period) Step 3: Compute summary statistics for each month (e.g., determine the exceedance probability [0.1%, 1%, 5%, etc.] for EC in the Sacramento River at Emmaton for all Octobers) (to generate tables such as Table 9G-1-1-1, shown in Figure 1) Step 4: Follow Steps 1-3 for each water quality constituent at each location to generate summary statistics for each for each scenario (e.g., to generate Table 9G-1-6-1 describing EC in the Sacramento River at Emmaton for Scenario 5) Step 5: Compute summary statistics for the difference in EC	This comment references tables in the appendices for boron (Appendix 9C, Boron), bromide (Appendix 9D, Bromide), chloride (Appendix 9F, Chloride), electrical conductivity (Appendix 9G, Electrical Conductivity), and organic carbon (Appendix 9I, Organic Carbon), in which the difference between specific percentile concentrations (i.e., 0.1%, 1%, 5%, etc.) under an alternative and existing conditions are calculated. This computation and presentation of modeling output in the appendices to Chapter 9, Water Quality, is correct for its intended use in interpreting modeling results and supporting the impact analysis in Chapter 9. The differences in the concentrations for various identified percentiles of the modeled range of values presented in these tables facilitate interpreting the probability exceedance plots that accompany the tables in the appendices, where differences at specific percentiles must be determined visually. The tables allow for seeing what the exact difference was at percentiles of 0.1%, 1%, 5%, 10%, 25%, 50%, 75%, and 99.9%.

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	between each scenario and the existing condition by subtracting the values within the distributions (e.g., subtract the 50% value for Scenario 5 from the 50% value for the existing condition) (e.g., subtract the 50% value for EC at Emmaton for October for existing conditions [1382] from the 50% value for EC at Emmaton for October for Scenario 5 [1640 mmhos/cm], to compute a 50% value for the difference between the scenarios of 258 mmhos/cm, indicating that the median increase in EC at Emmaton would be 258 mmhos/cm) However, this procedure is flawed, and it is meaningless to compute a median (50%) difference that is larger than all the other differences in the statistical distribution. Using the example shown in Figure 17 [See ATT 1 Exhibit 21] (reproduced from a portion of Figure 2), it is nonsensical to assert that 50% of the time, the increase in EC will be 258 mmhos/cm, but 75% of the time, the increase will be -8 mmhos/cm. In fact, probability distributions showing quantiles and other summary statistics must be monotonically increasing; see Figure 18 [See ATT 1 Exhibit 22]. Rather than following the flawed procedure outlined in Step 5, DWR should have computed the difference in EC at Emmaton (Scenario 5 EC – existing condition EC) for each month in the simulation period, then should have computed the summary statistical distribution from the 95 values for each month. In other words, DWR should have computed the monthly average EC for Scenario 5 for October 1923 and subtracted the monthly average EC for the existing condition for October 1923, then repeated for all other months, and finally computed the summary statistical distribution from the monthly difference	

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	values. DWR should adjust the tables and figures in the Draft EIR to fix this statistical error, in order to provide summary information that accurately reflects the anticipated effects of the proposed project.	
530-101	[ATT 1, Exhibit 21: Difference in Exceedance Probabilities for Monthly Average Electrical Conductivity…Alternative 5 minus Existing Conditions.]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-102	[ATT 1, Exhibit 22: Example of an exceedance probability curve, with values that increase monotonically as a function of probability.]	The commenter is providing this exhibit in support of their comments. Those comments are addressed in these responses to the commenter's letter.
530-103	[Att 1:] 9. The Draft EIR is lengthy and difficult to review, and our comments are not complete. As detailed in the citations throughout these comments, the Draft EIR is comprised of multiple chapters, many of which have multiple appendices. Analyzing and understanding the operations and potential impacts of the proposed project involved locating information found in many different places throughout the EIR documents. In many cases and as detailed in Comment 1 [See Comments 53-62], we were unable to find the information needed to evaluate the impacts of the proposed project at the City's [City of Stockton's] facilities, and we needed to review modeling files provided by DWR. Although the comment period for the Draft EIR was extended, we were unable to complete our review of the impacts of the proposed project because of these factors. For example, our review of model results focused on the no-project conditions (2020 and 2040) and Alternative 5; we were unable to review	Please see response to comment 530-31 regarding the length and complexity of the EIR and the public review period of the EIR. As described in that response, Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, discusses the length and complexity of the EIR and the ways in which DWR simplified and summarized information within chapters and across the EIR. As described in that response, DWR provided a lengthy extended public review period and provided information requested by reviewers in a timely manner.

