



Social Eco Education



[The Environmental Justice Coalition for Water](#)  
Water Justice for All

December 16, 2022

Department of Water Resources  
Attention Delta Conveyance Office  
P.O. Box 942836  
Sacramento, CA 94236

Submitted via email to: [deltaconveyancecomments@water.ca.gov](mailto:deltaconveyancecomments@water.ca.gov)

**RE: Comments on the Draft Environmental Impact Report for the Delta Conveyance Project**

Dear Department of Water Resources:

On behalf of Sierra Club California and our more than half a million members and supporters statewide, and our allies at the Environmental Justice Coalition for Water, California Indian Environmental Alliance (CIEA), Southern California Watershed Alliance, Desal Response Group, Social Eco Education, and SoCal 350 Climate Action, we write to offer our comments on the Draft Environmental Impact Report (DEIR) for the Delta Conveyance Project (DCP). Our organizations engaged in the comment process by submitting written comments, participating in the Virtual Public Hearings in September 2022, and encouraging our members to attend Virtual Public Hearings and provide written comments to the Department of Water Resources (DWR).

For decades, Sierra Club California has advocated for California to develop a water portfolio that promotes local and regional resiliency while protecting water for the environment. We believe California can meet its water needs and adapt to the impacts of climate change by pursuing projects that increase agricultural and urban conservation, sustainable groundwater storage and management, increased water reuse and recycling, and stormwater capture. Sierra Club California is committed to ensuring that any future water projects are in the best interest of the public, local communities, and the environment.

The DEIR for the Delta Conveyance Project falls short of the requirements set forth in the California Environmental Quality Act (CEQA), and other applicable law, to consider a reasonable range of

alternatives, disclose and mitigate significant environmental effects of the proposed project, and weigh the costs and benefits of the proposed project. The Delta Conveyance Project is a \$16 billion-plus investment that would perpetuate the status quo of California water management, prioritizing outdated infrastructure and unsustainable water diversions over regional solutions to promote water resilience in the age of climate change. **The DEIR must be revised to include additional analysis and recirculated for additional public comment.**

Specifically:

1. The DEIR must be written in a manner that is clear and accessible to the public, without relegating important analyses to appendices or splitting related issues between disconnected chapters.
2. The Purpose and Project Objectives must be revised to include the 2009 Delta Reform Act Policy of reducing reliance on Delta exports.
3. The DEIR must consider robust alternatives that provide water resiliency without compromising the health of the Delta ecosystem. The alternatives presented would have significant impacts to the communities and environment of the Delta and outside of it. In addition to a No Project Alternative, we propose a No Tunnel Alternative, which must include measures to improve conditions in the Delta.
4. The DEIR must be revised to address opposition from Delta Counties and Tribes that have objected to the project and its impacts. The DEIR must consider alternatives that avoid significant impacts, not limit the analysis to mitigation.
5. The Impact and Climate Change analysis must be revised to include modeling during the operational timeframe of the project. The analysis is based on historical water data, which is not representative of expected future scenarios under climate change, and only models impacts at 2040.
6. The Community Benefits Framework and measures that can be taken to improve the ecological health of the Delta should be considered and implemented under all alternatives, including a No Tunnel Alternative, not only as quid pro quo for the devastating impacts of tunnel construction.

Below we offer comments and recommendations on the DEIR.

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## **I. The DEIR should be written in a manner that is clear and accessible to the public**

CEQA provides that an EIR should be “organized and written in a manner that will be meaningful and useful to decision makers *and to the public*.”<sup>1</sup> The Draft EIR for the DCP is nearly 20,000 pages long, consistently makes references to large documents without proper citations, separates related sections and discussions, and makes cross-references to dispersed but related sections, again without adequate citations.<sup>2</sup> Together, these problems make a long, technical, and complex document unnecessarily difficult for anyone to read, understand, and provide meaningful feedback on.

Sections of the DEIR that are particularly inaccessible include: impacts to the Sandhill Cranes (Terrestrial Biological Resources), the Land Use scattered assessments, mitigations, cross-sectional assessments, references, and lack of proper referencing between related sections (Land Use), and many of the chapters (Soils, Water Quality, Air Quality and Greenhouse Gasses) are too jargon-heavy for members of the public, such as impacted community residents, to understand without specialized education. The Community Benefits Framework has many hypothetical situations that would require their own CEQA evaluations, which makes it difficult to respond to at this time.

## **II. Purpose and Project Objectives are too narrow**

The DEIR describes the purpose of the project to “restore and protect the reliability of State Water Project (SWP) water deliveries south of the Sacramento–San Joaquin Delta (Delta) consistent with the California Water Resilience Portfolio, in a cost-effective manner” (Ch. 2, p. 2). The objectives focus on the SWP’s ability to respond to sea level rise and climate change, minimize disruption of SWP operations from earthquakes in and around the Delta, improve water supply reliability, and provide operational flexibility (Ch. 1, p. 2).

At a threshold level, the DEIR does not define essential terms it uses to define the project and goals, including “restore” and “reliability” or “cost-effective,” nor does the DEIR provide any analysis to support the implication that the proposed project will achieve the goal specified. Given the use of the term “restore,” the DEIR should provide all the original design aspects related to the reliability of current SWP and Central Valley Project (CVP) facilities and operations and their current levels of performance reliability. The DEIR should also include information and comparison of the original design and current levels of operational flexibility to support assertions regarding that goal. Additionally, the DEIR has not defined the term “cost-effective,” nor has it provided any analysis of the cost-effectiveness of all project elements and alternatives. The DEIR should provide a thorough project-level cost-benefit analysis for each alternative, and update the estimates to account for inflation and project cost overruns. The DEIR must be revised to include definitions and additional analysis to compare and determine whether the project alternatives are able to meet the stated goals. Finally, the DEIR must be revised to provide clear

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<sup>1</sup> 13 PRC § 21003 (2021).

<sup>2</sup> CEQA guidelines state, “The EIR shall cite all documents used in its preparation including, where possible, the page and section number of any technical reports which were used as the basis for any statements in the EIR.” (CEQA guidelines Section 15148.)

usage of the terms “goals” and “objectives” and avoid any use of “purposes” and “needs” as they are easily confused with Federal NEPA/DEIS usages.

Second, the stated purpose and objectives are artificially narrow and preclude consideration of a robust no tunnel alternative that prioritizes investments in local and regional water projects to advance statewide water resiliency. The fundamental purpose is to “restore and protect the reliability of SWP deliveries” (Ch. 2, p. 2). At the outset, it precludes any alternatives that would promote local and regional water projects to meet the needs of SWP contractors. The DEIR admits “[i]n the absence of the Delta Conveyance Project, participating water agencies would seek to bolster water reliability through other projects. However other water reliability projects are related to making local supplies more reliable and not related to restoring and protecting SWP supplies” (Ch. 30, p. 23). The narrow purpose serves to omit consideration of alternatives to the DCP that would be able to meet the overarching objectives of addressing sea level rise and impacts of climate change, minimizing public health and safety impacts from reduced SWP deliveries, protecting water supplies under future climate scenarios and legal requirements, and improve aquatic conditions in the Delta (Ch. 2, p. 2). **Moreover, the purpose seems to indicate that California’s water system is reliant on SWP deliveries and DWR is committed to maintaining the status quo.** This is contradictory to the Delta Reform Act, which established a state policy to “reduce reliance on the Delta in meeting California’s future water supply needs.” (Cal. Wat. Code Section 85021).<sup>3</sup> The DEIR should be revised to broaden the Purpose of the project and consider non-tunnel alternatives that would meet the overarching objectives without increasing reliance on exports from the Delta.<sup>4</sup>

### III. The DEIR fails to analyze alternatives that would protect the Delta

The DEIR's range of alternatives is limited and must be revised to include additional alternatives that would meet the overarching goal of improving water reliability in the SWP service area. The range of alternatives consists of a piecemeal approach whereby three possible alignments are combined with a selection of tunnel capacities and three possible intakes to create a selection of nine possible tunnels (Ch. 3, p.13-14). None of the tunnel alternatives includes the simplest tunnel path in a straight line from the inlets to the discharge point without curves between shafts. Nor do they include a fully gravity-powered tunnel with minimal head loss and appropriate entry and discharge levels/elevations.

The DEIR does not consider an alternative that would include improvement of existing levees and other water infrastructure or a combination of local or regional demand reduction and supply augmentation projects. A recent report by the Pacific Institute found that Southern California can save between 1.1- 1.7 million acre-feet of water per year in just the south coast by implementing water conservation.<sup>5</sup> This would be four times greater than the 236,000 acre-feet of water that DWR claims could have been captured in 2021 if the DCP was operational.<sup>6</sup> California can meet its water resiliency needs without

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<sup>3</sup> See <https://www.epa.gov/sites/default/files/documents/epar9commentsbdcppurpstmt6-10-2010.pdf>

<sup>4</sup> See also,

[https://pcffa.org/wp-content/uploads/2016/11/PCL-et.-al.-Final-Supplemental-Cmts-FEIR-EIS-BDCP\\_CWF-Jan-30-2017.pdf](https://pcffa.org/wp-content/uploads/2016/11/PCL-et.-al.-Final-Supplemental-Cmts-FEIR-EIS-BDCP_CWF-Jan-30-2017.pdf)

<sup>5</sup> The Pacific Institute, *The Untapped Potential of California’s Water Supply: Water Efficiency, Water Reuse, and Stormwater Capture*, April 2022, <https://pacinst.org/publication/california-urban-water-supply-potential-2022/>.

<sup>6</sup> CA Department of Water Resources, *DWR Releases Draft Environmental Impact Report for Delta Conveyance Project*, (July 27, 2022)

constructing the DCP. The DEIR must be revised to consider an alternative that promotes water reliability by improving existing infrastructure and reduces reliance on Delta exports by investing in water efficiency, recycling, stormwater capture, and other technologies to reduce demand and increase available supply.

#### **IV. Surface Water**

Modeling for surface water is only provided for the years 2020-2040, which is a recurring issue in this draft. DCP completion is not expected until a minimum of 2040. Because modeling is only provided up to 2040, the DEIR does not model impacts during the time the project would be operational, which is estimated to be 30 years. Moreover, the climate analysis is based on historical flows (October 1921-September 2015) which are not predictive. Climate Change will affect the temperature and the timing, quantity, and location of precipitation, which we have begun to experience in just the past few years already.

In the face of climate change, a deeper understanding of available surface water is necessary for the lifespan of this project to be worth the enormous cost. The DEIR must be revised to include modeling of impacts using a range of future climate scenarios. The DCP may very well be a stranded asset in the future. In summer, or times of low surface water, pumping operations can cause reverse water flow in the South Delta. Unnatural water flows can be very disturbing to aquatic species.

#### **V. Water Supply**

The project **could result in the potential for increased exports and further reliance** on water that moves through the Delta (Ch. 1, p. 50). Increased exports would harm the Delta, which already suffers from current freshwater diversions.

- The DEIR does not adequately or completely verify that existing SWP/CVP water rights for the Delta shall be transferred from all such facilities in the south to the 2-3 inlets on the north. DWR should verify whether such transfers are within the scope of water rights for the Delta.
- DWR should provide references within DEIR for the closure and removal of all water diversions from the southern Delta.
- DWR should provide a single table for all water rights including those transferred, those capable under normal Delta flow conditions (first +/- 1 standard deviations), and those remaining for flood flow diversions.
- DWR should provide historic flood flow conditions and any records of SWP/CVP capture of unassigned flood flow water rights.
- DWR must adequately compare water rights and flood flows for the proposed project against current SWP and CVP operations.
- DWR should provide all water rights for the current headworks of SWP/CVP for daily, monthly, and annual flows with and without flood flows.

- DWR should provide a coordinated model of water withdrawals for the DCP and all other withdrawals within the Delta for a typical and 3rd-4th-5th standard deviation annual flows.

The DEIR states that 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, only changes to DWR, Bureau of Reclamation (Reclamation), and SWP water users and CVP water service contractors are included. No specific impact assessment results are presented...because the effects of these changes are not considered environmental impacts under CEQA” (Ch. 6, p. 2). DWR’s track record suggests that the DCP will be used to increase water diversions to the contractors. Given that temporary urgent change petitions are handed out almost constantly in drought years, and that the State supports the Voluntary Agreements, which are a bypass of the Bay Delta Plan, DWR cannot say in good faith that the DCP will not modify the water deliveries by volume, as the DCP is specifically built to increase the capacity to do so.

We recommend the following:

- DWR should provide definitions of “modify”, the deliveries, and be specific.
- DWR should provide a list and allocated volumes for non-SWP and non-CVP water rights holders, including in-Delta water rights holders.
- As the DCP is reported to provide protection and assurance of water supplies to the SWP and CVP, DWR should provide a listing of how changes would occur due to DCP actions for SWP and CVP users.
- DWR should provide definitions and citations for Water rights and Flood Flows (and any related rights to divert and use).

According to the DEIR: “SWP includes acquisition of water from the Delta and others before conveying it to users. DWR and Reclamation operate the SWP and the CVP, respectively, to divert, store, and convey water consistent with applicable laws and regulations, and contractual obligations for agricultural, urban, and environmental beneficial uses in the Sacramento River Basin, the Delta, and south of the Delta. FN 1 The SWP and CVP will continue to be operated in accordance with D-1641 until a new water rights decision is adopted by the State Water Board” (Ch. 6, p. 11). We recommend that DWR provide citations and page/paragraph references for D-1641 and provide basis and DCP-related issues that would require new water rights decisions.

Reclamation coordinates operation of CVP in the Delta with the SWP in accordance with the water rights permits issued by the State Water Board and the Coordinated Operation Agreement (Ch. 6, p. 2). Reclamation operates the CVP under water rights granted by the State of California, including those intended to protect agricultural and fish and wildlife beneficial uses in the Delta. In most years sufficient supplies are not available to meet all water contractor demands because of statutory, regulatory, and water rights requirements (Ch. 6, p.19). In some dry or critical years, water deliveries are limited because there is insufficient storage in northern CVP reservoirs to meet all statutory, regulatory, and water rights requirements including water temperatures, and to make additional water deliveries. DWR must substantiate these statements by providing the following:

- Provide details of flood flows, supplies demands, deliveries, rights, dry and critical years.
- Provide definitions and legal sources.
- Provide a flow model as to all Delta and tributaries typical monthly flows and water users.
- Provide operational model runs include demands, storage, and rights for both “normal flows” and flood flows.
- Provide definitions of “insufficient,” “sufficient,” and contracts assigned along with model operations for the median flows years.

## **VI. Flood Protection**

The DEIR lacks data that represents what is happening now, basing flood risks on historical data from 1957, or 2007 to 2016. The DEIR focuses on *annual* versus *event* data and long-used definitions of 100-year and 200-year floods. Considering that the DCP will take until at least 2040 to complete construction, with climate change and changes in weather patterns advancing, there needs to be greater focus on forward, leading-edge scientific data like that presented in Xingying Huang and Daniel L. Swain's 12 August 2022 Science article, “[Climate change is increasing the risk of a California megaflood](#).”

State monies should be focused on repairing, protecting and investing in levees and flood protection before they are undermined by tunneling. DWR must review all of the estimates of sea level rise in the San Francisco Bay and the Delta used in the DEIR to make sure that they reflect the very latest [reports](#).

We may not yet have had an event like the 1861-62 statewide California [flood](#), but already in 2022, during a statewide, extreme drought, there have been several flood events in the deserts of southeastern California. Storage facilities in Southern California for the 2022 monsoon could have helped increase available water to SWP areas of MWD.

The intakes are scheduled to be permanent structures, with fish screens, that will be situated in the Sacramento River (Ch. 7, p.7). There is no mention of river debris accumulating on the intake structures resulting in an increase in the high water level. This will be significant. With increased rain, the report does not acknowledge the debris being carried in the stream flow. Some consideration must be made of this increased debris flow. The accumulation of this material on the project intakes will retard the river flow and cause the water level to rise.

According to the DEIR, the project alternatives do not include any changes in flood control operations, therefore, the operations of project alternatives would have “no impacts on flood protection upstream of the Delta, and the level of flood protection under project alternatives would remain the same” (Ch. 7, p. 26). However, elsewhere in DEIR alternatives and their inlets are established to drain some flood waters from the Sacramento River and divert them to the SWP/CVP and thereby affect flood conditions within the Delta. DWR should provide estimates of any and all expected diversions of flood waters to the SWP/CVP from all such program facilities and operations in the Delta and lower Sacramento River drainage (e.g., within 10 miles of Delta).



The Delta's levees are threatened by the active seismic zones west of the Delta, including the San Andreas and Hayward faults, and less active faults, such as the Southern Midland Fault, underlie the Delta. The DEIR argues that a strong earthquake could damage Delta levees because of the potential for deformation or cracking of levees or the liquefaction of levee embankments and foundations during strong ground shaking. Moderate earthquakes between 1979-1984 damaged nearby Delta levees, and many Delta islands' levees failed during floods within a year after the 1906 San Francisco earthquake (Delta Stewardship Council 2020:7). The DEIR claims that if a levee failed on an island subsided below sea level or during high flows or if a flood were to occur soon after an earthquake, the protected area could be inundated. (Ch.7, p. 22). DWR must clarify these statements by providing definitions for terms, including: "threatened", "active", and "less active", "strong earthquake" ( $\geq 6$ ,  $>7$  or  $>8$  Movement Magnitude), strong ground shaking, and ground acceleration. Additionally, the DEIR must include seismic response comparisons and typical design mitigation measures for levees (height,width, internal barriers, and slope protection) against the DCP, including tubes,shafts, pumps, and substations. Finally, the DEIR should include monitoring and locating of seismic events within 20 mi of the DCP for 2023-2030 as a mitigation measure for all tunnel alternatives.

