



December 16, 2022

Department of Water Resources
Attention: Delta Conveyance Office
PO Box 942836, Sacramento, CA 94236

Via email: deltaconveyancecomments@water.ca.gov

RE: Comments on the Draft EIR for the Delta Conveyance Project

The Friends of Stone Lakes National Wildlife Refuge, Environmental Council of Sacramento, Sacramento Audubon Society, Friends of Swainson's Hawk, Save Our Sandhill Cranes and Habitat 2020 (hereinafter, Environmental Groups) submit the following joint comments on the Draft Environmental Impact Report (DEIR) for the Delta Conveyance Project. Our organizations have engaged with the Delta tunnels projects from the outset, beginning with negotiations on mitigation and enhancement measures for the Bay Delta Conservation Plan, then with the WaterFix project as a protestant during State Water Resources Control Board hearings, and now its successor, the Delta Conveyance Project.

Nevertheless, the Environmental Groups have not seen meaningful cooperation from the project developers. Stone Lakes National Wildlife Refuge (Stone Lakes NWR) is essentially ground zero for the project. The intakes, the tunnel intake structure, and the haul roads will have significant negative impacts on Stone Lakes NWR and its wildlife. As our comments herein will demonstrate, we find the DEIR to be deficient, incorrect and inadequate.

Please find, attached, a memorandum and supporting documents from Dr. Gary Ivey, Research Associate with the International Crane Foundation, with additional comments supporting and elaborating on our comments pertaining to the project's impacts on the Greater Sandhill Crane. Please include Dr. Ivey's memorandum in your Response to Comments on the DEIR

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GENERAL COMMENTS

The DEIR Does Not Consider Intake Structure Site Design Alternatives That Would Mitigate for Riparian Habitat Loss

The Friends of Stone Lakes NWR submitted comments on the Notice of Preparation for the Delta Conveyance Project, dated April 17, 2020:

Site and Design Alternatives to the Tunnel Intakes Must Be Evaluated. Information disclosed during the DCA Stakeholder Meetings reveals that the intake locations were solely determined by engineering considerations. In particular, no consideration has been given to terrestrial impacts in conjunction with the placement of fish intakes. The environmental analysis needs to evaluate location and design alternatives that take into account both terrestrial and aquatic impacts as opposed to optimizing engineering considerations.

The DEIR appears to ignore this input. For example, the current project design places all intake infrastructure immediately behind a levee surfaced on both sides with concrete. Setting the road, intake support structures and settling ponds back from the levee would allow retaining and reestablishing the riparian corridor.

There is no consideration of alternatives to the completely concrete-lined intake structure, which would allow for the planting of shallow-rooted native plants on a greenspace levee designed to maintain continuity with the riparian corridor. Nor is there consideration of extending the riparian corridor to include the planting of more deeply rooted trees and riparian plants between the inland foot of the levee and the intake support structures and settling ponds. The DEIR thus fails to mitigate at the project site for the loss of important riparian habitat for critical species, as discussed in greater detail below.

Study Area Should Include Entire Central Valley Project/State Water Project System

Upstream actions are taken to manage Delta water quality as part of operations of the SWP/CVP. The Delta Conveyance project reduces Delta outflows, impacting upstream operations. In-delta diversions are currently managed closely in relation to Old and Middle River reverse flows and salmonid entrainment.

These Delta effects change upstream operations. In addition, in the proposed action or action alternatives, north Delta intake operational criteria could result in changes in upstream operations. For example, infrastructure maintenance or clogging of screens could affect sweeping velocities, resulting in reductions in pumping at the intakes, corresponding increases in pumping in the South Delta, and resulting need to increase releases from New Melones Reservoir to maintain water quality requirements per the Bay Delta Water Quality Control Plan. The No Project Alternative and No Project Alternative (2040) show changes in upstream

operations as compared to the proposed action and the action alternatives, as there are different upstream reservoir storages (See Appendix 5A, Section B). This shows that in fact, operations upstream of the Delta *will change* as a result of the project.