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	model results for other project alternatives. We anticipate having additional comments on additional issues as we continue to review and evaluate the information contained in the Draft EIR and in the modeling results.	
530-104	[Attachment 2: Curriculum Vitae of Dr. Susan Paulsen, Ph.D., P.E.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter. DWR has reviewed all comments and will consider all comments in its decision-making process.
531-1	The Sacramento Municipal Utility District (SMUD) appreciates the opportunity to provide comments on the Draft Environmental Impact Report (DEIR) for the Delta Conveyance Project (Project). SMUD is the primary energy provider for Sacramento County and a portion of the proposed Project area. SMUD's vision is to empower our customers with solutions and options that increase energy efficiency, protect the environment, reduce global warming, and lower the cost to serve our region. As a Responsible Agency, SMUD aims to ensure that the proposed Project limits the potential for significant environmental effects on SMUD facilities, employees, and customers where feasible.	This information describes the structure of the comment letter, organization of the commenter, and other general introductory text. It is not a comment on the contents of the EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.
531-2	It is our desire that the DEIR will acknowledge any Project impacts related to the following: Overhead and or underground transmission and distribution line easements. Please view the following links on smud.org for more information regarding transmission encroachment: https://www.smud.org/en/Business-Solutions-and-Rebates/Design- and-Construction-Services https://www.smud.org/en/Corporate/Do-Business-with-SMUD/Land- Use/Transmission-Right-of-Way Utility line routing	Overhead and underground electric and SCADA distribution is described in Chapter 3, Description of the Proposed Project and Alternatives, and illustrated in the Chapter 3 mapbooks associated with each of the alternative alignments. Chapter 21, Public Services and Utilities, addresses potential conflicts with existing utility infrastructure. As stated in Chapter 21, DWR is consulting with utility providers regarding relocating or modifying existing electricity, natural gas, and telecommunications systems. Chapter 22, Energy, addresses potential environmental impacts associated with wasteful, inefficient, or unnecessary consumption of energy under Impact ENG-1. Chapter 22 also addresses cumulative impacts associated

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	Energy Efficiency Climate Change Cumulative impacts related to the need for increased electrical delivery, both temporary and long term The potential need to relocate and or remove any SMUD infrastructure that may be affected in or around the Project area	with the project's electric energy consumption. As described in Appendix 3B, Environmental Commitments and Best Management Practices, Environmental Commitment EC-17 would be implemented to generate solar power where feasible for operating conveyance and other project facilities. Chapter 23, Air Quality and Greenhouse Gases, evaluates the potential for the project to impact global climate change under Impact AQ-9. Chapter 30, Climate Change, evaluates how observed trends and projected future conditions demonstrate the need for the project as well as how climate change could influence the ability of the project to fulfill its intended purposes.
531-3	More specifically, SMUD [Sacramento Municipal Utility District] would like to have information on the load requirements for the project incorporated into the Draft EIR. Based on SMUD's discussions and previous experience with the cancelled CA WaterFix Project (see WaterFix EIR addendum submitted 1/23/2018) the Delta Conveyance Project will have a significant impact on SMUD's system requiring substantial new facilities to support it.	Chapter 22, Energy, addresses the potential environmental impacts associated with the energy needs of the project. Multiple tables in Chapter 22 provide assumptions regarding power loads for all project alternatives. DWR is committed to continuing to work with Sacramento Municipal Utility District (SMUD) regarding the Delta Conveyance Project. DWR is aware of SMUD's concerns and is committed to continuing coordination with SMUD to resolve outstanding concerns, as feasible. Please note that the Delta Conveyance Project is not the same project as the previously proposed California WaterFix Project and would have different power needs.
531-4	SMUD [Sacramento Municipal Utility District] looks forward to continuing to work with the DWR team to evaluate and identify the requirements to serve the Project and would like to be involved with discussing any other potential issues. We aim to be partners in the efficient and sustainable delivery of the proposed Project. Please ensure that the information included in this response is conveyed to the Project planners and the appropriate Project proponents.	DWR is committed to continuing to work with interested parties and the public. This information describes general concluding text. It is not a comment on the contents of the EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.