Elsewhere in this chapter, the DEIR makes statements without providing definitions of its terms or adequate comparison to a No Tunnel Alternative. For example, it states "the study concluded that a major earthquake of magnitude 6.7 or greater in the vicinity of the Delta Region has a 62% probability of occurring sometime between 2003 and 2032 (California Department of Water Resources 2009:2). More recent investigations suggest earthquake-induced ground shaking affecting Delta levees may be less serious but still worrisome (Delta Stewardship Council 2020:7). Although the probabilistic nature of earthquake prediction makes it difficult to quantify the timing and magnitude of seismic threats, it is important to address the threats posed by earthquakes to the Delta levee system because of the potential adverse effects of such events." (Ch. 7, p. 23). DWR should revise the DEIR to provide definitions and comparisons of active and major earthquakes, define "vicinity", and provide analysis of a No Tunnel Alternative.

The DEIR states, "Delta island subsidence resulting from the biochemical oxidation of organic soils and wind disturbance could pose a significant threat to Delta levees. The areas that are most susceptible to subsidence are the central, western, and northern Delta, where thick organic peat layers predominate (Public Policy Institute of California 2008:9)." (Ch. 7, p. 1, 23). For the proposed Delta Conveyance alignments, organic soils are only one part of the overall subsidence system and very little LiDAR survey findings have been conducted or provided for review. With gravity compaction of densifying soils and sediments, increasing densities of overlying materials squeezes groundwater from the deeper fine sediments and with their densification, overall sediment column compacts and soil surface subsides.

We recommend the following:

- DWR should provide the definition and related records for wind disturbances in the Delta including all wind direction, velocities, and durations and computer models for wind effects on exposed levees within the Delta. Provide records of all reportedly wind damages to Delta levees.

- DWR should provide definitions and comparisons of delta subsidence/settlement due to compaction by gravity and dewatering vs oxidation of organic materials. Also include influences of widespread production/removal of natural gas from all units beneath the Delta.
- The Delta area has many abandoned gas fields and fewer storage fields within or under the DCP vicinity, and their long-term production (>20 years) may have generated collapse/subsidence of deeper grounds beneath the DCP area. DWR should provide records of all gas fields and storage facilities and for all wells within 10,000 ft of the DCP facilities.
- DWR should provide mitigation measures for a widespread LiDAR ground surface monitoring of all shaft and tunnel sites/alignments and within 5,000 ft of both.
- Reviews and assessment of land subsidence is incomplete and inadequate and requires major revisions and documentation. DWR should provide an updated and comprehensive model of all factors contributing to the subsidence beneath the DCP area and possible changes of levees, roads, bridges, and other surface features elevations.

According to the DEIR, as the landside ground elevation decreases because of subsidence, the resulting increase in elevation difference between the water surface and ground provides increased hydraulic loading on the levee and its foundation and associated risks related to seepage, piping, and slope instability. Recently, projects have been implemented in the western Delta for subsidence reversal, carbon sequestration, or both (California Department of Water Resources 2022b). (Ch. 7, p. 1 and 23). DWR should provide additional evidence and modeling on this topic, including:

- A model for numerical and hydrostatic pressure conditions and changes anticipated during the life of the Project.
- Listings of gas wells, operations (active, idle, abandoned, etc.), current status, and their productions and field pressures by well and by field within 5000 ft of tunnel alignment.
- A description and model for future development for CO<sub>2</sub>-gas injection and long-term storage for CO<sub>2</sub> and other available gasses.
- A timetable and significance of such programs for stabilizing or elevating current trends of subsidence.

According to the DEIR, “Ongoing and continuous levee maintenance and monitoring would be critical to reducing flood risk at the shaft sites during project construction and would be closely coordinated with the reclamation districts. It is anticipated that levee maintenance agencies would continue making levee improvements to maintain geometric standards after repairs are completed and as sea level rise can be expected to increase in the future.” (Ch. 7, p. 49). DWR understands the importance of levee maintenance, reconstruction, and monitoring for quickly identifying vulnerabilities in or damage to levees during DCP construction. However, the DEIR does not document any commitment by DWR and partner contractors for defense, indemnification, and holds harmless affected reclamation districts against all claims, liabilities, charges, losses, expenses, and costs (including their attorneys’ fees) that may arise from the DCP. Such statements must be made as part of the project description. Further mitigative analysis must confirm that state funding for the DCP will back such local mitigations by others, and that such activities by others will not impose a new burden on the local Reclamation Districts.

## **VII. Groundwater**

The treatment of peat oxidation is inconsistent in the DEIR. For example, it states, “Declining land surface elevations in the Delta are well documented and a major source of concern for farming operations. The oxidation of peat soils is the primary mechanism of sinking lands in the Delta (U.S. Geological Survey, 2000), and some areas are below sea level. In portions of the San Joaquin Valley groundwater basin, drops in land surface elevations have occurred as a result of excessive groundwater pumping, below the Corcoran Clay (a regional aquitard) or below other regionally significant clay layers (the predominant mechanism for subsidence in this area). Land subsidence occurs as the result of the compression of the Corcoran Clay and other fine-grained units where groundwater that supports the aquifer framework has been removed by pumping.” (Ch.8, p.12). Elsewhere, peat oxidation is only mentioned and not considered lesser than that of groundwater dewatering beneath various clay layers. Gas production and storage facilities near and beneath the DCP alternatives are similar to production of waters from regional aquitards/clay layers. DWR should provide known areal distribution of the Corcoran and other significant clay aquitards within the DCP alternative zones of influences.

## **VIII. Water Quality**

Evaluation of the impacts of the No Project Alternative on water quality is speculative and must be revised. The analysis focuses on “identifying the additional water-supply related actions public water agencies may opt to follow if the Delta Conveyance Project does not occur” (Ch. 9, p. 38). What follows is a list of possible types of projects, speculation about which regions of California may construct them, and a narrative description of possible impacts of these projects on water quality. The analysis does not include quantifiable pollution levels or risks that would allow for comparison to the tunnel alternatives, and does not include a description of how the Delta region would be impacted by this alternative. The DEIR must be revised to provide this additional analysis. The DEIR must also be revised to provide a true No Tunnel Alternative which analyzes how California can meet its water reliability needs through a combination of water conservation, sustainable groundwater storage and management, increased water reuse and recycling, and stormwater capture. It should prioritize projects that will have avoidable or mitigable impacts, provide a comparison of the water quality impacts of implementing recommended regional water projects, and include analysis of the impacts to the Delta ecosystem from reducing SWP deliveries.

## **IX. Geology and Seismicity**

DCP infrastructure will be vulnerable to any seismic events or changes because it is unpredictable how it will be affected by possible shifts in the extremely deep sediments of the Sacramento Valley. The Valley is not cut by the river; it is formed by deep faulting with the hinge lying some 2,500 ft below the surface.<sup>7</sup> Drs. Eldridge Moores and Thomas Holzer are experts worth consulting on this issue. The Seismic Summary goes into great detail of the studies and assessments that have been reviewed and created. DWR should include further discussion of the potential for soil liquefaction of earthen levees that make up much of the containment of the Delta waters.

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<sup>7</sup>[https://www.researchgate.net/figure/Geologic-regions-of-California-As-the-old-sea-floor-surface-of-the-Pacific-was-scraped\\_fig1\\_279555839](https://www.researchgate.net/figure/Geologic-regions-of-California-As-the-old-sea-floor-surface-of-the-Pacific-was-scraped_fig1_279555839)

A major seismic event would affect delivery of water to the south, destroying one of the three major objectives of this proposal. The Delta is at or below sea level and any significant levee failure would cause a major flow of San Francisco Bay water into the Delta.

The DEIR must be revised to include additional evidence to support the statement that, “both the peat and organic mineral soil types are well above what would be the main tunnel invert elevation (i.e., -143 feet to -...163 feet...for the tunnel from the intakes to the proposed new Southern Forebay Inlet Structure and -145 feet to -164 feet...for the tunnel between Twin Cities Complex and the Bethany Complex)” (Ch. 10, p.7). DWR must provide a typical expected geologic/soils column including the expected tunnel and shaft depths and zones of influence by the same beneath the DCP facilities. It must also include identification, listings, and locations on drawings/maps for any piling for shafts and inlets related to the DCP. Finally, it should provide standard tunnel and shaft sections (>-140 feet elevation amsl) for every 10 miles of DCP length and shafts.

The seismic hazard in the Delta has significant uncertainty because of the difficulty in characterizing the activity of Delta faults. Citing Bay Area probabilities reminds the reader that parts of California will have significant large earthquakes in the near term, but does not add much to the understanding of seismic hazards in the Delta. The risk from the West Tracy Fault, a major potentially active fault, is proposed to be explored late in the pre-construction period. This belated investigation is a concern given the potential for the fault to expose the DCP to substantial seismic risk (Ch. 10, p. 10-46, Ins. 30-34). The West Tracy Fault along with other, potentially active, faults in the Delta are the primary seismic threats to levee stability. Estimating their activity is challenging but essential to evaluating the seismic hazard in the Delta and the risk to levee stability.

- DWR should provide definition of risks, late, and pre-construction period of all major faults referenced in DEIR and provide exploration prior to finalizing the EIR. Provide “belated investigation” as part of the DEIR for public review and comment as related to tunnels, shafts, levees, and existing SWP works.
- As no belated studies are included in the DEIR, and are pivotal to both levees and the DCP, DWR should provide such studies as part of the DEIR and recirculate a subsequent/supplemental DEIR.
- DWR should provide all known seismic monitoring data for the DCP area and 5 mi/26,000 ft either side of the tunnel alignments, shafts, and inlets. Therefore DWR should have established seismic monitoring stations 10 years ago when starting the review of the Delta, and await results of such studies and analyses before issuing a supplemental DEIR.

Average tunnel utilization is small, relative to its maximum conveyance capacity. A review of the report and the data provided by DWR shows that, for Alternative 5, the North Delta exports occur largely in December through March. But even in these months, tunnel utilization is below 40% in 50% of years (Figure 3). **This result raises questions about optimal tunnel sizing.** DWR should:

- Provide definition and explanation of tunnel utilization, small-medium-large, largely, and below 40% in half of the years. Provide explanation and definition of all SWP water rights, rights to flood flows (typical-seasonal and/or stored/released).

- Provide monthly DCP flows for typical design year, modal, and 3<sup>rd</sup> standard deviation flows for current intake facilities and all proposed DCP alternatives.
- Provide winter flood flows and 25 year flows.

## **X. Soils**

According to the DEIR: “Overall, the alternatives would be constructed on near-surface soils having very similar water erosion and wind erosion hazards. Although the southernmost portion of Alternative 5 is in an area where the near-surface soils have a slightly higher water erosion hazard than that of the soils of the other alternatives, this would be offset by the fact that the disturbance area and therefore the area of potential erosion is less because no Southern Forebay would be constructed under Alternative 5.” (Ch.11, p.1). DWR concludes that the overall potential impact of accelerated water and wind erosion would be similar among the alternatives. (Ch.11, p.1). DWR must substantiate these claims by providing:

- A definition of “near-surface soils”
- Comparisons of surface and near-surface soils and tunnel muck water and wind erosion hazards once dried out
- characteristics for lower, medium, and higher erosive hazards.
- Provide numerical/quantified comparisons of all alternatives, as required by CEQA.
- Provide comparisons of water/wind erosion hazards for discharge facilities of all alternatives within 5 miles of alternative southerly terminations.

## **XI. Fish and Aquatic Resources**

The first section, the Environmental Setting provides an incomplete overview of the conditions fish and other aquatic species face in this heavily altered environment. For example, the DEIR states, “Flow management in the Delta altered the aquatic habitat by (1) changing aspects of the historical flow regime (timing, magnitude, duration) that supported life history traits of native species; (2) limiting access to or quality of habitat; (3) contributing to conditions better suited to invasive, nonnative species (reduced spring flows, increased summer inflows and exports, and low and less-variable interior Delta salinity [Moyle and Bennett 2008]...” (p. 12, ln. 8). However, nowhere within the entirety of Chapter 12 does the DEIR provide information on how the proposed project would improve the three elements of altered flows described above.

This chapter is also replete with unsubstantiated, speculative statements. For example, on pp. 44-47, labeled “No Project Alternative,” the DEIR discusses Future Fish and Aquatic Resources Conditions and Predictable Actions by Others. In the first of these two sections, the DEIR briefly discusses climate change but fails to provide any details for the potential effects of climate change beyond increasing temperatures. In the second section, the DEIR makes numerous speculative statements about actions various regions of the state may take in the absence of the proposed DCP. But nowhere does the DEIR provide evidence for these speculative statements. For example, on p. 12-46, the DEIR states, “Desalination projects would most likely be pursued in the northern and southern coastal regions.”

This section, pp. 44 - 47, is speculation and should be stricken from the DEIR. Alternatively, this section should be thoroughly revised so that every speculative statement is fully substantiated with peer-reviewed, scientific evidence.

There is one “Predictable Action by Others,” which is not addressed and must be included in Chapter 12’s analysis. On p. 12-40, in a section labeled “Applicable Laws, Regulations and Programs,” the DEIR references “...the State Water Resources Control Board Water Quality Control Plan for San Francisco Bay/Sacramento San Joaquin Delta Estuary...” in December 2018, the State Water Resources Control Board (SWRCB) issued its proposal to increase flows into the Delta by requiring approximately 40% unimpaired flows from the San Joaquin River and its three main tributaries, the Stanislaus, Tuolumne and Merced Rivers. The SWRCB is currently in process of implementing this updated water quality control plan, known as “Phase 1” of the update. Phase 2 will update the Sacramento River’s water quality control plan.

As noted above, Chapter 12 contains a section of speculative statements labeled “Predictable Actions by Others.” Yet, here we have a specific set of actions currently in the process of being taken by the main body of water regulation in California, the SWRCB, but no discussion of the importance of these new regulations on the proposed DCP. It is entirely “predictable” that the SWRCB will take action in updating its water quality control plan for the Sacramento River. It is entirely “predictable” that this update will impact the operations of the proposed project by requiring some level of unimpaired flows in the Sacramento River. Therefore, the section labeled “Predictable Actions by Others” should be rewritten in conjunction with the SWRCB to include the actions the SWRCB is likely to take in updating the water quality control plan.

As noted above, Chapter 12 includes descriptions of nineteen specific impacts. It is notable that “Impact AQUA-2: Effects of Operations and Maintenance of Water Conveyance Facilities on Sacramento River Winter-Run Chinook Salmon” is by far the longest, most detailed of the nineteen impacts. Those details cover such topics as near- and far-field effects, North and South Delta exports, water temperature and harmful algal blooms. But in spite of all of these details, there is no discussion of the impact of reduced flows throughout the Estuary on winter-run chinook salmon. Detailed review of the other eighteen impacts shows the same missing information: nowhere does the DEIR discuss the impact of reduced flows on any of the fish and aquatic resources. This complete lack of discussion contradicts Chapter 12’s own statement, as quoted above (on p. 12-8, the DEIR states, “Flow management in the Delta altered the aquatic habitat by (1) changing aspects of the historical flow regime (timing, magnitude, duration) that supported life history traits of native species; (2) limiting access to or quality of habitat; (3) contributing to conditions better suited to invasive, nonnative species (reduced spring flows, increased summer inflows and exports, and low and less-variable interior Delta salinity [Moyle and Bennett 2008]...”).

Furthermore, the other eighteen impacts do not provide anywhere near the same detailed analysis of the impacts as Impact AQUA-2. Nowhere in the DEIR is there any explanation for why the impact on winter-run chinook receives the substantial bulk of the impact discussion. Many, if not all, of the other impacted species, whether steelhead, Delta smelt, long-fin smelt, or even southern resident killer whales, will be negatively impacted by the proposed project’s operations and maintenance, and in nearly all of the same ways that winter-run chinook salmon will be impacted.

Therefore, the DEIR's Chapter 12 should be thoroughly rewritten. Here we provide a list of the impact topics discussed in Impact AQUA-2:

- Near-field effects of North and South Delta Exports
- Far-field effects:
  - Hydrodynamic effects
  - Through-Delta Survival
  - Habitat Suitability
  - Habitat & Wetland Bench Inundation
  - Water Temperature
  - Cyanobacteria Harmful Algal Blooms
  - Metals
  - Adult Straying
  - Salmon Life-Cycle monitoring
  - Maintenance Effects
  - CEQA Conclusions
  - No Project Alternative

A thorough revision of Chapter 12 is required to provide similar impact analyses across all affected fish and aquatic resources for the simple reason that winter-run chinook salmon is not the only species which lives – or attempts to live – in this heavily altered environment. The proposed DCP will alter this environment even more. Every affected species deserves and requires a thorough analysis. The analysis of winter-run chinook salmon provides a reasonable model to begin that analysis.

The winter-run chinook salmon analysis fails to address the historic, continuing and future impacts of reduced water flows throughout the Bay-Delta Estuary. Therefore, to the bulleted list provided above, the DEIR needs to add this impact element to its analysis of all impacted species, not only winter-run chinook: Impact of historic, continuing and future water diversions on each species' ability to thrive.