End of month storage in Folsom Reservoir, for example, changes from existing conditions as state in Appendix 5A, Page B-31. This CalSim 3 modeling shows some slight (4 TAF) reductions in June and July storage in Folsom Reservoir in Critical Water Years. While these reductions are small, any reduction in summer storage could be a concern due to the already low reservoir elevations in critical years. Low storage results in reductions in cold water pool, affecting the salmon in the American River and reducing inundated area, providing habitat for birds and the riparian forest.

There are also substantial changes in Delta flows in Old and Middle River in particular in November under all Project Alternatives according to Appendix 5A, Page B-336. While DWR may not be proposing any additional upstream requirements or goals, operations will change.

Therefore, impacts associated with the entire Central Valley Project (CVP)/State Water Project (SWP) system must be analyzed in the document. The Study Area should be expanded to include the entire CVP/SWP as operations of the entire system will change with this substantial new facility online. See also comments below pertaining to climate change.

Environmental Commitments must be included in the Mitigation Monitoring and Reporting Plan (MMRP)

Table 3B-1 on Appendix 3B summarizes the Environmental Commitments (EC) and links them to the specific impact evaluation of on different resources as to measures that will minimize or prevent adverse impacts. However, the DEIR states that

A narrative discussion in the impact analysis of Chapters 7 through 32 of this Draft EIR considers the ECs and BMPs as part of the project, first without implementation of the ECs and BMPs to determine the significance of the impact and then, as ECs and BMPs are applied, whether the impact has been reduced to less-than-significant level and whether additional mitigation is required. (Appendix 3B, p. 3B-2)

However, the same appendix section notes that

The avoidance and minimization features are included in the Mitigation Monitoring and Reporting Plan to enhance implementation tracking, identify the responsible party, and clarify implementation timing. (Appendix 3B, p.3B-1)

It appears that ECs and BMPs will not be included within the Mitigation Monitoring and Reporting Plan for the project. Since the ECs are included in the analysis of environmental impacts, and in fact are part of the level of significance

determination, they must be included in the MMRP. See comment below under Chapter 9, Intake Dewatering Contamination for a specific example. However, their inclusion must be comprehensive and not selective.

Compensatory Mitigation Plan Timing Must Be Included

The Compensatory Mitigation Plan identified in Appendix 3F requires a discussion of implementation timing. Compensatory Mitigation needs to occur concurrently or in advance of the Project impacts.

CHAPTER 3: DESCRIPTION OF THE PROPOSED PROJECT AND ALTERNATIVES

Water Conservation Should Also Be in Project Alternatives

CEQA Guidelines Section 15126.6(e) states that:

The 'no project' analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.

The DEIR's No Project Alternative includes: "projects that would occur in lieu of the project. These assumptions were based on a review of each participating agency's urban water management plan (UWMP)." (Appendix 3C, Page 3C-3) These plans include additional water conservation measures, increased storage, habitat conservation, replacing canals with pipelines, and more. The Environmental Groups support considering these effects. However, including them only in the No Project Alternative leads to an inconsistent and biased comparison. Most if not all of the projects included in the No Project Alternative in Table 3-C would occur both with and without the Delta Conveyance Project. They are already underway or in the planning phases. Therefore, to obtain an accurate comparison of with and without the Delta Conveyance Project, these projects should be included in the Project Alternatives as well as the No Project Alternative. As is, this is an inconsistent comparison that is not apples-to-apples and leads to misleading results.

Water Conservation in the No Project Alternative Should Result in Reductions in CVP/SWP Demands in CalSim 3

Secondly, it is unclear what if any changes to water demands have been made in the No Project Alternative as a result of additional water conservation. The DEIR states: "It is acknowledged that water agencies are already exploring these types of actions as outlined in their water management plans. However, the No Project Alternative focuses on the added level of these actions that would be needed in

order to replace any water reliability that would be gained through implementation of the Delta Conveyance Project” (Page 3-70).