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	Environmental leadership is a core value of SMUD, and we look forward to collaborating further with you on this Project. Again, we appreciate the opportunity to provide input in response to this NOP [Notice of Preparation]. If you have any questions regarding this letter, please do not hesitate to contact me.	
532-1	On behalf of the Friant Water Authority (FWA), thank you for the opportunity to review and provide feedback on the Delta Conveyance Project (DCP) Draft Environmental Impact Report (DEIR) released on July 22, 2022.	This information describes general introductory text. It is not a comment on the contents of the EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.
532-2	FWA has reviewed the document and offers the following comments. FWA's members are Friant Division contractors of the Central Valley Project (CVP) who, while not directly reliant on Sacramento-San Joaquin Rivers Delta (Delta) exports, have an operational nexus to the Delta and thus an interest in any project or effort to improve Delta reliability, including the DCP. Friant Contractors all draw some of their water supplies from the San Joaquin River stored at Millerton Lake, which is an arrangement made possible by purchase and exchange agreements between Bureau of Reclamation (Reclamation) and the original riparian and pre-1914 water users of the San Joaquin River. Part of those agreements allow for these water users, the San Joaquin River Exchange Contractors (Exchange Contractors), to exercise a portion of their rights to the San Joaquin River when Sacramento River supplies cannot be delivered to them via Jones Pumping Plant and through the Delta-Mendota Canal. Thus, although Friant Contractors are not direct users of Sacramento River water, Delta operations can significantly affect Friant Division water supplies. As you can imagine, then, we were surprised by the DEIR's failure to evaluate the DCP's potential impact on Millerton Lake and other components of the Friant Division (see, e.g., pp. 5-14, 8-	Please refer to Common Response 3, Alternatives Development and Description, regarding Delta Conveyance Project proposed operations, which do not include modifications to State Water Project reservoir operations upstream of the project. DWR would not increase storage withdrawal for exports, except flood releases, even though the proposed Delta Conveyance Project may provide additional diversion capacity. The project would not include modifications to Central Valley Project reservoir operations upstream of the project because Reclamation is not a participant in the project. The hydrologic modeling simulating the proposed operations for the project is documented in Appendix 5A, Modeling Technical Appendix. Please see Appendix 5A for the modeling assumptions. Specifically, please see Appendix 5A Section B, regarding the assumptions regarding Coordinated Operations Agreement (COA) sharing for Alternatives 2a and 4a which are the only two alternatives under which wheeling of CVP water through the north Delta intakes is allowed. As described in Chapter 5, Surface Water, the modeling results show that long-term average monthly flow for the project alternatives would be similar to existing conditions. As described in Chapter 6, Water Supply, CVP Settlement Exchange Contractors do not show any change in average annual deliveries, as such, no effects to Friant Division water supplies are expected.