A second major omission is regarding the Delta Reform Act of 2009 ("the Act"). The Act defines "coequal goals" 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 85054). Nowhere in Chapter 12 is the Act addressed. Fish and aquatic resources are certainly part of "natural resource values" and therefore are required by California law to be enhanced, not degraded. Chapter 12 of the DEIR must be completely rewritten. Every section, from the Environmental Setting and stressors all the way through to Impact AQUA 19, must be rewritten to include a full, detailed description of how each specific element will be enhanced by the proposed project. As currently written, the DEIR violates the Delta Reform Act of 2009; substantial revisions must be undertaken to correct this glaring omission.

## **XII. Terrestrial Biological Resources**

The DEIR is flawed in its treatment of terrestrial species, and must be revised and recirculated for public comment. It does not provide adequate mitigation for impacts to terrestrial species, nor does it commit to mitigation as required by CEQA.<sup>8</sup> Similarly, the requirement for getting a 2081 incidental permit pertains to all vertebrate terrestrial species and there needs to be a commitment to get one for all of the vertebrate terrestrial species. The DEIR fails to state enforceable methods for conserving in perpetuity the lands for mitigation for loss of all of the vertebrate terrestrial species foraging habitat, as well roosting and nesting habitat where applicable. Loss of habitat is a critical component for the listing of covered vertebrate terrestrial species. Conserving habitat at 1:1 or other mitigation ratio level does not compensate for the habitat that was lost. At a 1:1 ratio, for every acre conserved there is an acre lost, and it is the ongoing loss of habitat that makes the impacts to all covered vertebrate terrestrial species significant and unavoidable. This DEIR needs to change all of its significance findings for all covered vertebrate terrestrial species impacted to “significant and avoidable” for all species that lost significant amounts of habitat.

Additionally, the DEIR did not include the Peregrine Falcon (*Falco peregrinus*) in the impact analysis or mitigation. The peregrine falcon is a California Fully Protected Species that can be found throughout the project area, but it was not included in this DEIR. The peregrine falcon routinely ingests shorebirds when near wetland areas, but there was no discussion of the possible impacts to the falcon from methylated mercury, selenium or by products from toxic algae, despite the fact that it eats fairly high up on the food chain and would therefore be more vulnerable to such toxins concentrating up thru the food chain. This DEIR must be revised to include impacts analysis and mitigations for Peregrine falcon.

### **Swainson’s Hawk**

The primary threat to the Swainson’s Hawk (*Buteo swainsoni*) in California is ongoing cumulative loss of habitat for foraging and nesting. (California Department of Fish and Wildlife, Swainson’s Hawk (*Buteo swainsoni*) In California (Reported to California Fish and Game Commission) FIVE-YEAR STATUS REPORT, at 3 (2016)). In the San Joaquin Valley conversion of riparian systems and woodland communities to agriculture also limits the distribution and abundance of Swainson’s Hawks (Id. at p. 4). The Swainson’s Hawk is currently listed as a threatened species and protected under the California Endangered Species Act. The DEIR fails to consider or provide adequate commitment to mitigation, and is inconsistent with CEQA Guideline 15126.4(a)(1)(B). The DEIR lists as a reference the Department of Fish and Game guidance on Swainson's Hawk mitigation (Staff Report Regarding Mitigation for Impacts on Swainson’s Hawk in the Central Valley of California, California, Department of Fish and Game, November 8, 1994), but does not refer to those guidelines, much less commit to them, in its description of

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<sup>8</sup> “Formulation of mitigation measures shall not be deferred until some future time. 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 DCP’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 and that will be considered, analyzed, and potentially incorporated in the mitigation measure.” (CEQA Guideline 15126.4(a)(1)(B))



compensatory mitigation. The DEIR fails to commit to mitigation, including a mitigation ratio, a number of acres to be conserved in perpetuity, and a number of trees to be replaced. Moreover, it fails to disclose the specific performance standards to be used for Swainson's Hawk impact mitigation.

The DEIR fails to commit DWR to obtaining a 2081 take permit for impacts to Swainson's Hawk of the project, nor does it require that its mitigation plans be approved by California Fish and Wildlife. The DCP cannot guarantee that it has reduced its impact on Swainson's Hawk to less than significant if it does not apply for a 2081 take permit and comply with the guidelines and conditions set by CDFW.

Instead, the DEIR defers until after the permitting process the impact and mitigation details required to be disclosed to the public in the DEIR. (Ch. 13, p. 3F-16).

Deferring mitigation until late in the design process is not compatible with CEQA and makes it impossible for the public or the agency to understand the full impacts of the project and whether the proposed actions to minimize or mitigate impacts are adequate. The DEIR fails to state an enforceable method for conserving in perpetuity the lands for mitigation for loss of SWH foraging habitat.

CEQA requires that mitigation measures be capable of enforcement. Mitigation for loss of foraging habitat requires that a conservation easement held by a credible conservation manager includes an endowment for the permanent enforcement and monitoring of the habitat mitigation easement. Typically the easement will be recorded prior to the issuance of a grading permit or prior to any grading, grubbing or disturbance of soil. To ensure that mitigation achieves the less than significant impact threshold, both the conservation easement and the conservation operator should be approved by CDFW. Deed restrictions would not meet the criteria for enforceable mitigation and we do not believe they have been used for Swainson's Hawk conservation in California.

CDFW has a model easement which can be utilized with willing agricultural land owners. The Swainson's Hawk foraging habitat easement differs from an agricultural land conservation easement primarily in the addition of restrictions against orchards and vineyards and other crop types that interfere with foraging.

Despite the DEIR's claim that "Mitigation acres will be provided for all acres of habitat lost in the very high, high, medium and low value classes. . . .", it does not disclose the mitigation ratio or the number of acres to be acquired for mitigation, or the instrument for restricting uses. (Appendix 3F, p. 1-9, CMP-19b). CDFW SWHA mitigation standards, and those of local ordinances and habitat conservation plans, generally require that mitigation for loss of any SWHA foraging habitat be at a ratio of 1:1, that the mitigation lands be protected in perpetuity by conservation easement or fee title, that a conservation manager be approved by CDFW and permanently endowed, include crop restrictions, and that mitigation lands be within 10 miles of the area impacted by the DCP. The DEIR has none of these requirements. The DCP mitigation measure would allow a much smaller mitigation ratio. The EIR states that mitigation measures will be developed during the permitting process, but fail to state when the mitigation land, whether easements or fee title, will be acquired. The EIR mitigation measure would allow the mitigation land to be acquired at some unspecified time after the DCP is completed – maybe never.

Per the DEIR, mitigation lands could be located many miles distant from the area impacted by the DCP and thus of no value to the population of SWHA impacted by the project. In fact, CMP – 19b states "Foraging habitat will be protected within 3 miles of a known Swainson's hawk nest tree and within 50 miles of the project footprint." (Appendix 3F, p. 1-9). Protection of foraging lands more than 10 miles from the DCP impact will have no beneficial impact to the nesting pairs in the project area and will not contribute to their reproductive success. Providing additional protected foraging habitat for other nesting pairs, not affected by the DCP, will not address impacts to the population affected by the project, and will not reduce its impact on the reproductive success and range of the species.

CMP-19b states that "Where feasible, protected foraging habitat will have land surface elevations equal to or greater than -1 foot NAVD88 or will maintain levees around protected habitat, to minimize the risk of flooding and loss of suitable habitat due to future sea level rise." (Appendix 3F, p. 1-9). The DEIR does not provide an explanation for why this level will protect habitat from flooding. Elevation at or below sea level is not considered suitable for SWHA nesting and foraging habitat due to exposure to potential flooding.

The DEIR identifies "The unmitigated impact on SWHA ranges from 1800 acres in Alt 5 to a high of 3400 acres in Alt 2A. This is considered less than significant impact. (Table 13.0)." Please explain if this number represents the number of acres impacted by the DCP before mitigation is acquired, or if this is the number of acres left unmitigated after mitigation is acquired. If there are 1800 to 3400 acres of foraging habitat that will not be mitigated, clearly the project impacts have not been mitigated to less than significant. If these numbers represent the acre impact, then the DEIR should commit to 1800 to 3400 acres of mitigation for loss of foraging habitat, depending on the alternative chosen. However, it does not.

For these reasons, the claim that the mitigation will reduce the impact of the project on Swainson's Hawk to less than significant is empty and lacks credibility.

### **Greater Sandhill Cranes**

Greater Sandhill Cranes (*Grus canadensis tabida*) are a "no take" species by virtue of the CA Fully Protected Species status. For Fully Protected Species, California Fish and Game code 86 states: "'Take' means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." This is a fairly high bar in that no individuals that are Fully Protected can be killed during any phase of the construction and the operation of the DCP. "Take," as defined by code 86 must be avoided in all circumstances and it is not acceptable to provide mitigation for incidental take except within the construct of a state approved Natural Communities Conservation Plan (NCCP). The DCP is not an NCCP, it is a huge construction project that is regional in scope.

The Greater Sandhill Crane is also protected as a threatened species under the California Endangered Species Act (CESA) which defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The big additional protection provided by CESA is that the species is not to be harmed. But unlike "Fully Protected Species" status, incidental take (harm in this case) can be mitigated. This difference in definitions explains why avoidance methods are being employed in the hopes that no Greater Sandhill Cranes are killed during the construction and

operation of the project (Fully Protected Species status) and why land acquisition mitigations are being provided for the loss of Greater Sandhill Crane habitat (to address “harm,” CESA). Our review will focus on whether the avoidance efforts are sufficient to ensure that no Greater Sandhill Cranes will be killed by any facets of the construction or operation of the DCP, and whether the land acquisition mitigations provided are adequate to address the harm caused by the project.

Setting September 15 as the de facto day that Greater Sandhill Cranes are going to arrive is problematic. Whereas this may be a useful date to consider if one wants to go out and see early arrivers, it is in no way a hard and fast parameter. Greater Sandhill Cranes have been seen much earlier than that date in the Delta, as an example, about 15 years ago a small flock was reported by Esther Milnes on August 18. Admittedly this flock was likely quite an outlier, but section 86 of CDFW code prohibits the take of any Greater Sandhill Cranes, no matter how much earlier they arrive than September 15<sup>th</sup>. With climate change, it would not be unreasonable to think that arrival times could shift for cranes like it has for other birds. If as a result they left earlier from the Delta, this would not be problematic for this DEIR, but earlier arrival times would be. No consideration or discussion appears to have been provided in this DEIR addressing possible shifts in arrival times due to climate change. All analysis and avoidance measures for Greater Sandhill Cranes need to include arrival times as early as August 18<sup>th</sup> and possibly even earlier to address climate change shifts.

The temporary roosting data being used for temporary roosting sites is outdated and not sufficient to identify potential impacts to Sandhill Cranes. The DEIR acknowledges that Greater Sandhill Cranes have a high level of philopatry for their roosting sites. But if Greater Sandhill Cranes have been using a roost site that is no longer available, they have no choice but to find a new roost site. Temporary roost sites are, by definition, not permanent. The data used for the location of roost sites in the DEIR is not current. It should be updated yearly to reflect the current locations of roost sites being utilized. Using older, and therefore not necessarily accurate, roosting data means that any analysis derived using those sites is also not necessarily accurate. Understanding where Sandhill Cranes are likely to forage is directly tied to where they roost. Identifying impacts to foraging cranes are an important consideration for the DEIR. This temporary roost site data deficiency needs to be corrected by using the most recent season’s current roosting data, and the analysis of impacts to roosting and foraging cranes needs to be updated and corrected accordingly.

This DEIR relies heavily on Ivey et al’s 2015 study looking at how far cranes migrate daily from their roost sites to foraging areas (Ivey, Dugger, Herziger, Cassaza, and Fleskes, 2015). The paper was not trying to determine the greatest distance that a crane would commute daily for feeding, but rather it was trying to determine commute distances in the context of conservation. To that end, the discussion in the paper clearly states that habitats within 5 km of roosts for Greater Sandhill Cranes, which would encompass 95% of the studied Greater Sandhill Cranes, and within 10 km for Lesser Sandhill Cranes (90%), should be considered for making zoning and land use considerations. The 5% of Greaters, and the 10% of Lessers, that commute farther than the respective 5 km and 10 km also need to be considered in a DEIR that must ensure that no Greater Sandhill Cranes will be killed, and that must identify harmful impacts to Greater and Lesser Sandhill Cranes, even those that are outliers when it comes to long commuting distances.

It is important to remember that only 33 Greater Sandhill Cranes and 44 Lesser Sandhill Cranes (*Grus canadensis canadensis*) were tracked for the study. Whereas this number of cranes were able to provide a statistically significant understanding of the relationship between roost sites and foraging sites, the same cannot be said for using the same data for determining the greatest distance that a crane might travel to forage. The Ivey et al paper (Ivey, Dugger, Herziger, Cassaza, and Fleskes, 2015) included a data point for a Greater Sandhill Crane traveling almost 9 kilometers from the roost site, and one for over 21 kilometers for a Lesser. So, the longest distance that might be traveled can be accurately described as longer than 5.5 miles (9 km) for Greater Sandhill Crane, and longer than 13 miles (21 km) for Lesser Sandhill Cranes. Given the thousands of cranes that winter in the project area, the extreme outliers could travel significantly further. There was no acknowledgement or discussion of this probability, nor does any of the impact analysis consider this probability.

The distances utilized by this DEIR for identifying possible impacts are significantly shorter distances than even the important conservation considerations of 5 km for Greater Sandhill Cranes and 10 km for Lesser Sandhill Cranes. This resulted in a deficient approach for identifying potential deadly impacts to Greater Sandhill Cranes and potentially harmful impacts to both Greater and Lesser Sandhill Cranes. Analysis should be done looking at possible impacts greater than 5.5 miles (9 km) for Greater Sandhill Cranes because deadly impacts are possible in that range. As an example, a Greater Sandhill Crane being flushed when it is foraging 6 miles (10 km) from its roost site and hitting an existing power line on a cloudy day. This deficiency will be commented on further in the context of new power lines as well as potential impacts to foraging cranes.

There are descriptions and analyses of bird strikes with new power lines with a particular focus on, and even an appendix devoted to, Sandhill Cranes (*Grus canadensis*) because of a substantial historical record of this species being vulnerable to such strikes. The deficiencies discussed already about outdated roost site data and daily commute distances are evident here.

Most greater sandhill crane movement in the Delta occurs within approximately 1.2 miles of their primary roost sites (Ivey et al. 2015:523) and Brown et al. (1987:131) found that no sandhill crane collisions occurred where distances from power lines to bird-use areas were greater than or equal to 1 mile (Avian Power Line Interaction Committee 2012:50). All proposed new aboveground towers and associated SCADA and transmission lines would be located at least 3 miles or more from the nearest known greater sandhill crane roost site under all alternatives (Ch. 13, p. 272).

Whereas it is true according to Ivey et al, 2015, that most Greater Sandhill Crane daily commute distances in the Delta occur within 1.2 miles of roost sites, and even that 95% of Greater Sandhill Cranes are commuting 5 km or less daily, there remains the issue of the other 5% of Greater Sandhill Cranes which are traveling farther. As for Brown et al, 1987, bird use areas include both roosting and foraging, and his recommendation in that paper was to locate new transmission lines AT LEAST 2 km (which is 24.3% farther than the 1 mile attributed to Brown in this DEIR) from roosting and feeding sites. So, 1.243 miles from a crane use area would extend far beyond 1.2 or even three miles from the roost site based on the conclusions from the Ivey et al, 2015, paper, which demonstrated that Greater Sandhill Cranes can travel close to 9 km from roost sites, if not further. The correct math based on these two papers does not support

a conclusion that locating new transmission lines at least 3 miles away from roost sites will avoid the possibility of a Greater Sandhill Crane being killed by a new transmission line. The correct math would be that new lines should be located at least 6.8 miles (11 km) from roost sites (9 km travel distance plus the additional 2 km added by Brown), and possibly significantly further away given the likelihood that some Greater Sandhill Cranes are at times traveling even further from their roost sites.

Locating new above-ground towers and associated SCADA and transmission lines 3 miles or more from Greater Sandhill Crane roost sites is clearly inadequate to avoid possible powerline strikes for a bird that we know travels close to at least twice that distance (9 km data point from Ivey et al, 2015) and quite possibly much more. Add to this the problem of outdated temporary roost data and it becomes impossible to accurately determine where to even start measuring the commute distances from. These deficiencies make it impossible to understand the potential impacts to Greater Sandhill Cranes. Locating new transmission lines at least 3 miles from roost sites does not avoid the eventuality of Greater Sandhill Cranes being killed and Lesser Sandhill Cranes being harmed.

The same issues exist for the co-location of power lines:

Replacement aboveground transmission lines along Franklin Road would be placed at the same vertical height as the existing lines on the opposite side of the tower. Replacement aboveground transmission and SCADA lines located within 1.2 miles of known roost sites, in the absence of mitigation, could increase the potential for collision for greater sandhill cranes (within 3 miles of known roost sites for lesser sandhill cranes; Ivey et al. 2015:523) if they were not constructed within the same vertical prism as the existing lines (Ch. 13, p. 273).

The Ivey et al, 2015, and Brown et al. 1987, papers taken together suggest that any above ground transmission line within 11 km (6.83 miles), not 3 miles, of a roost site could increase the potential for collision for Greater Sandhill Crane and this was not analyzed in this DEIR. Further, constructing the new lines such that they are within the same prism as the existing lines does not guarantee that Greater Sandhill Cranes will not die hitting them. A bird gaining altitude as it flushes from a roost or forage site might clear the first lines as it gains altitude only to hit the new set of lines extending further out at the same elevation. Placing flight diverters may help, but the risk would remain. It is our understanding that the SCADA lines are to be installed significantly closer to the ground than the electrical lines. This would mean that Greater Sandhill Cranes would have to avoid both the lower SCADA lines and the upper electrical lines, requiring them to avoid a new lower hazard as well as an elongated upper hazard. The SCADA lines are new and not necessarily being co-located on the same plane as existing lines. They present a clear hazard that is not avoided by co-locating the upper electrical lines on the same prism.

The project alternatives have been designed to avoid any activities that would result in actions considered “take” of greater sandhill crane. The project alternatives would use existing power lines or underground conduit to the extent possible for the purpose of avoiding potential injury or direct mortality of the greater sandhill crane and all new aboveground lines would be located outside of the roost sites or foraging habitat for greater sandhill crane (Ch. 13, p. 274).

The analysis of above ground transmission lines did not reflect the amount of the landscape that Greater Sandhill Cranes are using outside of their roost sites, using 3 miles as opposed to a minimum of 11 km as parameter. The co-location of the upper lines may result in fewer strikes than an entirely new alignment, but no evidence was provided that the additional width from adding new lines on the same plane is not a hazard to cranes gaining elevation as they flush. The SCADA lines introduce a new lower striking hazard with no evidence that Greater Sandhill Cranes will not hit them.

The final transmission line deficiency is that there was no impact analysis of Greater Sandhill Cranes hitting EXISTING transmission lines after being flushed from foraging sites by construction activities. Attention was only given to new lines and only within 3 miles of roost sites. The DEIR acknowledges the possibility of flushing foraging cranes – as an example by construction vehicles on the haul roads – but does not address the existing power line strike issue that could result from flushing foraging birds. The analysis should use current roost site data and consider all existing power lines and other potentially deadly physical obstructions like, but not limited to, fences, buildings, large equipment, poles etc. within a minimum of 11 kilometers, and potentially further if the DEIR is unable to demonstrate that Greater Sandhill Cranes are not traveling even further, that might be hit by cranes being flushed from their forage sites by construction activity. No avoidance measures were presented for this potentiality, beyond 3 miles from roost sites, for Greater Sandhill Cranes, or mitigations provided for Lesser Sandhill Cranes, and only new transmission lines were considered within those 3 miles.

There appears to have been an assumption that the avoidance measures that were designed to keep Greater Sandhill Cranes from hitting transmission lines would also be protective for Lesser Sandhill Cranes. This was an erroneous assumption. As indicated earlier, Lesser Sandhill Cranes were documented flying more than 21 km from roost sites in the Ivey 2015 et al paper, which means that 13 miles (21 km) is a minimum distance to be considered and not the farthest distance that Lesser Sandhill Cranes are likely traveling because the sample group was only 44 birds. Adding the 2 km recommendation called for in the Brown 1987 paper, any powerline (new or existing) within a minimum distance of 14.3 miles (23 km) from a roost site that could be hit by a crane because of construction activities presents a potentially deadly threat. There were no avoidance or minimization measures or mitigations for transmission lines (new and existing) that addressed impacts for any cranes beyond 3 miles from roost sites, Greater Sandhill Cranes or Lesser Sandhill Cranes. This is even though obvious mitigations exist like requiring the installation of flight diverters on any existing transmission lines within 14.3 miles of a roost site that cranes might hit if they were flushed while foraging, particularly on foggy and dark days. For new power lines, the avoidance and minimization measures should extend to include any line within a minimum of 6.8 miles (11 km) of roost sites for Greater Sandhill Cranes, and a minimum of 14.3 miles (23 km) for Lesser Sandhill Cranes. These avoidance and minimization measures will help but cranes, both Lesser Sandhill Cranes and Greater Sandhill Cranes, could still be killed or harmed by transmission lines as a result of construction activity for the DCP because of the significant number of days of very cloudy weather in the Delta when cranes are present, which could make even the best flight diverters inadequate. The transmission line impact potentiality is unavoidable and potentially significant, potentially fatal to Greater Sandhill Cranes, and no mitigation measures were provided for Lesser Sandhill Cranes that could be harmed. Even if the avoidance and minimization measures are

improved with more flight diverters on existing lines it is still likely that Lesser Sandhill Cranes will be harmed or killed by collisions with immovable objects on very foggy and dark days.

The proposed avoidance and minimization as well as mitigation measures are not adequate to avoid killing or harming Greater Sandhill because of construction and operation related noise created by the DCP. This noise has the potential to cause cranes to flush and possibly hit transmission lines (new and existing). This DEIR suggests that cranes have been seen to acclimate to steady sources of noise, like that from a busy freeway. It also states that: “less is known about the ability of sandhill cranes to habituate to intermittent noise such as that associated with the operation of heavy equipment (e.g., pile drivers, construction cranes, compressors, heavy trucks).” A discussion followed this admission in an apparent effort to refine what is known about Sandhill Cranes ability to habituate to intermittent noise.

Hazing techniques are regularly employed in North America to prevent sandhill cranes from causing significant crop damage or colliding with aircrafts (Barzin and Ballinger 2017:1). Hazing techniques such as propane cannons and pyrotechnics have been reported to lose their effectiveness as deterrents once individuals are no longer naïve to the auditory disturbance, particularly in high-value habitat (Barzin and Ballinger 2017:5–6), suggesting that cranes can habituate to extreme and sporadic sounds. Disturbance from waterfowl hunting can reduce habitat availability to sandhill cranes (Ivey et al. 2014a:27; Ivey et al. 2014c:16–17) and cranes have been observed to avoid roost sites once opening day of hunting season has begun (Ivey et al. 2014c:16). Sandhill cranes are present in the study area during the waterfowl hunting season (approximately October 23 through January 31), and hunting occurs throughout the study area on Bouldin Island, Little Mandeville Island, private duck clubs, Stone Lakes NWR within 1 mile of known roost sites, and from public waterways throughout the Delta. Cranes are therefore exposed to irregular, explosive sound from shotguns under existing conditions (a 12-gauge shotgun blast is approximately 165 dB) and respond to those disturbances throughout the winter season (Ch. 13, p. 266).

The referenced Barzin and Ballinger paper references the use of propane cannons and pyrotechnics. These devices appear to have been used in the Spring to protect corn kernels planted in the ground from cranes. It should be noted that crane behavior can vary depending on the season, and that how a crane behaves in the Spring (up on their breeding grounds) cannot be seen as a surrogate for how a crane will behave on its wintering grounds. And, even if the devices are not effective long term, the paper clearly indicated that it was initially effective, especially with naïve birds. Juvenile cranes would fit the definition of “naïve” and these are the same cranes most likely to flush when disturbed and hit a powerline, and, as has already been indicated in this comment letter, the modeling for powerline strikes is deficient to even determine the level of impacts. During the foggy wintering season in the project area, “naïve” Greater Sandhill Cranes would be particularly vulnerable to sound impacts and with the current avoidance measures “take” as defined by section 86 of CDFW code is a definite possibility. It is also worth noting that the suggestion that cranes could potentially acclimate to the construction disturbance is substantially undermined by the quote below:

Construction activities would not be expected to injure or kill sandhill crane individuals. If a bird is present in a region where construction activities are occurring, the bird would be expected to avoid the slow-moving or stationary equipment and move to other areas, as they would move away from any other trucks or farm equipment that could be present within or adjacent to agricultural habitats under existing conditions (Ch. 13, p. 265-6).

This quote suggests that cranes are going to move (flushing is indeed a type of movement) to avoid disturbances, which due to the nature of the construction is likely going to have a sound component. So, this DEIR is counting on them moving and not habituating and staying close to construction disturbances, which is quite different from some of the inferences/suggestions made in the last quote from this same DEIR. We are in general agreement that cranes will avoid these disturbances and we believe that the sound component of the construction is a big part of why they would move. But the problem we have been consistently bringing up is that the movement (flushing) is fraught because they could be injured or killed by obstructions in their environment at far greater distances from their roost sites than this DEIR analyzed or considered, or by obstructions other than new transmission lines within the areas that were analyzed.

Limiting construction activities greater than 50 dba to one hour before sunrise until one hour after sunrise does not limit heavy equipment or other vehicles from driving haul roads and access roads and potentially flushing cranes which could result in transmission line strikes – and here again the outdated roost site data and deficient daily commuting analysis are problematic. Similarly, construction sounds below 50 dba from stationary sources (intakes, shafts, etc.) have the same capability of flushing cranes.

On the discussion about hunting disturbances in the Delta, it is important to highlight that the DEIR states, based on the 2014 Ivey paper: “cranes have been observed to avoid roost sites once opening day of hunting season has begun,” suggesting a quite significant behavioral modification because of the gunfire.” The DEIR quote also states that: “Cranes are therefore exposed to irregular, explosive sound from shotguns under existing conditions (a 12-gauge shotgun blast is approximately 165 dB) and respond to those disturbances throughout the winter season.” The cranes’ response is the obvious concern, but it is made to sound like the cranes are adjusting to the hunting and therefore they can adjust to the noise impacts from the DCP. Beyond abandoning roost sites and possibly nearby foraging sites because of the gunfire, they may also be undergoing stress, which is harmful to their survival and their future ability to be successful breeders. The response to gunfire seems to undo the suggestion that cranes easily habituate to extreme disturbance as evidenced by avoiding roost sites. This suggests that the enhanced feeding opportunities’ mitigation provided in Bio -33 may help offset the reduction in foraging habitat available, but it is unclear how this might address the stress component of their response.

There are field tested techniques available that could help determine if specific aspects of the construction process are stressing the cranes. Glucocorticoid metabolites have been used to gauge stress levels in cranes in the field.<sup>9</sup> Collecting and analyzing field samples for the presence and quantity of this stress indicator before construction begins and then comparing that to samples collected during construction

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<sup>9</sup> Barcelo, Ingrid, "Winter Ecology of Sandhill Cranes (*Grus canadensis*) in Northern Mexico" (2012). Dissertations & Theses in Natural Resources. 65.



could provide important feedback on whether the avoidance and minimization measures are effective or if they might need to be modified and improved.

The 15 mile an hour speed limit on the dirt haul roads (3b-24), such as those needed to access the intakes, might be effective to avoid running over small species in the roadway, or flying across the roadway, but it is potentially more of an impact for cranes. Using the unpaved section of Staten Island Road as a surrogate, slowing down from the speed limit of 25 miles an hour there to take a photo of cranes near the road inevitably causes them to flush. Similarly, driving very slowly (10 to 15 miles an hour) along the same road hoping to get photos of cranes near the road also causes them to flush before a photo can be taken. Driving at the speed limit of 25 miles per hour often does not cause the cranes to flush. So, the 15 mile per hour speed limit on dirt roads might be good for avoiding roadkill, but it is also potentially problematic for flushing birds. Slow moving vehicles on the dirt haul roads may flush more birds than faster moving vehicles. Of concern here is that Greater Sandhill Cranes that are flushed may be killed or harmed, particularly on foggy and dark days. And again, the existing transmission line analysis, because of outdated roost site data and the approach used to determine daily commute distances for cranes, along with not considering other obstructions on the landscape that a crane might hit, was deficient and therefore unable to determine if cranes may be killed when flushed by these slow-moving vehicles.

The intermittent nature of vehicles driving down the new construction roads makes habituation less likely for cranes. This would certainly also be the case during the operation of the project because maintenance and operation vehicles would be extremely intermittent, suggesting that any nearby cranes encountered would be flushed and vulnerable to mortality as a result. The intermittent usage of the haul roads exacerbates the likelihood that cranes will be flushed – claims that the cranes might be able to acclimate to steady vehicular flows is dismantled by the reality that for at least some of the construction, and for all of the operation and maintenance, the usage will be very intermittent and highly likely to flush any nearby cranes encountered, which on foggy days could result in bird strikes on power lines.

This DEIR admits, in a quote we used earlier, the likelihood of flushing cranes but describes it as “moving:”

Construction activities would not be expected to injure or kill sandhill crane individuals. If a bird is present in a region where construction activities are occurring, the bird would be expected to avoid the slow-moving or stationary equipment and move to other areas, as they would move away from any other trucks or farm equipment that could be present within or adjacent to agricultural habitats under existing conditions. (Ch. 13, p. 265-6)

The DEIR also admits that maintenance activities would disturb cranes:

The maintenance of aboveground water conveyance facilities for all project alternatives would result in periodic disturbances that could affect roosting and foraging sandhill cranes. Maintenance activities across all facilities that could affect sandhill cranes (all project alternatives) include repaving of access roads every 15 years, semiannual general and ground maintenance (e.g., mowing, vegetation trimming, herbicide application), and daily or weekly inspections by vehicle. Noise and visual disturbances from these maintenance activities at the

intakes and shaft sites could disturb greater and sandhill cranes roosting or foraging in the vicinity of work areas if activities are conducted between October and mid-March (when cranes are present in the study area). However, as described above under construction-related effects, there is insufficient data to assess the effects of maintenance noise levels would have on sandhill crane behavior, relative to existing conditions. Maintenance activities would generally be conducted during the day, except for emergency maintenance, and would therefore not require additional lighting (Ch.13, p. 273).

It is difficult to impossible to conclude that with the proposed avoidance measures that for the 12 plus years of construction, followed by the decades of maintenance, that all cranes flushed by vehicles or other construction activity will avoid mortality from hitting power lines or poles or fences or other obstructions during foggy and dark days. Especially given the deficient analysis of existing power lines and other obstructions within 11 km of roost sites, and the use of outdated roost site data.

Staten Island is an important wintering area for sandhill cranes and regularly hosts a high density of greater and lesser sandhill cranes, particularly early in the winter season (Ivey et al. 2014b:9). Interested parties provided information that was used to identify a suitable location for the tunnel shaft on Staten Island (under Alternatives 1, 2a, 2b, and 2c) in a previously disturbed location adjacent to a road and powerline on the northern portion of the island (Delta Conveyance Design and Construction Authority 2022d:4).

To be clear, the interested parties who provided information (Sean Wirth, who was a terrestrial species stakeholder during some of the SEC process, provided this input after consultation with Dr. Gary Ivey) “that was used to identify a suitable location for the tunnel shaft on Staten Island” did not characterize the location as “suitable,” but very clearly indicated, on more than one occasion, that the location near the existing structures on the northeast side of the island was “less horrible” than other options. The placement of a giant access shaft right in the middle of ground zero for crane populations in the Delta is flawed through and through no matter where the tunnel shaft was placed on the island. The enormity of the structure would cause a permanent visual disturbance for cranes, which could result in the permanent abandonment of the temporary roosting area north of the proposed location because of the impaired site lines created by such a large structure, would disrupt both roosting and foraging during construction, and would pose a permanent strike hazard for cranes on very foggy and dark days because of its height.

The implementation of the CMP would be required to offset the loss of roosting and foraging habitat by creating roosting and foraging habitat and protecting agricultural foraging habitat for sandhill cranes (Appendix 3F, Attachment 3F.1, Table 3F1-3, CMP-18a: *Sandhill Crane Roosting Habitat*, and CMP-18b: *Sandhill Crane Foraging Habitat*), which would reduce the impact associated with habitat loss to less than significant.

The proposed CMP that uses Bouldin Island for creating new roost and forage sites for Sandhill Crane is inappropriate for impacts to cranes at Stone Lakes National Wildlife Refuge and the Cosumnes River Preserve because it does not benefit the populations that are impacted by construction of the intakes and the launch shaft and RTM storage planned for north of Twin Cities road. During the Terrestrial Stakeholder meetings back when the tunnel/s was part of the BDCP, there was agreement to build a roost

and forage complex that would bridge the Stone Lakes and Cosumnes River populations providing continuity between two of the populations of cranes that were going to be severely impacted by the project. This possibility still exists as a shadow in the current DEIR:

The CMP (see Impact BIO-1 for a summary discussion of the CMP) would offset the loss of greater sandhill crane and lesser sandhill crane roosting habitat by creating roosting habitat on Bouldin Island or in suitable lands that provide connectivity between Stone Lakes NWR and Cosumnes River Preserve, and managing these areas in perpetuity (Appendix 3F, Attachment 3F.1, Table 3F.1-3, CMP-18a: *Sandhill Crane Roosting Habitat*).

The use of Bouldin Island for the CMP gets significant analysis and discussion in this DEIR, whereas the connectivity option is only mentioned in the part of one sentence and is given no analysis or consideration beyond this half sentence mention. Bouldin Island might be an appropriate location to consider for impacts to cranes on Staten Island (which is only relevant if the central alignment options are selected), but it is useless to address the impacts to the Stone Lakes National Wildlife Refuge and the Cosumnes River Preserve crane populations. There should be a commitment to provide this connectivity and the FEIR should include the analysis and the consideration appropriate for the potential impacts of this more appropriate compensatory mitigation option to be compliant with CEQA.