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	18). Failure to address a potentially significant environmental issue renders an EIR inadequate.	The Delta Conveyance EIR has been prepared in compliance with CEQA and evaluates the full range of potential impacts that may result from construction and operation of the proposed project and its alternatives.
532-3	FWA understands that one of the DCP's purposes is to provide additional capacity for the State Water Project (SWP) to export Sacramento River water from the Delta, and we support that objective. However, we have an overarching concern that the analysis in the DEIR neither fully captures the potential benefits of the project, nor the risk that the SWP may fail to meet its obligations under the CVP/SWP Coordinated Operations Agreement (COA) and to the CVP contractors (including ability to meet the Exchange Contract) with the DCP in place.	Please refer to response to comment 532-2 regarding project operations and the modeling assumptions used for the analysis in the EIR. Please also refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the project's purpose and objectives, including DWR's continuing commitment to operate the State Water Project as modified to include the Delta Conveyance Project in compliance with all regulatory requirements, including the Coordinated Operations Agreement (COA). Benefits of the project include enabling continued water deliveries and operational flexibility should a catastrophic event occur, flood control, and increased storm-water diversions. These benefits are discussed as applicable throughout the EIR. Please refer to Common Response 6, Climate Resilience and Adaptation, regarding the project's anticipated water supply reliability benefits.
532-4	Based on our review of the DEIR and its supporting analyses, it appears that the DEIR did not analyze the full range of potential operations with using storage in Lake Oroville, likely because the operations criteria and constraints in the modeling of the Preferred Alternative are actually inconsistent with how Oroville is currently operated for the benefit of the SWP.	Please refer to Common Response 3, Alternatives Development and Description, regarding the adequacy of project operations used for the purposes of the CEQA analysis. Please also refer to Common Response 3 regarding Delta Conveyance Project proposed operations, which do not include modifications to State Water Project reservoir operations upstream of the project. As described in the discussion of upstream reservoir operations and storage in the Common Response, DWR would not change operations of upstream reservoirs, including Oroville. This section also describes the consistency of the project modeling with the SWP policy related to operations of Lake Oroville. DWR would not increase storage withdrawal for exports, except flood releases, even though the proposed Delta Conveyance Project may provide additional diversion capacity. Please refer to Appendix 5A, Modeling Technical Appendix, regarding the

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		modeling assumptions used for the analysis in the EIR which adequately represent existing conditions operations as well as operations with the project.
532-5	Although the modeling of the Preferred Alternative includes additional releases and conveyance of stored water from Oroville, it still falls short of what is possible under the existing operations. For example, there is no alternative that evaluates the maximum potential use of combined North and South Delta diversions using Oroville storage.	Please see Common Response 9, Hydraulic Modeling and Approach, regarding comments about model assumptions, uncertainties, and limitations. Please also see Common Response 3, Alternatives Development and Description, regarding the alternatives development process and the range and scope of alternatives considered. Please also refer to response to comment 532-4 regarding project operations, which do not include modifications to State Water Project reservoir operations upstream of the project, and the modeling assumptions used for the analysis in the EIR.
532-6	In addition, the water supply analysis only evaluates up to the 2040 conditions when, at least, a sensitivity analysis should be performed for 2070 conditions, as was done for flood protection only.	Please refer to Appendix 4A, Consideration of 2070 Conditions, for a discussion regarding potential surface water and water supply conditions by 2070.
532-7	Additionally, the DEIR does not fully evaluate the additional water costs associated with increases in X2 and salinity requirements, including the frequency and conditions with which each effect could occur. To limit these risks and ensure the adequacy of the EIR, the modeling assumptions and operations constraints for analyzing the Preferred Alternative should be defined specifically and rendered enforceable.	Please refer to Common Response 3, Alternatives Development and Description, regarding how the project would be operated to shift diversions from the south Delta to the north Delta (during the summer and fall) or divert water in the north Delta during excess flow conditions while meeting regulatory requirements (during the winter and spring). DWR would operate the proposed project to the criteria described in Chapter 3, Description of the Proposed Project and Alternatives. Please also refer to Common Response 3 regarding Delta Conveyance Project proposed operations, which do not include modifications to State Water Project reservoir operations upstream of the project. DWR would not increase storage withdrawal for exports even though the proposed Delta Conveyance Project may provide additional diversion capacity. The project would not include modifications to Central Valley Project reservoir operations upstream of the project because Reclamation is not a participant in the project. As described in Appendix 5A, Modeling Technical Appendix, the hydrologic modeling conducted for the purposes of the EIR