The presentation of the potential conflicts with the SSHCP was neither accurate nor complete and as a result was quite misleading and portrayed the conflict as very negligible, which is not the case. It is important to understand that the SSHCP is divided into Preserve Planning Units (“PPUs”). Each unit features different geologies and ecologies and was designed with a specific focus of protecting specific covered species. The proposed massive-scale construction in and near Stone Lakes National Wildlife Refuge and the Cosumnes River Preserve – including the launch shaft and RTM storage site north of Twin Cities Road - is within PPU 6, which is an agricultural and grassland unit, as explained in the SSHCP: PPU 6 encompasses 95,196 acres outside the UDA in the southwestern portion of the Plan Area. PPU 6 is bisected by Interstate 5. It is bordered on the west by the Sacramento River, on the south by the Mokelumne River, and Dry Creek. The dominant land covers in PPU 6 are Agriculture (58,458 acres) and Valley Grassland (17,633 acres). All of the SSHCP covered birds have been documented in PPU 6, including 281 (71%) occurrences for Swainson’s Hawk, 190 (92%) occurrences for Greater Sandhill Crane, and 55% or more of the occurrences for Northern Harrier (*Circus cyaneus*) and White-tailed Kite (*Elanus leucurus*). Put simply, PPU 6 is the population stronghold for Greater Sandhill Crane and Swainson's Hawk.

Comparing the DCP area overlap to the entire footprint of the SSHCP is an irrelevant and useless comparison. The only worthwhile comparison would be with PPU 6. The overlap with PPU 6 is over 46%, which leaves a very different impression as to the potential level of conflict compared to the 14% overlap with the entire plan of the SSHCP presented in this DEIR in table 13-102. The biologically relevant overlap is large and concerning. This DEIR is aware of the overlap with PPU 6 but does not highlight it as the relevant unit for comparison but rather includes it in the context of the agricultural land and grassland the SSHCP needs for its conservation strategy (and it does so incorrectly, which will be

discussed later): “Approximately 50% of the SSHCP PPU 6 overlaps with the study area (Ch. 13, p. 449).”

This apples to oranges irrelevant comparison continues in table 13-103 and the discussion of the relationship between the impact acreage of the DCP and the total acreage of the HCPs, as well as for the acreage of the HCPs within the project area. Table 13-103 showed that, depending on the alternative, the proportion of surface impacts relative to the SSHCP plan area range between .1% and .2%. Again, we are presented with an extremely low number that would lead one to believe that there is no discernable conflict with the SSHCP – only a 14% plan overlap and an impossibly small .1 to .2% for surface area of impacts within the SSHCP. But this approach provides little useful information for what the scale of the actual conflict with the SSHCP is. A more appropriate way to understand the conflict is through the impact of the DCP on the “feasibility of acquisition” for the SSHCP in PPU 6.

But before discussing the “feasibility of acquisition,” it is necessary to consider whether or not the habitat acquisition for impacts by the project in the PPU 6 overlap area need to be mitigated within the footprint of PPU 6. Chapter 7 of the SSHCP indicates that 92% of occurrences and almost all of the high population usage roost sites for cranes, and 71% of the Swainson’s Hawks occurrences are in PPU 6. Greater Sandhill Cranes forage extensively within a 3.1 mile (5 km radius) of their roost sites (Ivey et al, 2015), and the vast majority of roost sites in the entire SSHCP Area are within PPU 6. Since many of the impacts associated with the DCP would occur within the footprint of the SSHCP and PPU 6, it is important that those impacts also be mitigated within PPU 6 such that the populations that are impacted receive the benefit of the mitigations. This is especially important for the impacts in Stone Lakes National Wildlife Refuge because the crane population there is the most constrained in the region with extensive urbanization to the north and the east. Similarly, the impacts to the Cosumnes River Preserve cranes will go on for more than a decade and using Bouldin Island or other far-flung locations will provide no relief or compensation for the cranes impacted there. The mitigations need to be provided within the ranges of the cranes that are impacted to compensate the populations impacted. Specifically, foraging habitat within the crane population stronghold in the SSHCP Area needs to be mitigated within that same stronghold; mitigation for foraging habitat loss also should be located within 1.2 miles of an active roost site to be the most effective. Similarly, the impacts to Swainson’s Hawks, White-tailed Kite and Northern Harrier should also be mitigated as proximal to the impacts as possible. This means that the habitat acquisition needs of the DCP must be considered along with the project’s impact footprint when examining conflict with the SSHCP. This translates to, at a minimum, doubling the impact footprint so that it includes at least a 1:1 mitigation ratio for compensatory habitat acquisition.

The Chapter 7 Conservation Strategy of the SSHCP lays out the habitat acquisition targets for each PPU in the Plan Area. For PPU 6, page 7-89 of the SSHCP (“Overview of Conservation Strategy in PPU 6”) states: “Approximately 9750 acres will be preserved in PPU 6. According to Table 7-2 (“Summary of SSHCP Preserve System and Existing Preserves by Planning unit”) on page 7-63 of the draft SSHCP, 28,079 acres of PPU 6 are already in existing preserves. And according to section 7.5.2.3 (SSHCP, p. 7-88), there are currently 3,436 acres of low-density development in PPU 6. Simple math (total acreage minus the land already preserved and the land already developed) yields a total of 63,657 acres of available inventory in PPU 6, not accounting for sea level or floodplain restrictions. And it should be noted that Swainson’s Hawk mitigation must be located above sea level to satisfy CDFW requirements.

Approximately 50% of the SSHCP PPU 6 overlaps with the study area (County of Sacramento et al. 2020: Figure 7-2). The SSHCP habitat conservation goal for PPU 6 of 8,465 acres of agriculture represents 14% of available agricultural land cover and 623 acres of grassland represents 4% of available grassland habitat in PPU 6 (County of Sacramento et al. 2018:7-87–7-88, Table 7-6) (Ch. 13, p. 449).

Using the citations provided, the way these calculations were done was by taking the 8,466 acres of agricultural land and 623 acres of grassland listed in table 7-6 of the SSHCP and dividing by 58,458 acres of agriculture and 17,633 acres of grassland listed as the “dominant land covers in PPU 6” listed in Chapter 7, page 88 of the SSHCP. As a ground truth to this math, adding 58,458 acres of agricultural land to the 17,633 acres of grassland yields a total of 76,091 acres. But as we already know from the math in the last paragraph, the inventory available to the SSHCP is not more than 63,657 acres, which is 12,434 acres less than 76,091. A closer look at the quote above exposes the problem. Those acreage amounts in those citations were not provided as available inventory but instead as “dominant land covers.” To figure out the available inventory one must do the math that we did in the last paragraph, which yielded 63,957 acres. There is not enough information in the SSHCP to figure out how much agricultural land and grassland is available in PPU 6 because percentages of the dominate land cover numbers (58,458 acres for agriculture and 17,633 acres) are included in the 28,079 acres of existing conservation. Since it is not possible to determine which portion of the 63, 657 acres is agricultural land and which is grassland, it makes sense to consider the entire combined 9750 acres in relation to the 63,657 acres, which indicates that for the conservation strategy of the SSHCP to be successful, 15.3% of all available inventory in PPU 6 would need to be acquired.

The SSHCP is only allowed to acquire properties to satisfy its habitat mitigation requirements from willing sellers and the reality is that some landowners may wish to sell, and some may not. This uncertainty is encompassed in the concept of the “feasibility for acquisition ratio.” Given the need for willing sellers, “the feasibility for acquisition ratio” represents how much habitat is available compared to how much habitat is needed for mitigation. If there are 100 acres of inventory, and fifty are needed for mitigation, the “feasibility for acquisition ratio” is 50%. The lower the “feasibility for acquisition ratio,” the more likely that enough willing sellers will be found to satisfy the acquisition requirements of the Conservation Strategy of an HCP.

The California Department of Fish and Wildlife (“CDFW”) maintained during the preparation of the SSHCP that the Plan should strive for a ratio of 15% or less. Beyond increasing the likelihood that enough willing sellers would be available to successfully implement the Conservation Strategy, such a low ratio would go a long way to avoiding what has happened in the Natomas Basin Habitat Conservation Plan where so little inventory can be found for mitigation, which has resulted in exorbitant prices being paid for rice fields. These costs and the lack of availability led to a developer purchasing Swainson’s Hawk mitigation within 200 feet of one of Sacramento Metropolitan Airports runways because little else could be found.

The effect on the “feasibility for acquisition ratio” is where the true conflict with the SSHCP becomes clear. As has already been established, the existing “feasibility for acquisition ratio” for the SSHCP for

PPU 6 is 15.3%. It is likely that if the land covers were able to be broken out by category (which there is not enough information to do), the feasibility for acquisition for agricultural land in PPU 6 would be quite a bit higher. The range of ground impacts from the DCP within PPU-6 presented in table 13-103 of this DEIR is 192.82 acres to 698.93 for the various alternatives. Those ranges need to be at least doubled to include the biologically appropriate habitat mitigations that need to be acquired within PPU-6. This causes the range to increase from 385.64 acres to 1,397.86 acres (one half for impact and one half for mitigation). Adding this range to the conservation target for the SSHCP in PPU 6 (9,750 acres) yields a range of 9,942.82 acres to 11,147.86 acres. Taking that range and determining the new “feasibility for acquisitions ratio” for the SSHCP combined with the DCP increases the ratios from the 15.3% without this project to a range of 15.9% to 17.5%. This is the best numerical indication and measure of the conflict with the SSHCP. PPU 6 is already a constrained landscape to work with to achieve 9750 acres of habitat acquisition based on the “feasibility for acquisition ratio” starting out a 15.3%, not accounting for restrictions due to elevation or floodplain. The DCP effectually reduces the available land covers in PPU 6 for mitigation and increases the “feasibility for acquisition ratio.” So, the DCP clearly conflicts with the SSHCP by driving its already too high “feasibility for acquisition ratio” even higher. Additionally, it is not clear how much overlapping conservation benefit—one habitat type benefitting multiple species—is planned in the proposed habitat acquisition mitigation or is even possible based on what might be available as inventory. So the number of acres needed in PPU 6 could increase for the DCP, making the ratio even worse.

### **Chilling Effect of Delta Conveyance Eminent Domain on Willing Sellers for the SSHCP**

The DCP can take land by eminent domain for both the project footprint and for mitigation. The use of eminent domain to condemn properties needed for mitigation would have a substantial chilling effect on the willingness of sellers to participate in the SSHCP. A competing project taking land away forcibly with eminent domain for mitigation in the same small area of PPU 6 by the DCP could paint the SSHCP in the same negative light for many prospective sellers. The negative consequences to conservation because of predictable reactions of landowners to widespread use of eminent domain cannot be overstated and it would be a grave mistake to discount them.

During a long series of terrestrial wildlife meetings for the earlier iteration of the DCP that was included within the BDCP, stakeholders pushed for Swainson’s Hawk and Greater Sandhill Crane mitigation to be done in the footprint of Elk Grove’s Sphere of Influence Amendment application that was rejected by the Local Area Formation Commission (“LAFCo”) in 2013. The reasoning was that it would be extraordinarily difficult for the SSHCP to acquire mitigation in that footprint because of the inflated land prices there from built up speculative pressure, and this land was prime habitat for Swainson’s Hawk, Greater Sandhill Crane, White-tailed Kite, and Northern Harrier; the area is also in immediate threat of being lost in the near future to urbanization.

It was suggested that purchasing mitigation acreage there would have a greatly reduced effect on the SSHCP because the Plan did not have the financial structure to purchase much in that geography—the fee structure has the cost of 1,000 such acres amortized over the cost of all of the agricultural mitigation acres. We promoted the value of creating a greenbelt south of Elk Grove to insulate the habitats found further south from urban pressure and the resultant spike in pricing due to speculation, improving on the

SSHCP's chances of acquiring the acres it needs there. It was further argued that this would help with the success of the SSHCP because in the absence of imminent urbanization, it could increase the willingness of sellers and maintain the affordability of purchasing mitigation properties.

The suggestion was rejected because this geography was not in the legislative boundary of the Delta and therefore would allegedly require legislation to amend that boundary if mitigation was to be contemplated there. And, since it was not within the project area of the NOP of the BDCP, that would need to be redone as well. But now, the DCP, like the Twin Tunnels iteration, is not beholden to the legislative boundary of the Delta and this is no longer a limiting factor. There would be substantial impacts from the construction and operations of the DCP to many of the species covered by the SSHCP, and many of those impacts, and the mitigation for those impacts, would occur within the same "inventory" footprint as the SSHCP, jeopardizing the success of the SSHCP. This suggestion would be a reasonable mitigation for the conflict with the SSHCP and the impacts to species within its footprint.

Table 13-106. Cumulative Impacts on Terrestrial Biological Resources from Plans, Policies, Programs (Ch. 13, p. 493) states:

The South Sacramento Habitat Conservation Plan (HCP) is a regional plan to address issues related to species conservation, agricultural protection, and urban development in south Sacramento County. Adopted in 2018, the HCP covers 40 different species of plants and wildlife including 10 that are state- or federally listed as threatened or endangered, and allow landowners to engage in the "incidental take" of listed species (i.e., to destroy or degrade habitat) in return for conservation commitments from local jurisdictions.

The 2010 draft of the SSHCP had 40 covered species, but the Plan adopted in 2018 had 28 making one wonder if an older version of the Plan was referenced for the preparation of some of this DEIR. A careful examination should be done to ensure that all references to the older Plan are corrected to reflect the content of the adopted version.

Environmental Commitment EC-14: *Construction Best Management Practices for Biological Resources* (Appendix 3B) would reduce the potential for the introduction and spread of invasive plants by ensuring that equipment used is cleaned and inspected before entering new areas.

EC-14 (chapter 3b-27) only commits to cleaning and inspecting vehicles that will enter aquatic habitats. It only calls for cleaning of terrestrial vehicles, not the inspecting.

30.) All equipment used for construction and habitat creation, enhancement, and management will be cleaned prior to entering work areas and before moving between work areas.

31.) Equipment to be used in aquatic habitats will be thoroughly cleaned and inspected for aquatic invasive plant propagules and animal species before entering aquatic habitats.

Given the threat of transporting terrestrial invasive plants, all equipment needs to be both thoroughly inspected and cleaned irrespective of whether it will be used in terrestrial or aquatic habitats.

### **XIII. Land Use**

“Certain topics” discussed in this section are related to topics discussed in substantially greater detail in other sections of this DEIR (Ch. 14, p. 3). We recommend that DWR:

- Provide a listing of “certain topics” and justifications for at least a three-part ranking of minimal, medial, and “substantially greater” details, along with other designated sections. Provide CEQA references for such differences in settings and assessments.
- DEIR/DEIS has too many scattered assessments and mitigations and figure descriptions thereby rendering the document as “Not Public Review Friendly” due to cross-sectional assessments and references and lack of proper referencing between related sections.
- Provide a Subsequent/Supplemental DEIR where all subjects are covered equally for all alternatives, including those recommended additional alternatives, e.g., upgraded levees and channels and a straight inlet-southern termini tunnel (42 vs 48 miles).

The DEIR states that the Land Use chapter does not describe the land use setting or potential DCP effects in the SWP/CVP export service areas but refers reviewers to Chapter 31, Growth Inducement.

- Inadequate and incomplete land uses assessment, mitigation, and alternative comparisons are provided for the limited array of alternatives, and without numerical/quantified comparisons, this section is totally inadequate and not compliant with CEQA’s requirements for alternative comparisons.
- DWR should provide construction and operational impacts assessments for all alternatives and provide comparisons of proposed and additional alternatives with numerical/quantified parameters of comparisons.
- DWR should provide direct DCP impacts of construction and presence for 100 years or periods equal to those of growth inducements for service areas.

Both Chapter 14 and Chapter 31 discuss the topic of growth inducement. The DEIR states that Chapter 14 addresses the potential to induce substantial unplanned population growth and the potential to displace substantial numbers of people and housing are also discussed (Ch. 14, p. 9), while indirect impacts related to growth are also discussed in Chapter 31 including analysis of the direct growth inducement on employment, the extent of indirect growth inducement associated with construction of access roads which may remove an obstacle to growth of lack of roadway infrastructure, and indirect growth inducement associated with increased water supply reliability. DWR must:

- Provide integrated review for land use induced development due to employment increases when no additional water supply will be provided.
- Provide Department finances and relevant Associated Government regional 5-year projections for 25 years of population, households, and jobs for affected project and service area regions, counties, and cities for the period of construction and a 25-year period of operations.
- Provide numerical/quantified values of comparisons.



The DEIR claims that materials transport would utilize road and rail and would not have the potential to divide existing communities. DWR should provide numerical/quantified values of construction duration for each alternative, number of round trips through each community, and those for distribution of RTM if prolonged beyond the physical construction period. Disposal of spoils and RTM is described in detail in Chapter 3, Description of the Proposed Project and Alternatives. DWR must:

- Provide definitions and estimated annual volumes of “Spoils” vs RTM for each alternative and their initial construction period and operational permanent dispositions.
- Provide long term Electricity Grid Improvements for construction periods and then continuing operations for each alternative and the potential improved electrical services for DCP construction and for pumping operations.

According to the DEIR, the project alternatives would not induce substantial unplanned population growth either directly or indirectly, because the DCP does not propose to develop new homes or businesses and proposed roadways are provided to construct project facilities and access conveyance facilities (Ch. 14, p. 23). DWR should:

- Provide a definition of growth inducement based on induced employments and facilities/materials provisions. Provide official State/Regional current projections of population, households, and jobs for 2025-2050 and provide comparisons of the same for a period of construction for each alternative and for initial (e.g., 2040-2065) operations periods.
- Provide definitions and numerical/quantitative designations for a three-part designation (minimal, moderate and substantial unplanned growth).
- As the DCP requires major construction efforts far exceeding the government's internal capacities, the DCP would support many businesses and commercial entities in the Delta area for many years (e.g., 20-30) and thereby support expansion of populations within the Delta and thereby is Growth Inducing. Provide projections of land uses for each current alternative and for those referenced elsewhere in these comments.
- Given the services required for the construction and operations of the DCP, provide estimates of project-induced Power Grid system/facilities, Roads/Access, Fencing, and RTM remaining and stabilized for agricultural uses.