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		analysis assumes that existing water quality requirements will continue to be met. Please see Common Response 7, Implementation Considerations, regarding project costs.
532-8	Thank you in advance for your consideration of our comments and perspective. If you have any questions, please contact me at[email address and phone number redacted].	This information describes general concluding text. It is not a comment on the contents of the EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.
536-1	The Sacramento Environmental Commission (SEC) is a joint County/City appointed commission chartered to advise the Sacramento County Board of Supervisors and the City Councils of Folsom, Galt, Isleton, Elk Grove and Sacramento on environmental issues facing our communities. We appreciate the opportunity to submit comments on the proposed Delta Tunnel Project Draft EIR.	This information describes the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.
536-2	The SEC has reviewed the Delta Tunnel Project DEIR and has identified a feature of the project and associated environmental risk that has been dismissed from detailed consideration. Specifically, the DEIR fails to identify and characterize the risk of discharging chemical "conditioners" used to transport tunnel material excavated and discharged during project construction. The SEC finds that the DEIR does not: • provide sufficient information about storing, using, and treating large volumes of chemical "conditioners" to be used during tunnel excavation, • does not discuss the risk to the environment associated with release of these	The analysis in the EIR does not support the assertion that soil conditioners were not identified or characterized. Please see Chapter 25, Hazards, Hazardous Materials, and Wildfire, the section titled Reusable Tunnel Material, for a discussion regarding how soil conditioners would be used, their purpose, the process for handling RTM, the soil testing conducted using soil samples mixed with representative soil conditioners, and analysis of potential impacts of soil conditions on the environment and construction personnel. The types of soil conditioners used would depend on soil type and soil consistency. Soil conditioners would be selected based on their ability to be used effectively for project purposes as well as being nontoxic and biodegradable. The latest conditioners biodegrade rapidly and are available in nonhazardous formulations. Risks to the environment from using soil conditioners are not anticipated. This is because during biodegradation, the

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	chemicals, • fails to adequately address the potential impact to the aquatic lifeforms, and • fails to provide appropriate mitigation to avoid or minimize potential significant impacts resulting from a discharge of these substances. The DEIR estimates that about 11 million cubic meters (14.4 million cubic yards) of tunnel material will be excavated during construction of the proposed project (Alternative 5) (DEIR page 3-118). Page 3-32 of the DEIR states, "Tunnel material (RTM) would be generated at launch shafts as the tunnel boring machines (TBMs) bore the tunnel. RTM is the soil removed by the TBM boring the tunnel, mixed with conditioners, and lifted to the ground surface through the launch shaft." Page 3-33, the DEIR states, "The contractor(s) would conduct chemical characterization of reusable tunnel material (RTM) and associated decant liquid prior to reuse or discharge, respectively, to determine whether it will meet requirements of the National Pollutant Discharge Elimination System and the Central Valley Regional Water Quality Control Board. All decant liquid would be collected and treated for direct on-site reuse or on-site storage to reduce water supply needs. If the amount of treated water flows from RTM decant, dewatering flows, and site runoff exceeds the on-site water demands and on-site storage, the treated flows would be discharged to adjacent waterbodies in accordance with the stormwater pollution prevention plans ….." Existing available literature indicates that "conditioners"	conditioner is converted to water, CO2, and biomass through the action of existing, naturally occurring microbes. The project would store, handle, and use soil conditioners the same as other commonly used substances and would comply with applicable regulations enforced by regulatory agencies and follow any guidelines listed on the Material Safety Data Sheet for the specific soil conditioner being used. The section titled Reusable Tunnel Material in Chapter 25 discusses the process used for analyzing potential impacts including estimates of anticipated RTM volumes. Risks associated with the use of soil conditioners are discussed and analyzed in Chapter 25 in the section titled Reusable Tunnel Material and in Chapter 3, Description of the Proposed Project and Alternatives, in the section titled Reusable Tunnel Material. Because the soil conditioners used would be nontoxic and biodegradable, their release would not have a significant impact on the environment. Please also see the section titled Reusable Tunnel Material in Chapter 3 for additional details regarding RTM handling and storage. RTM would be tested as it is removed from the tunnel, and if determined to be toxic or hazardous, it would be transported to a licensed disposal site, as described in Chapter 3. As the RTM is removed, it is placed in areas with impermeable liners to capture the decant liquid, which is treated before reuse on site. Please see Chapter 3, the section titled Disposal of Reusable Tunnel Material, for a description of the process that would be used to assess the usability of RTM and associated decant liquid including testing and treatment prior to use to ensure requirements of the National Pollutant Discharge Elimination System and the Central Valley Regional Water Quality Control Board are met. Discharges of decant liquid to waterbodies would be rare and are not expected to adversely impact aquatic species, as the soil additives used for tunneling would be biodegradable and nontoxic.

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	primarily consist of foaming agents and lubricants intended to facilitate the transportation of excavated tunnel materials as a slurry. The foaming agents are typically composed of anionic surfactants such as sodium lauryl ether sulphate (SLES) or sodium lauryl sulphate (SLS) (Caracciolo, 2017). When used in excavation, these surfactants are mixed in concentrations up to 3 liters/m3 with SLES/SLS composing up to 50% of the solution (Patrolecco, 2020). Based on the volume of material proposed to be excavated in the DEIR, it is estimated that up to 33 million liters of conditioners containing up to 16.5 million liters of surfactants may be used during tunnel construction. SLS/SLES and similar surfactants are classified as hazardous for their corrosive character and toxicity to aquatic life (Safety Data Sheet, 2021). Most surfactants are classified as skin irritants, while some can cause more serious damage (Mina, 2017). In raw form, SLS is categorized as moderately toxic to aquatic life. Other surfactants have been categorized as harmful to aquatic lifeforms. The level of toxicity is dependent on the concentration of SLS, the specific species exposed to discharges, water chemistry, and water temperature (Kikuchi 1978, Frietas, 2020, Shipley 2014, Cowan-Ellsberry, 2014, Lechuga, 2015). SLS is readily biodegradable under aerobic conditions but can persist in the environment for two to three months unless treated typical of an advanced wastewater treatment plant (Oggeri, 2014). The decomposed by-products of SLES/SLS achieved through advanced wastewater treatment are considered benign to the environment (Bondi, 2015). However,	Appropriate measures and mitigation are described in Chapter 25 to ensure the safety of project personnel and the environment, such as EC-2 and EC-3, regarding plans for hazardous materials management, spill prevention, and containment. Soil conditioners used for the project would not be classified as hazardous. The selection of soil conditioner would comply with project contract specifications which require that soil conditioners used be: • highly biodegradable • minimum toxicity and persistence • natural-based polymers only • no glycols or other low biodegradable solvents MSDS sheets along with independent testing will be used to verify that the product meets project specifications prior to use. The soil conditioner selected for the project will be classified as nonhazardous. Therefore, the volume of soil conditioner is not a significant factor in assessing safety.

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	high concentrations of surfactants can remain in the sewage sludge which may require controlled disposal.	
536-3	The SEC [Sacramento Environmental Commission] concludes the following points: The DEIR does not provide sufficient information to explain what chemical "conditioners" will be used during project excavation, what treatment processes are proposed to eliminate risk of impact to aquatic species, or under what conditions discharges to surface waters would be allowed. There is no information provided regarding the specific facilities, methods, or treatment processes to manage final disposal of these chemicals.	Please see response to comment 536-2 above regarding the process for soil conditioner use and where these conditioners are proposed for use. Also see Chapter 3, Description of the Proposed Project and Alternatives, the section titled Reusable Tunnel Material, and Chapter 25, Hazards, Hazardous Materials, and Wildfire, the section titled Reusable Tunnel Material, for details regarding the process for RTM handling, storage, and disposal.
536-4	The DEIR does not discuss the risk to the environment associated with the use of the chemical "conditioners" that could occur with either planned or accidental discharge. There is no acknowledgement of potential risk associated with managing the proposed large volumes of concentrated surfactants.	The EIR provides an impact analysis of risks associated with potential spills or discharges of hazardous materials. Although soil conditioners are not considered toxic, all personnel would use personal protective equipment per standard Cal/OSHA regulations, and the same BMPs and environmental commitments would apply to the project. All runoff from construction sites would be treated prior to storage, reuse, or disposal, as described in the Reusable Tunnel Material section of Chapter 3, Description of the Proposed Project and Alternatives. Please also see response to comment 536-2 regarding soil conditioners.
536-5	The DEIR fails to address the potential significant impact of discharging decant liquids to surface waters on aquatic species if not adequately treated. No information is provided about the effects of exposure of local aquatic species to moderately toxic or harmful surfactants used during project construction.	Please see response to comment 536-2 regarding testing and treatment to ensure requirements of the National Pollutant Discharge Elimination System and the Central Valley Regional Water Quality Control Board are met. As described in response to comment 536-2, discharges of decant liquid to waterbodies would be rare and are not expected to adversely impact aquatic species because the soil additives used for tunneling would be biodegradable and nontoxic.