#### **XIV. Recreation**

This section of the DEIR is narrowly focused on what people do when they recreate in the Delta. They adequately cover the geographical locations of marinas and parks, and using survey information estimate what people are doing and how long they are doing it. Their main analysis focuses on the impacts to these recreational activities from the construction, operation and maintenance of the DCP.

This narrow focus ignores a key issue: how does this project improve water quality in the Delta? The DEIR quotes the Delta Reform Act of 2009, which calls for the coequal goals for the Delta of “providing a more reliable water supply for California and protecting, restoring, and enhancing the delta ecosystem.” (Ch. 16, p. 33). Relative to recreation, protecting, restoring and enhancing the Delta ecosystem is paramount.

One important step in protecting the Delta ecosystem is to ensure that adequate flows of fresh water flow through the Delta. The lack of adequate flows is apparent right now in harmful algal blooms that endanger children and pets and stagnant, weed-filled channels that provide habitat for non-native species. The Recreation section of the DEIR should be amended to address the impacts of inadequate flows and poor water quality on human recreation. The DEIR also needs to address how the DCP will protect, restore and enhance the Delta ecosystem.

The DEIR states “Desalination projects would most likely be pursued in the northern and southern coastal regions. The southern coastal regions would likely require larger and more desalination projects than the northern coastal region in order to replace the water yield that otherwise would have been received through the DCP. These projects would be sited near the coast.” (Ch. 16, p. 22). The DEIR provides no evidence for this bold statement. The DEIR needs to be amended to explain the source of this statement and why DWR thinks it is true. Alternatively, this statement should be stricken from the DEIR as it is purely speculative with no scientific evidence to back it up.

Furthermore, the DEIR states, “The 2019 biological opinions issued by the National Marine Fisheries Service (NMFS) and USFWS facilitate Delta habitat restoration.” (Ch. 16, p. 34) DWR needs to explain which biological opinions it is referencing, and whether reasonably foreseeable changes to the biological opinions will affect the project. At least some of the biological opinions are the subject of ongoing litigation and may not apply to this project.

## **XV. Socioeconomics**

The SWP is “user financed” and Metropolitan Water District (MWD) will pay for 65% of DCP costs, but Agricultural districts will receive 70% of the water. This violates the beneficiary pays principle in the case of well users and some MWD member agencies who do not receive SWP water. This is not fair to those MWD member agencies, especially in environmental justice communities like those in Los Angeles County.

The mitigation stipulated for acquisition of privately held, active farm land that is providing tax money to the local community. Some of this land will remain with the project as it will be needed to provide necessary facilities and services in support of the DCP. However, other sections of the DEIR make reference to the possibility of returning unneeded land to farming, using it to provide habitat or other unspecified purposes. Recovery for loss of local taxes is provided for, but a timeline is not provided detailing how long mitigation will last. The DEIR must provide a full description of any mitigation measures it plans to pursue, including a projected timeline for that mitigation.

“Construction activities associated with the launch, reception, and maintenance shafts for the tunnels under all alternatives would also bring undesirable noise and dust and equipment emissions along with changes in the visual environment that could, in limited locations, adversely affect the quality of experiences boaters, anglers, sightseeing public and wildlife viewing enthusiasts currently find in and around the Delta waterways. Increased traffic on roads can also hinder or slow access for recreationists to Delta destinations or periodic events. Construction is planned to take place for 10 hours a day, Monday

through Friday, for most of the construction period.”(Ch. 17, p.73). Construction of the tunnel will likely be more constant (24 hours/day, 365 days/year) than the DEIR anticipates, especially after the Tunnel Boring Machines are at least 25% into their segment length. TBMs, ventilation, RTM muck transport, and passage through the shafts must be virtually continuous and any interruption becomes very expensive very quickly. DWR should revise the section under the assumption that construction of the tunnel would operate continuously. DWR should also provide a typical year-monthly-weekly-daily schedule for tunnel construction activity and revise the above consistent with real TBM operations and all of the other related activities (e.g., ventilation) and their noise levels.

## **XVI. Cultural Resources**

There are 31 identified built-environment historical resources within the AI-BE for all of the project alternatives. Each of the project activities listed in Section 19.3.1.1 has the potential to affect built-environment historical resources through the construction of new features within the setting of built-environment resources, the alteration of existing features within the setting of built-environment resources, or the physical alteration of character-defining features within the boundaries of built-environment resources (Ch. 19, p. 37). All of the project alternatives have the potential to cause a significant impact on built-environment historical resources. Construction of DCP features may require physical alteration of 9 built-environment historical resources. Construction may also result in changes to the setting of 22 built-environment historical resources.

Both material alterations to the integrity of materials, design, or workmanship, as well as material alterations to the integrity of setting, feeling, or association would impact the historical resource by removing character-defining features of the resource or altering the resource’s character, resulting in an impairment of the resource’s ability to convey its significance. For these reasons this would have a significant impact. Mitigation Measure CUL-1: Prepare and Implement a Built-Environment Treatment Plan in Consultation with Interested Parties may mitigate these effects, but cannot guarantee they would be entirely avoided. The scale of the Delta Conveyance Project and the constraints imposed by other environmental resources would make avoidance of all significant impacts unlikely. For these reasons, even with implementation of the following mitigation measure, this impact would be significant and unavoidable (Ch. 19, p. 44). How does DWR intend to quantify the invaluable? To replace irreplaceable sites?

## **XVII. Energy**

The use of California power for pumping through the DCP makes it more difficult to achieve the State’s electricity zero goals of 90% by 2035 and 95% by 2040 (Ch. 22, p. 22). The peak additional load during an estimated 13 years of construction of 200 to 500 GWh/yr (averaging about 100 to 200 GWh/yr) is about 0.2 to 0.5% of CA electricity load, equivalent to the annual electricity use of 20 to 40,000 homes) is huge. The DCP would connect to the California Aqueduct, California’s largest energy user. Imported water continues to be incredibly energy-intensive. The Compensatory Mitigation Plan (Ch. 22, p. 22-30) is absurdly small for such a massive project, and includes the use of fuel.

The DEIR is inconsistent regarding the additional energy demand of the project, sometimes saying “15 GWh per year,” while in other places saying “993 GWh/yr” (Ch. 22, p. 28). The DEIR needs to be revised to clarify the project’s associated energy demand, and updated with SB 102- created clean energy targets of 90% by 2035 and 95% by 2040, advancing the state’s trajectory to 100% clean energy by 2045 (Ch. 22, p. 22, ln. 32).

This statement is unsupported “Given that the project would incorporate design and operational efficiencies described above in Impact ENG-1 and energy would be supplied from existing SWP and CVP sources, it would not conflict with any state/local plan, goal, objective or policy for renewable energy or energy efficiency” (Ch. 22, p. 22, ln. 32). The EIR does not present a detailed plan or cost projections to show how and at what cost all “energy would be supplied from existing SWP and CVP sources.” In the absence of a plan and cost analysis, we have to assume that some of the needed 200 to 500 GWh/yr for construction and 993 GWh/yr for ongoing operation will have to come from other renewable energy sources. The DEIR must be revised to provide clarification and evidence to support this point.

Table 22-17 lists potential impacts to energy demand, but the DEIR does not include mitigation for losses of energy development.

Table 22-0 provides a summary comparison of important impacts on energy by alternative. The CEQA findings are applied only after all mitigation is applied. The Table should also include in its consideration of impacts the energy needed to construct the alternatives and the energy required for operation.

All of the project alternatives would require the use of electricity during both construction and operation, and would initially consume gasoline and diesel fuels through operation of heavy-duty construction equipment and vehicles (Ch. 22, p. 1). The maximum consumption of electricity during construction is expected to occur during tunnel boring for all project alternatives. During construction, it is expected that Alternative 4a would require the most electricity (about 2,717 gigawatt hours [GWh]), and Alternative 4b would require the least electricity (1,103 GWh). Fuel consumption for on-road and off-road construction equipment is expected to be highest for Alternative 4a (about 50 million gallons of gasoline and diesel), and Alternative 2b would require the least amount of fuel (32 million gallons of gasoline and diesel). Missing from this section is:

- No discussion regarding years and GWh/Yr for power – TBM, ventilation and RTM pumping and for materials production – concrete and rebar.
- No discussion of operations energy use 25-50 years, head-losses, and pumping.

This section (Ch. 22, p.3) describes the existing energy resources available within the study area and analyzes the potential effects to these energy resources from construction and operation of the project alternatives. It neglects the energy projected to be consumed by:

- Tunnel boring machines (TBM)
- Batch plants and segment fabricators
- Shaft segments
- Transport of tunnel segments – weight vs distances – rail or rubber

Hydropower energy generation is a major project purpose for the SWP and CVP (Ch. 22, p.3). Hydropower energy has always been an important part of the benefits and financing of state, federal, and private water resources developments in California. Runoff from the Sierra Nevada and Cascade Mountains provided great potential for hydropower development, which has now been harnessed to pump water supplies into the SWP and CVP canals, the San Luis Reservoir, and water distribution systems. DWR should clarify:

- Past tense – provided vs potential - runoff and releases during climate changes
- Hydraulic uses – constant/24-7 vs Hydraulic and Variable Use-loads
- Drought – kwh costs

Electrical energy needs for construction were evaluated based on the estimated annual energy required for each alternative (Ch. 22, p.16). The construction energy requirements were estimated from the facilities that would require electrical energy during construction for each alternative. The construction-related energy demand is considered temporary (i.e., would cease once construction is complete). Construction of the DCP water conveyance facility would require use of electricity for...lighting, tunnel ventilation, tunnel boring, earth removal from the tunnels, and other construction machinery (Ch. 22, p.17). There is no comparison of alternatives and construction energy uses. DWR must provide further details of:

- Concrete for segment fabrication
- Steel fabrication for TBM and connections and for Concrete rebar
- TBMs, ventilation, pumping, and segment transport Lifts 24/7/365 vs. Normal 6am-6pm construction

As explained in the air quality analysis, DWR has included Environmental Commitment EC-13: DWR Best Management Practices to Reduce GHG Emissions, which includes a commitment to using alternatives fuels such as solar power to power generators to the maximum extent feasible (Ch. 22, p. 17). DWR should provide the definition of “feasible” and “maximum extent feasible.” DWR should provide further details on:

- Solar vs Diesel Daylight vs 24/7 30/12 no holidays
- Compare energy uses by alternatives
- For materials formation/fabrication for tunneling: TBM power and duration and tunnel operations for total days x rate/day; ventilation lighting, and muck removal

Solar generation at this site would be pursued and developed if found to be feasible (Table 22-6). DWR should:

- Provide definition of feasible, practical, and/or viable and provide definition without any economic/fiscal parameters
- Clarify 24/7 Loads – TBM, rail, elevators, ventilation muck pumping vs 6am-6pm

Indirect impacts on energy within the Delta may occur under the No Project Alternative as the result of changes in upstream hydrologic conditions, sea level rise, and continued seismic risk to infrastructure (Ch. 22, p. 24). In addition, immediate, and potentially long-term, changes in energy resources could occur under the No Project Alternative because of seismic events and the inundation of infrastructure within the Delta. DWR must provide Project alternatives for meaningful numeric/quantified comparisons for No Project – Reinforced Levees, including thickening bases and raising heights and inserting permeable barriers and structural caps.

Construction of desalination projects, groundwater management projects, water recycling projects, and water use efficiency projects to meet water suppliers' needs would result in the short-term consumption of energy from construction of the facilities and would vary depending on the nature and duration of construction (Ch. 22, p. 26). DWR should:

- Provide for a “Water Purification Alternative” (say Alt. #11) for continuing and repetitive reuse of local and existing SWP supplies for local service. Provide for completion of such within the same time period as tunneling and commissioning. Provide numerical/quantified comparisons of all alternatives for the same elements.

The No Project Alternative in combination with other cumulative projects is not expected to cumulatively affect energy resources or result in wasteful, inefficient, or unnecessary use of energy (Ch.22, p.40). Ongoing and reasonably foreseeable future projects may affect regional energy use; however, projects associated with the No Project Alternative (water recycling, desalination, and groundwater extraction) would not create substantial demand that would cumulatively affect net energy resources or energy use for SWP and CVP south-of-Delta pumping. Therefore, this energy impact would not be cumulatively considerable.

## **XVIII. Air Quality and Greenhouse Gasses**

The DEIR says DWR will make a future plan that “will identify the specific GHG reduction strategies that will be implemented to meet the net zero performance standard for the covered phase and quantify the expected reductions that will be achieved by each strategy” (Ch. 23, p. 23). This DEIR fails to specify the details or costs, which should be included in the DCP plan and cost. Moreover, it does not show how it will “meet the net zero performance standard.” In Table 23-75, annual emissions from construction of the initial compensatory mitigation sites would exceed the analysis threshold of net zero emissions.

According to the DEIR, additional channel margin and tidal habitat may be created within the North Delta Arc as part of the Compensatory Mitigation Plan that could increase construction emissions, although the specific design criteria required to support emissions quantification are not yet developed. This would have a significant impact. However, it goes on to say that implementation of Mitigation Measure AQ-9 would mitigate emissions from construction to net zero through the development and implementation of a GHG mitigation program. This measure ensures emissions from construction of the compensation mitigation restoration sites would not result in a significant GHG impact. Therefore, DWR concludes the project alternatives combined with compensatory mitigation would not change the overall impact conclusion of “less than significant with mitigation.” Again, the DEIR fails to specify the details or costs

of “a GHG mitigation program,” which should be included in the project plan and cost. Thus it does not show how it will “meet the net zero performance standard.”

The DEIR must be revised to identify the details of the GHG mitigation program, and substantiate its claims that it will meet a net zero performance standard.

## **XIX. Hazards, Hazardous Materials, and Wildfire**

Under all project alternatives, there is the potential to encounter hazardous materials through the handling of reusable tunnel material (RTM), excavation and tunneling near oil and natural gas production facilities, and while tunneling near gas fields (Ch. 25, p. 1). Chapter 25 is inadequate and incomplete with regard to all tunnel and shaft construction activities and all aspects of oil and gas fields and facilities. DWR must provide thorough description, assessment, and mitigation for RTM hazards as they differ markedly from the more direct impacts of tunneling and shaft excavation for wells and pipelines.

Active oil and gas extraction fields are present throughout the study area (Ch. 25, p. 6). Petroleum production in the study area mainly consists of natural gas extraction, though minor quantities of crude oil and condensate are also produced. The locations of active wells can be determined with relative ease; however, the locations of abandoned or plugged wells may be unknown due to inadequate or missing data or poor record keeping (Ch. 25, p.7). DWR should be conducting additional analysis and surveys to figure out where unknown wells are in the project area and give further explanation of EDR.

The DEIR states: “Other oil and gas exploration and production activities that can release hazardous materials into the environment, where they may be encountered during excavation or construction, include drilling, production,...to refineries and processing facilities. Oil and natural gas pipelines are also present throughout the study area and several pipelines are aligned west to east across the study area’s southern half (Figure 25-1). A discussion of oil and natural gas resources in the study area is found in Chapter 27, Mineral 27 Resources.” DWR needs to provide further information on the significance data, and plans for mitigation.

Regarding Figure 25-2. Oil and Gas Wells, DWR should provide alternative alignments along with oil/gas fields and well maps from CalGEM Div. Dept. of Conservation.

Oil and Natural Gas Wells and Processing Facilities Mapped locations of oil and natural gas wells and processing facilities within the construction footprints (Figures 25-1 and 25-2) were overlaid to assess the relative risk of disturbing a well or encountering petroleum products or processing chemicals in soil or groundwater, respectively. The numbers of oil and natural gas wells within the study area were obtained from publicly available data on the California Energy Commission’s California Natural Gas Pipeline and Station ARC/GIS website. DWR must provide an explanation for the use of secondary compilations referred to and compare those used with the primary data sources (Dpt. Conservation CalGEM, Well Finder) or historic (1922-1980) aerial photos. DWR must also provide primary sources rather than those derived sources and provide historic aerial photos of alternative alignments.

In Section “25.3.2 Thresholds of Significance,” there is no mention made of gas wells or pipelines and related surface facilities. (Ch. 25, p.27). There is no mention of gas wells and depth of tunneling and chances of encountering known/unknown well casings, gasses, and fluids. DWR must provide details of any historic wells within 100ft of the tunnel alignments or tunnel shafts. Assume that all gas wells included gathering gas lines from well heads to field processing facilities and coordinate identification of prospective gas gather lines with wells and tunneling shafts. DWR must also provide similar discussions for gas fields and more than 10 wells within 5000 ft of the proposed tunnel alignments.

The DEIR states that “Hazards associated with oil and natural gas production include emissions of BTEX compounds as well as n-hexane and other volatile organic compounds. Abandoned and plugged oil and natural gas wells may be present in areas where excavation is planned. Improperly sealed natural gas wells have the potential to act as natural gas conduits from deep reservoirs where flammable gasses may pose hazards to excavation or tunneling activities....Two active natural gas wells have been identified in the project footprint. The first is located near King Island just outside the footprint of the eastern tunnel alignment. The second active gas well is located within the footprint of the central tunnel alignment on Staten Island. Pre-excavation surveys would identify, confirm, and pinpoint exact locations of oil and gas wells to ensure tunnel excavation does not intersect with pipelines [wells]. As a result, tunnel activities are not expected to intersect with any natural gas wells [or pipelines].” (Ch. 25, p. 38)

DWR must:

- Provide clarifications for methane vs other typical natural gas associated gasses, including H<sub>2</sub>S and PAH and nm-VOCs. Natural gas = odorless field methane/CH<sub>4</sub> which is included in VOCs, but not amongst PAH/BTEX/n-hexane.
- Provide a full range of toxic and combustible gasses from the gas fields and production systems within the Delta.
- Provide detailed review of all gas fields and wells within 5000 ft of any DCP facility and provide all appropriate information regarding potential encounters during the DCP.
- Provide clarifications for pipelines/wells and shafts and tunnels.

Additionally, tunnel boring machines would be at >100 ft depth but could encounter known and unknown well casings and well casings at depth but not pipelines. Excavation of DCP shafts would have a higher likelihood of encountering pipelines and well heads (surface/production casings). Wells are not pipelines, and wells do have two-four casings near the surface, <50ft depth, which could be encountered from the surface to tunnel depths. Few if any pipelines would be expected at tunnel depths (>100ft bgl), therefore impacts would only pertain to shafts construction.

“All alignment tunnels (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, 4c, and 5) would cross several natural gas pipelines. Some of the facilities under all project alternatives would be excavated within an area of natural gas fields [above]. The natural gas pipelines are generally located near the surface, with depths of less than 10 feet below the surface and pipe diameters less than 24 inches. The top of the tunnel excavation nearest the natural gas lines would be approximately 115 to 120 feet below the surface. Pre-excavation surveys would identify pipeline locations to ensure tunnel excavation does not intersect with pipelines. In addition, tunnel shafts and tunnel facilities would be significantly deeper.” (Ch. 25, p. 38). Shafts start at



the surface and this statement is correct only for tunnels and upper 25% portions of shafts. DWR should revise the DEIR to:

- Provide clarification regarding all surface facilities and their construction, compared to the lower half of the Shaft, e.g., upper 20ft vs lower 100+ft off shaft.
- Provide similar clarification for wells/casings and tunnels and shafts.
- Provide two types of gas monitors (one for buoyant methane and one for heavier gasses (C4-C6+)) on every shield and during shaft construction and operations.

During the design phase of the project, DWR plans to conduct additional desktop surveys of documented wells and include research of historical topographic mapping that may document the presence of wells that were not previously identified in the California Geologic Energy Management Division (CalGEM) oil and natural gas database (Ch. 25, p. 39). The locations of identified wells within the tunnel alignment would then be used to determine methods to abandon, relocate, or avoid the wells (Delta Conveyance Design and Construction Authority 2022a:104; 2022b:66). References made in this section to "Design Phase" and future design documentation/revisions clearly indicate that the DCP DEIR is premature and thereby totally inadequate and incomplete. DWR must provide for a future supplemental/subsequent DEIR and retrieve the current documents as premature and recirculate a complete and adequate, design based, DCP DEIR at a later date. Additionally, in a future DEIR such document "surveys" and reviews cannot identify unrecorded wells and must be augmented with reviews of historic aerial photographs for all tunnel alternative routes. DWR must provide for detailed acquisition and review of historic aerial photos for DCP alternative areas/corridors.

In addition, during the design phase, a comprehensive exploration program would be conducted using the suitable geophysical methods to identify and/or confirm the location of well casings along the alignment, including wells that have not been previously identified (Ch. 25, p.39). Exploration with magnetometer "surveys" and reviews may not identify unrecorded wells especially if casings have been "pulled." This usually occurs in the the upper 100ft of casings and must be augmented with reviews of historic aerial photographs for all tunnel alternative routes. DWR should provide for acquisition and review of historic aerial photos of all alternative alignments in order to provide direct evidence of well location along all alternative alignments and at shaft sites. Moreover, as described above, the reference to "design phase" indicates that this DEIR is premature, inadequate, and incomplete

The DEIR states, "These measures to identify and avoid oil and natural gas wells that would potentially pose risks to DCP personnel or facilities would reduce the potential impact of encountering hazardous constituents from abandoned or previously unidentified oil and gas wells." (Ch. 25, p. 39) "These Measures" are not formally mitigation for clearly significant impacts if realized but relate to the DCP's PRE-Design phase, which has been repeatedly referenced as being in a "Pre-Design" phase of project development. The "Design Phase" must include all relevant maps, drawing, and documents for all wells, locations established with historic aerial photos, and confirming field surveys and magnetometer locations of any well, pipeline, or even tank bottom/foundations. DWR should provide additional TBM facilities for direct metallic and gas sensors and monitoring in all shafts, tunnel ventilation air, muck pipelines, discharges, containment, and TBM tunnel faces.

Tunnel boring operations for the DCP in areas with a potential for flammable gasses would be required to include redundant safety features and practices, and TBMs are required to be equipped with gas monitoring equipment that automatically shuts down the TBM if gas is detected (Ch. 25, p.39). Based on southern California experiences, all TBMs must be equipped with dense gas (BTEX/PAH + H<sub>2</sub>S) monitors near their bottom and lighter than air gasses (i.e., CH<sub>4</sub> methane) near the top of the TBM. DWR should provide realistic protection at and near the face (e.g., shelter/escape pods) and at regular intervals along the tunnels. DWR should also provide for Shutdowns/Shelter-In-Place and Evacuation – containment cells and increased ventilations.

The DEIR includes desktop surveys, research of historical mapping and potentially airborne surveys and site-specific surveys to identify and avoid abandoned oil and gas wells. (Ch. 25, p.42). We recommend DWR supplement its review with historic aerial photos (1920s-1960s) that may be available and are far more reliable than maps.

This chapter's numerous references to the project design phase and future research and documentation indicate that the DEIR is premature and inadequate.

## **XX. Public Health**

There are concerns to public health impacted by the DCP construction or operations from legacy pesticides, vector-borne diseases, trace metals, and mercury/methylmercury. A “no project alternative” that includes improvement to levees and infrastructure would allow better flow to prevent stagnation and buildup.

Legacy pesticides include primarily organochlorine pesticides, such as DDT and “Group A” pesticides, and hexachlorocyclohexane are already highly persistent in the environment, including in sediment and fish tissue. The presence of these chemicals already in existence indicates a need for improvements in the Delta, but the options need to be more than doing nothing at all or building a \$40 billion conveyance system.

All project alternatives' construction may cause temporary increases in stagnant water, resulting in increased vector-borne disease, which could have a "significant impact." All project alternatives construction (but not operations) may cause ground disturbance that could result in precipitation-related soil erosion and runoff to surface water bodies in the study area. Any existing trace metals, pesticides, other contaminants, or organic matter in the soil could incrementally increase concentrations in surface water. Although programs to prevent mosquitoes from breeding and multiplying are in place throughout the study area, the incremental contribution of implementation of aquatic habitat restoration as part of compensatory mitigation to the cumulative effect on public health could be cumulatively considerable and significant.

Despite regulatory programs, a key challenge surrounds the pool of mercury deposited in the sediments of the Delta, which cannot be readily or rapidly reduced despite efforts to reduce loads in Delta tributaries, and which serves as a source for continued methylation and bioaccumulation of methylmercury by Delta biota. Existing cumulative condition for mercury/methylmercury in the Delta is considered significant.

When the effects of the project are considered in combination with the effects of projects listed in Table 26-9, the cumulative impacts on public health are potentially significant. The DEIR states that there would be little change in EMF, DOC, trace metals, mercury, and pesticides in the Delta under the No Project Alternative relative to existing conditions.

Sierra Club California has asked repeatedly not only for a “no project alternative,” but one that includes improvements to existing levees and infrastructure. These improvements could improve the flow of freshwater, reducing buildup of heavy metals and pollutants and preventing stagnation, which thus prevents vector-borne disease.

## **XXI. Mineral Resources**

The Mineral Resources chapter repeats much of the Oil and Gas Resources Chapter 25. DWR should rewrite this chapter and include a full, design-based DCP DEIR. The revised DEIR must provide a full survey and review of historic aerial photos 1920-1960s to confirm and pinpoint well locations and confirm locations with field-gas-magnetic surveys. The revised DEIR must also provide a Hazardous Wastes assessment for all such facilities within 500ft of a specifically located DCP facility.

## **XXII. Paleontological Resources**

The DEIR states that the impacts of tunneling and ground improvement cannot be mitigated and would cause a significant and unavoidable impact for all project alternatives (Ch. 8, p. 1). DWR must define “ground improvement,” such as ponding RTM discharges and grouting. Additionally, impacts can be mitigated even where they cannot be directly surveyed and monitored by compensatory measures related to the same conditions and activities, as for many different biological impacts. DWR should provide for compensatory paleontological mitigation for 40+ miles of tunnels and shafts for potential impacts on fossil resources, with foot-by-foot sampling and analyses for micro- and larger biota along with detailed mineralogical and sedimentologic sampling and analysis.

While tunneling is largely impossible to mitigate as there is little direct observation earth/rock exposed, some compensation can also be achieved by careful monitoring of shaft excavations generally to or below the tunnel levels. Additional monitoring and inspections of excavated shaft surfaces at and below the tunnel levels can compensate for total lack of monitoring for the tunnel boring impacts. Such monitoring of the deeper levels of excavation also mitigates impacts to archaeological resources. DWR must provide compensatory trial shaft excavations, which may also compensate for some of the expected significant impacts to all paleontological resources.

In Table 28-0 , the DEIR lists impacts to paleontological resources as a result of surface ground disturbance for all alternatives as less than significant (Ch. 28, p. 2). Generally the surface disturbance includes both excavation and filling/covering of near-recent deposits which contain fossils, including diatoms, ostracods, fish bones, and many other marine/estuarine animal remains. Although not as unique and important as lower Pleistocene fossils, any fossil remains must be considered important and recovered

and documented to have fewer impacts overall. Burial does not directly adversely impact fossils, although burial can impact more recent Pleistocene and Holocene fossils.

The DEIR must be revised to include monitoring of impacts to paleontological resources, and mitigation for any resources affected.

### **XXIII. Environmental Justice**

The DEIR claims that if the DCP is approved and completed, project operations are not expected to result in disproportionately adverse effects on minority and low-income communities in the environmental justice (EJ) study area. Rather, “Improving water supply and water quality reliability, seismic and climate change resiliency, and operational flexibility to protect aquatic conditions in the Delta would have no adverse effect, and would have potentially beneficial effects, on EJ communities within the DCP’s footprint in the Delta” (Ch. 29, p. 1). DWR’s stated purpose of the DCP is to enhance seismic resiliency and help reduce the impacts of climate change on the SWP. However, there is an immediate risk of Delta levees being breached and/or failing due to flooding and seismic activity. EJ communities cannot wait 20 years for resiliency against these impacts. Delta levees must be strengthened and restored now. The DCP is not the solution to climate change. Restoring and strengthening existing Delta levees and infrastructure, along with increasing freshwater flows in the Delta, will both mitigate damage from seismic activity and reduce impacts of saltwater intrusion.

According to the DEIR, “Significant impacts were also identified for flood protection; groundwater; soils; fish and aquatic resources; terrestrial biological resources; hazards, hazardous materials, and wildfire; and paleontological resources, but they were not carried forward for detailed analysis in this environmental justice assessment because environmental commitments or mitigation measures would reduce impacts to a less-than-significant level, or, in the case of paleontological resources, unavoidable impacts would not affect environmental justice” (Ch. 29, p. 2). EJ communities in the Delta rely on fish populations in Delta waterways for sustenance. Per the [“Your Delta, Your Voice” Environmental Justice Community Survey](#) released by the Department of Water Resources in 2021, “Fishing in the Delta is a way of life. For 90% of the fishing locations respondents identified, they indicated that they eat fish from the Delta four or more times per week.” The qualitative analysis provided in the DEIR does not provide an adequate assessment of quantitative impacts on fishing in the Delta and the communities that rely on them. The DEIR must be revised to include detailed assessment of the DCP’s impacts on the identified resources and how they will affect Delta Communities.

If the DCP was not approved and constructed, climate change and other natural processes and ongoing human activities would continue. The DEIR claims that how ongoing or changing conditions would affect environmental justice would depend on unknown individual, social, institutional, and political responses to change (Ch. 29, p. 2). The science is very clear that the lack of freshwater flows in combination with warmer temperatures increases the frequency and intensity of Harmful Algal Blooms (HABs). Algal blooms produce both air and water toxins that are dangerous to humans and wildlife. Additionally, more pollutants and HABs will increase contamination in fish populations that are a regular source of food for many Delta residents. Freshwater flows are critical in flushing out pollutants and preventing the

proliferation of HABs. The DEIR must be revised to address the well-known implications of climate change, including HABs, and their potential impacts on Delta residents.

The DEIR states, “Effects could be adverse for minority or low-income individuals or businesses if projects limit water uses in a way that reduces employment opportunities, such as by reducing agricultural land in production or by increasing the cost of water in the Delta or the SWP service areas” (Ch. 29, p. 2). Freshwater flows mitigate against saltwater intrusion. Salinity intrusion impacts water supplies for communities and Delta farmers. Family farmers in the Delta will not be able to use the highly-salinated water to irrigate crops. Without advanced treatment, water quality in many Delta communities will decline. This will have a disproportionate and adverse impact on low-income communities as well as small, local farms in the Delta.

This chapter only mentions “reusable tunnel material” (RTM) once: “The DCP footprint is the area in which temporary or permanent physical effects of the project may occur—intakes, tunnel shaft pad sites, reusable tunnel material treatment and storage areas, and Southern Complex or Bethany Complex facilities, along with parking areas, power and supervisory control and data acquisition lines, new or modified roads and railroad facilities, and compensatory mitigation areas” (Ch. 29, p. 5). This chapter should mention where the RTM is proposed to be housed during project construction in relation to EJ communities and what the EJ impacts will be. Additionally, this chapter should disclose what (if any) chemicals or treatments will be used on the RTM and what impacts these will have on air, water, and soil quality within environmental justice communities.

[Regarding the Environmental Justice Community Survey Report] the second most frequently added priority was “No Tunnels.” Respondents expressed concerns about Delta water flow, saltwater intrusion, and an unfairness about moving water from the Delta to support farming or cities in Southern California. Respondents also thought that the tunnel would damage Delta roads, levees, water flow, Delta farms, and communities (Ch. 29, p. 26). This is significant and should be further highlighted.

The DEIR claims the project would provide broad benefits to minority communities and low-income communities within the SWP export service areas by sustaining and improving water supply reliability and supplementing or reducing groundwater use (Ch. 29, p. 30). The DEIR must provide evidence to support this statement. Almost three-quarters of respondents in the DWR Environmental Justice Survey stated they say “no benefits” in response to the proposed DCP. Regarding concerns of the increased cost of water- if the Delta tunnel is built, less fresh water will flow through the Delta, forcing Delta communities to pay more for clean water for their everyday needs. Farmworker communities in the south San Joaquin Valley will also see increased water rates due to rising costs of water regardless of whether their water agency invested in the tunnel or not due to the cost of water imports increasing. Low-income communities around Los Angeles and San Diego that receive water from the Metropolitan Water District (the primary funder of the DCP) will see their water rates increase. This will have a disproportionate impact on low-income and environmental justice communities both in the Delta and across the state. The DEIR must be revised to account for the community perspectives regarding the DCP and the real costs to residents of the Delta from construction of the DCP.

## XXIV. Climate Change

The Climate Change analysis in the DEIR is woefully inadequate and misleading. The first project objective listed states that the tunnel will “help address anticipated rising sea levels and other reasonably foreseeable consequences of climate change and extreme weather events” (Ch. 2, p. 2). To demonstrate that the proposed DCP will actually support and achieve these objectives, the DEIR must include sufficient analysis of the impacts of the DCP under future climate change scenarios to show that it will address consequences of climate change rather than contribute to cumulatively significant impacts.

Despite the stated objective, it is not clear how the proposed project will address the likely adverse impacts of climate change, which the DEIR states will contribute to warmer water temperatures, decrease delta smelt habitat, increase invasive aquatic plants, increase flood potential, increase salinity, and reduce water available for SWP deliveries (Ch. 30, p. 22-23). Salinity is currently managed by balancing ocean water with freshwater flows. Under future conditions, additional freshwater flows will be required to balance rising sea levels and salinity. The Sacramento River currently provides over 70% of the total inflow into the Delta (Ch. 5, p. 9). Contrary to its objectives, the DCP will likely contribute to [additional salinity problems](#) by increasing exports from the Sacramento River and reducing freshwater outflows into the Delta. The DEIR does provide any modeling after 2040 to support its statements regarding the project’s future effects.<sup>10</sup>

A second objective of the DCP is to “protect the ability of the SWP . . . to deliver water when hydrologic conditions result in the availability of sufficient amounts of water” (Ch. 2, p. 2). No modeling is provided to demonstrate potential hydrologic conditions during the period beyond 2040, and the 2070 analysis makes unfounded assumptions and conclusory statements without providing any modeling or evidence to support its findings. A project which states that its primary goal is to protect its water deliveries must demonstrate that sufficient water will be available at the time when it plans to divert it. In this case, that time period is after 2040.