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536-6	The DEIR only provides vague description of measures that may be used to mitigate impacts from discharges of tunnel decant to surface waters. Appendix 3B of the DEIR presents substantial information about managing stormwater runoff and pollutant discharges but no mention of measures to avoid or minimize impact of discharged chemical "conditioners".	As described in the response to comment 536-2, soil conditioners used would be nontoxic and biodegradable and not considered hazardous.
536-7	In conclusion, the SEC [Sacramento Environmental Commission] finds that the DEIR fails to adequately address the potential impact of managing, treating, and discharging large volumes of chemical conditioners on local aquatic lifeforms during the construction of the proposed project or alternatives. The DEIR has deferred the identification and commitment to implement appropriate mitigation until they are determined needed by the appropriate responsible agencies, including the Regional Water Quality Control Board and the Department of Fish and Wildlife.	Please see responses to comments 536-2 through 536-4 for responses that address the issues raised in this comment.
536-8	We [Sacramento Environmental Commission] are available to discuss these findings further if requested. We are providing the attached list of information sources referenced in this letter. References Mina, Laura 2-17 Dangerous Detergents? Health and Safety Answers for Surfactant Questions. Patrolecco, et al 2020. Environmental Fate and Effects of Foaming Agents Containing Sodium Lauryl Ether Sulphate in Soil Debris from Mechanized Tunneling. Water 2020, 12(8), 2074; https://doi.org/10.3390/w12082074 Lechuga, M. et al 2015. Acute toxicity of anionic and non-ionic surfactants to aquatic organisms. Journal of Ecotoxicology and Environmental Safety. Journal homepage: www.elsevier.com/locate/ecoenv Bondi, 2015. Human and Environmental Toxicity of Sodium	The commenter provided this list for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter. DWR has reviewed all comments and will consider all comments in its decision-making process.

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	Lauryl Sulfate (SLS): Evidence for Safe Use in Household Cleaning Products. Environmental Health Insights 2015:9 27–32 doi: 10.4137/EHI.S31765. Oggeri, 2014. Muck Classification: Raw Material or Waste in Tunneling Operation. Universitas Publishing House. Caracciolo, 2017. Characteristics and Environmental Fate of the Anionic Surfactant Sodium Lauryl Ether Sulphate (SLES) Used as the Main Component in Foaming Agents for Mechanized Tunneling. Environ Pollution. 2017 Jul; 226:94-103. doi: 10.1016/j.envpol.2017.04.008. Epub 2017 Apr 12. Safety Data Sheet 2021, Shipley, 2014. The Effects of Sodium Lauryl Sulfate on the Abundance of Producers and Grazers in Aquatic Communities Using Freshwater Microcosms. University Honors Program Theses. 27. https://digitalcommons.georgiasouthern.edu/honorstheses Cowan-Ellsberry, 2014. Environmental Safety of the Use of Major Surfactant classes in North America. Critical Reviews in Environmental Science and Technology, 44:17, 1893-1993, DOI: 10.1080/10739149.2013.803777 Kikuchi, 1978. Uptake, Distribution, and Elimination of Sodium Alkylbenzene Sulfonate and Sodium Alkyl Sulfate in Carp. Ecotoxicol Environ Saf. 1978 Sep; 2(2):115-27. doi: 10.1016/0147-6513(78)90002-7. Freitas, 2020. Toxic Impacts Induced by Sodium Lauryl Sulfate on Mytilus Galloprovincialis. Link to published version: https://doi.org/10.1016/j.cbpa.2020.110656]	