By definition, the DCP includes the aging SWP infrastructure as essential to the operation and function of the project. The impacts and costs of replacing, fixing or failure of this aging infrastructure over the lifetime of the tunnel export project have not been disclosed. Further with climate change and associated increased dryness and heat, it is likely that revenues for the DCP and other required repairs to the existing more-than-50 year old project of canals and dams necessary to operate the tunnel will likely fail. The resulting rate increases and/or lack of revenue will have significant impacts on low income communities and rural communities both from where the water is taken, and to the locations where this paper water is exported. These impacts need to be disclosed.

Construction of the DCP will take more than a decade to complete, and the project will not become operational until after 2040, at the earliest estimates. The DEIR makes statements in this section and throughout the DEIR that acknowledge the significant impacts of climate change on the Delta through sea level rise and changing hydrologic conditions (Ch. 33, p. 22). “Projected changes in precipitation are less

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<sup>10</sup> The DEIR included modeling using CalSim 3 at the year 2040, using (1) a Central Tendency climate scenario with 1.8 feet of sea level rise, (2) a Central Tendency climate scenario with .5 foot of sea level rise, and (3) a Median climate scenario with 1.8 feet of sea level rise. (Appendix 30A, page 1).

consistent across climate models and characterized by greater uncertainty compared to projected changes in temperature. Although changes in annual precipitation are projected to be small in many regions throughout California, extreme heavy precipitation events and dry spells are projected to increase significantly throughout the state” (California Governor’s Office of Planning and Research et al. 2018a:22, 26). It is surprising then that the DEIR includes no modeling of sea level rise or hydrologic changes under a range of potential climate change scenarios during the time the project would be operational.

The DEIR cannot demonstrate that the proposed project will achieve the stated objectives, including addressing the impacts of climate change, if it has not even attempted to model how climate change will affect hydrologic conditions during the DCP’s operational timeframe nor how the proposed project and operations will affect freshwater flows under those scenarios. The fact is there is much modeling uncertainty. There are a wide range of modeling predictions especially with regard to climate change and there is a need to design a system for this range of outcomes. The DEIR focuses on one selected model, but given climate change, DWR does not know if the ‘right’ model was selected. Choosing a model of the average or median results, likely only has a 10% chance that it is correct. The model selection and design need to be more robust to handle the different outcomes: dryness, rain, temperature extremes and snow. DWR is like a general going to war with an old playbook that is out of date and is not “resilient.”

Local projects are central to the argument for a No Project alternative, but the discussion of those projects seems deliberately and severely abridged and vague compared to the project alternatives. The DEIR argues that local water projects are “not related to restoring and protecting SWP supplies” as justification for their absence from analysis as alternatives to the proposed project (Ch. 30, p. 23). Local water supply and resiliency should be central to an alternatives analysis. Given the uncertainty around future precipitation and climate impacts, building outdated water infrastructure and supply management are not a prudent adaptation to climate change, and must be compared against a robust alternative that prioritizes local and regional water supplies, including projects to support water conservation, efficiency, stormwater capture, and water recycling.

California has experienced warming during the twentieth century, and annual maximum temperatures are projected to increase by 5.6°F (3.1°C) for RCP 4.5 and 8.8°F (4.9°C) for RCP 8.5 throughout the state by 2100 (California Governor’s Office of Planning and Research et al. 2018a:23). The projections suggest that storage must be underground or much of the water stored will be lost to evaporation. Sites Reservoir, an above-ground storage project, would not be an effective sister project to the DCP.

Snowpack in the Nevada and California mountains that serves as a natural reservoir and key source of surface and groundwater may decline substantially under future climate conditions, in part because warmer temperatures may lead to a smaller percentage of precipitation falling as snow and a greater percentage of precipitation falling as rain (California Governor’s Office of Planning and Research et al. 2018a:26–28) (Ch. 33, p.11). This research is not up to date; as of spring 2022, we know there will no [longer](#) be snowpack in the Sierra Nevada by 2046.

Increased water temperatures affect aquatic organisms and habitats biologically, physically, and chemically. These impacts may be seen in changing maximum dissolved oxygen saturation levels (i.e., the

highest amount of oxygen water can dissolve) and primary productivity, nutrient and chemical cycling, and organism metabolism, growth, and reproductive and mortality rates (IEP MAST 2015:32). Reduced dissolved oxygen levels may have adverse effects on fish spawning in the form of reduced egg survival and may reduce the habitat zone (i.e., reduce abundance) of fish that are sensitive to higher temperatures, such as delta smelt (*Hypomesus transpacificus*). Salmonid egg survival and population productivity also may be affected by higher temperature levels, which can limit sufficient oxygen levels, increase disease prevalence, and interfere with synchrony of natural systems like migration (National Oceanic and Atmospheric Administration 2018:4, 25, 31, 37) (Ch. 33, p.16) Removing cold water from the delta region via diversions through the DCP will only exacerbate these problems. Habitat restoration is [not a substitute](#) for higher volumes of cold water.

The DEIR has not provided sufficient analysis to demonstrate the DCP will meet the stated objectives, and must be revised and recirculated for public comment.

## **XXV. Tribal Cultural Resources**

The DEIR explicitly acknowledges that all participating Tribes are proponents of the No Tunnel Alternative. Despite the impacts to Tribal Cultural Resources, and recognized opposition, the DEIR does not attempt to minimize impacts, only offer mitigation. The Tribes get no vote in this project, yet they are expected to tolerate changes consequential to character-defining attributes of the Delta. Where avoidance or protection in place is not feasible, there could be resource-specific treatment in consultation with affiliated Tribes. Even with these measures, the DCP has the potential to materially impair affiliated Tribes' physical, spiritual, and ceremonial experience of character- defining features of the Delta Tribal and Cultural Landscape (TCL) and therefore result in a significant and unavoidable impact on a Tribal cultural resource.

Consulting Tribes maintain the perspective of the interconnected nature of TCL features. Tribes explained that the full cultural value of an individual site could not be fully understood without an understanding of the plant communities, waterways, and trail systems that are the reasons that the archaeological site exists and would have been used in tandem with the village of the site. The significance of a certain river cannot be isolated from the vistas, ceremonies, other spiritual points on the river's landscape, or from reliance on such views and vistas for navigating through the broad Delta landscape (Ch. 19, p. 23). The interconnected nature of the region, both spiritually to the Tribes and biologically to wildlife, means that DWR needs to evaluate the region as a whole as well as specific sites, especially considering the fluid movement of water and air, and how the region will change over time.

During consultation, some Tribes expressed concerns about resources that could be affected by changes in water operations upstream from the Delta. DWR counters that "no construction would occur outside of the Delta counties, and the proposed project and alternatives would not change operational criteria associated with upstream reservoirs. Some indirect operational changes could occur because of the interconnectedness of the waterways, but modeling analysis has indicated that these changes would be negligible" (Ch. 19, p. 8). This explanation does not address potentially significant impacts to salmon or other fish that swim upstream implicit in the shared concerns. Impacts to one area can have far reaching effects throughout the 1100 square mile region. The DEIR must be revised to meaningfully address the



concerns raised, and consider alternatives, including a No Tunnel Alternative, that would prioritize maintaining the identified TCL features, including avoiding impacts to resources caused by changes in water operations.

## **XXVI. Other CEQA-Required Analyses**

This chapter of the DEIR does not adequately compare the costs and benefits of the proposed DCP and alternatives as required by CEQA. It contains numerous glaring omissions, including that it does not quantify or estimate the associating costs of the DCP's construction or ongoing maintenance, despite admitting that it will be "substantial" (Ch. 33, p. 1). DWR's latest estimate places the cost of the project around \$16 billion. The DEIR must provide a cost benefit analysis to allow the public to compare the exorbitant financial, ecological, and public health costs of the DCP with the supposed water supply benefits to the SWP contractors.

Additionally, the DEIR has not included the commitment of water from the Sacramento River in the discussion of irretrievable commitment of resources (Ch. 33, p. 1-2). Each of the project "alternatives" propose to change the place of diversion for the SWP, and commit additional water to export south of the Delta. The DCP would commit significant financial resources on construction and maintenance of the tunnel to divert this water. The diversion of water from the Sacramento river, associated impacts to the watershed, including projected delta outflows, endangered species, and the water quality would constitute an irretrievable commitment of resources and must be included in this discussion.

The DEIR states that "the process for reaching an overall determination under CEQA . . . requires the balancing of different sets of environmental benefits and impacts against each other" (Ch. 33, p. 2). The DEIR does not provide an explanation or methodology for how it will weigh the benefits and impacts of the DCP, nor does the DEIR provide a quantitative or numerical comparison of alternatives as required by CEQA. Rather, the DEIR concludes that the Bethany Reservoir alignment will lessen both short and long-term impacts and is the environmentally superior alternative (Ch. 33, p. 5). The DEIR must provide a quantitative comparison of the alternatives and their relative degree of impact, with and without mitigation, to support its conclusions. The DEIR must provide a numerical or quantified comparison of impacts for all alternatives, and whether each of those impacts is short or long-term, to show how it reached its conclusion.

The DEIR must provide additional information to support its conclusions regarding water reliability and flexibility of the SWP under the proposed project. One of the stated goals of the DCP is to improve reliability of supply to the export areas. The DEIR states that alternatives with one intake would not have the water supply reliability benefits expected of alternatives with two or three intakes (Ch. 33, p. 4). The DEIR must provide a method of numerical evaluations, with and without mitigation, to support the conclusion that water reliability will improve under these alternatives.. Additionally, the DEIR must provide ranked assessments and comparisons for In-Delta impacts compared to Service Area impacts. Additionally, the DEIR states that dual conveyance would provide operational flexibility that would reduce impacts on aquatic species (Ch. 33, p. 4). Dual conveyance will allow for increasing diversions of river flows to potentially harm aquatic species. The DEIR must provide information on the maximum physical capacity of SWP diversion with and without the DCP under future conditions and demonstrate

that water is available in the Sacramento River under regulatory and administrative constraints in a variety of water years.

Moreover, the DEIR assumes that the no project alternative will result in (1) further decline of the Bay-Delta ecosystem, (2) construction of desalination and other potentially harmful projects to compensate for the reduction in SWP exports, and (3) limited groundwater supply due to SGMA limitations (Ch. 33, p. 3). These assumptions are unsubstantiated and the DEIR has not provided adequate references or evidence in support of them. Alternatives are available that would address California's water supply issues by increasing conservation and efficiency to reduce demand, and utilizing water recycling and groundwater recharge to boost supplies. The DEIR must be revised to include an alternative that prioritizes ecological health of the Delta and includes local and regional projects that could provide water resiliency benefits without significant ecological consequences.

This chapter has not satisfied the requirements of CEQA. The DEIR must be revised to include the additional analyses and recirculated for public comment.

## **XXVII. Community Benefits Program Analysis**

The DEIR states that the goal of the Community Benefits program is to "go beyond traditional concepts of environmental mitigation to foster goodwill during long periods of construction" (Ch. 34, p. 1). It does not address the impacts of the DCP after construction. "Fostering goodwill" sounds as if the goal is to manipulate Delta communities to agree to a quid pro quo- they can receive the "benefits" laid out in this chapter in return for the many other sacrifices they will be forced to make by the State.

Because the actions that could be funded or integrated into the DCP as part of this program have not yet been specifically identified, this analysis discloses potential impacts that could be anticipated based on available information but does not include CEQA significance impact determinations. At this stage, it is unknown which specific activities would be approved, and their design, location, or scale are also unknown. The DEIR claims that as actions are funded or integrated with the construction of the DCP, they will undergo project-level CEQA review and any other required regulatory processes before they would be implemented (Ch. 34, p. 2). The program is entirely hypothetical at this stage and therefore difficult to measure impacts or comment on the adequacy of the proposed actions. Because each project would require its own CEQA process, further engagement by the public beyond this DEIR is required. The burden on the public continues.

The DEIR claims investments in large infrastructure actions such as roadway improvements could help improve air quality by providing funding to pave dirt roads and reduce dust dispersion (Ch. 34, p.3). Realistically, these large infrastructure actions could also increase pollution by dispersing dust during construction, as well as pollutants in the construction materials.

The DEIR also claims that investing in roadway improvements and adding dedicated roadways for agricultural use, either through the Delta Community Fund or Economic Development and Integrated Benefits, could also reduce congestion and improve the flow of traffic into and out of the region, which

could support recreation and the economic vitality of the Delta (Ch. 34, p. 3). Again, additional roadways would largely be a benefit to agriculture that will create air pollution and develop undeveloped lands.

Maintaining and improving levees could increase flood protection and help increase the climate resiliency of the Delta by reducing risks to life and property during flood events (Ch. 34, p. 3). These improvements should not be beholden to the approval of a massive, environmentally destructive tunnel. These improvements are necessary and should be pursued independently from a decision to move forward with the DCP.

The DEIR suggests investments in community services could offer expanded and improved access to law enforcement, fire departments, and code enforcement. Expanding these services could reduce crime, illegal dumping, and other nuisances in the region that degrade recreational experiences, harm businesses and agriculture, and adversely affect the quality of life for residents (Ch. 34, p. 4). On page 12, it is also suggested that police may be needed to address homeless populations. There is [plenty of evidence](#) that [investing in law enforcement does not help reduce crime](#), and [worse yet](#), is [detrimental](#) to communities of color and [homeless populations](#). This intention should have been included in the EJ survey. According to [data](#) collected over 60 years, from 1960 to 2018, spending more money on policing does not lower the crime rate and spending less on policing does not increase it. This element of the Community Benefits program must be thoroughly reconsidered.

The Community Benefits Program also includes proposed investments in additional bus routes to provide residents with greater access to jobs and recreational amenities (Ch. 34, p. 4). The DEIR does not consider that additional bus routes could increase pollution if the buses are not electric. Additional bus routes may not necessarily increase bus ridership as [research suggests](#) that more access to cars decreases ridership.

Addressing homelessness and providing sanitary facilities could help address hazards and threats to human health associated with waste generated by the unhoused population (Ch. 34, p. 4, 12). Homelessness is a complex issue. Sanitary facilities are an option, but [providing housing](#) for unhoused populations is the best way to [end homelessness](#).

Revitalization of rural main streets and restoration of culturally important places could help encourage tourism and business growth, which could strengthen local economies and communities. Investments in maintenance of schools and other public places could contribute to the improved health, safety, and general well-being of residents (Ch. 34, p. 4 and 17). Over a decade of construction on the Project, and the noise and air pollution that it comes with, may deter tourism and business growth.

The DEIR suggests, “Actions that could protect or restore habitat, including land acquisitions and transfers in the Delta region, could provide opportunities to protect native and special-status wildlife species habitat and improve the Delta ecosystem. Investments in fish screens and similar efforts to reduce entrainment could contribute to improved survival rates for fish species. Conservation of habitat and conversion of agricultural land to habitat could also contribute to a net decrease in greenhouse gas emissions, which could improve air quality and have a potentially positive contribution to climate change” (Ch. 34, p.4). It does not provide any details regarding how land would be acquired and from

whom, who would be responsible for the ongoing stewardship, and how the costs of the restoration and ongoing maintenance would be paid for.

Conservation of agricultural land could help preserve the agricultural heritage of the region and enhance Delta open space, habitat areas, and visual quality (Ch. 34, p. 4). Conserving agricultural land sounds like a subsidy for agriculture, in a region where agriculture creates intense subsidence and pollution of air and water. Big Ag is a \$2 billion industry in California, and further subsidizing them does not align with beneficiary pay principles.

These [carbon capture and sequestration] impacts could be avoided and minimized by siting actions, where available and feasible, on lower-quality farmland (Ch. 34, p. 10, 15 and 18). Carbon capture and sequestration can cause very dangerous carbonic leaks, which can lead to unpredictable explosions when they build up in aquifers. A safer solution could be converting the “lower-quality farmland” to public lands or wildlife. Land can have a function beyond agriculture.

The DEIR states that the program could “address housing code violations related to Sacramento County and Federal Emergency Management Agency issues” (Ch. 34, p. 13). Is DWR suggesting that DCP money would be funding evictions? This is a gross overreach, especially to be suggested in a post-pandemic era rife with poverty and homelessness. If DWR is suggesting that DCP funds would pay for housing assistance, that would be an improvement, but the chapter is unclear in its intentions.

The DEIR states that shelter or homeless encampments could be sited to avoid affecting sensitive habitat and species and nearby properties or interfering with existing uses. Establishment of a shelter or fenced homeless encampment, depending on location, could have environmental effects related to ground disturbances, visual character and quality, traffic, and air quality (Ch. 34, p. 13). We advise DWR to pursue more humane approaches to homeless solutions, rather than merely putting up a fence around homeless encampments, in partnership with homelessness and social service experts.

Overall, the Community Benefits Program lacks a level of detail required for the public to understand the proposal and its potential impacts. While the DEIR acknowledges that further project-level review must be done, that will come at the cost of requiring the public to provide feedback on each project proposal, and likely will not provide further analysis of cumulative effects of the community benefits program as a whole.

## Conclusion

In summary, the DEIR is missing essential analyses and alternatives necessary for CEQA review. **The DEIR must be revised and recirculated for public comment before any votes on construction by water contractors can take place.** We look forward to reviewing a new DEIR that incorporates a No Tunnel Alternative and anticipate that these comments will be addressed in any future draft.

## Sierra Club California Delta Conveyance Project DEIR Comments

Sincerely,

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