Despite this statement, the Modeling Appendix 5A does not include any modifications to water supply assumptions based on these projects, and this modeling is used as the hydrologic inputs for the entire rest of the modeling suite. It is unclear what modeling assumptions – reductions in demands - are made to consider additional water conservation in the No Project Alternative, and it appears that none have been applied. This is an inconsistency in the document and either the text or the modeling needs to change.

Water Conservation Actions from UWMPs Are Few and Do Not Represent a Conservation Alternative

Thirdly, water conservation projects are few, inconsistently applied, and do not address a potential water conservation alternative to Delta Conveyance. The Bay Area Regional Desalinization Project (Page 3C-55) is included in the cumulative impacts section, but not in the No Project Alternative. Harvest Water, delivery of tertiary treated wastewater to the Stone Lakes Wildlife Refuge, (Page 3C-62) is included in the No Project Alternative and Cumulative Impacts. The Delta Water Supply Project, where Stockton would divert over 33,000 acre-feet of new water from the Delta and treat it for municipal supplies, is included in Existing Conditions, No Project Alternative, and Cumulative Impacts. City of Antioch Brackish Water Desalinization Project is included in the No Project Alternative and Cumulative Impacts. These four projects are the only desalinization projects included in the list, and none of them address a potential future reduction in water demand from the San Joaquin Valley or the Metropolitan Water District service area due to additional water conservation.

Habitat Restoration Projects are Inconsistently Applied to the No Project Alternative

In addition, Habitat Restoration projects are inconsistently included in the No Project Alternative. For example, Battle Creek, which according to the DEIR was initiated in 2009, is not included in the Existing Conditions but is included in the No Project Alternative and Cumulative Impacts (Page 3C-69). Klamath Basin Restoration Agreement, which would start construction in 2024, is included in the Cumulative Impacts but not the No Project Alternative (Page 3C-89). Similarly, Prospect Island Restoration, is also included in Cumulative but not the No Project Alternative (Page 3C-93). Including habitat restoration in the Cumulative Impacts but not the No Project Alternative will result in the project artificially improving habitat for species in comparison.

Outreach Materials are Incorrect Related to the No Project Alternative

Finally, the “Draft Environmental Impact Report Explained” document is misleading and incorrect. It states that: “The No Project Alternative includes the actions water agencies that receive SWP supplies would need to take to address local shortages if the Delta Conveyance Project was not constructed and the

resulting environmental effects of those actions, beyond what water agencies are currently planning.” If agencies are not currently planning projects, then they are not reasonably foreseeable as required under CEQA for the No project Alternative. However, what the DEIR describes in Appendix 3C is only projects that are currently in the planning process. DWR’s outreach materials are inconsistent with the actual DEIR.

EC-4a Should Specify Biodegradable Material and Weed-Free Straw

The Stormwater Pollution Prevention Plan (SWPPP) Best Management Practice, described on Page 3B-8, states: “Erosion control may not utilize plastic monofilament netting or similar materials.” Instead, the BMP should require contractors avoid using plastic for erosion or sediment control, and only use biodegradable materials. In addition, only weed-free rice straw should be used for fiber rolls, straw wattles, or mulching. Otherwise, invasive species may spread on site due to erosion control straw and/or seeds, and this would be an additional impact.

EC-4b Should Specify Hourly Turbidity Sampling Schedule

The DEIR states that: “If the [Qualified Stormwater Practitioner] (QSP) determines the site is Risk Level 2 or 3, water sampling for pH and turbidity will be required and the SWPPP will specify sampling locations and schedule, sample collection and analysis procedures, and recordkeeping and reporting protocols” (Page 3B-15). While only daily monitoring is required for compliance with the Construction General Permit, we suggest the project employ hourly monitoring for turbidity given the large nature of the project’s construction areas, as well as the COLD, SPWN, and MIGR beneficial uses of the Sacramento River nearby (i.e. cold water, spawning and migratory fish use, shown on Page 9-7), which result in a Risk Level 2 or 3 for purposes of the SWPPP. Hourly monitoring for turbidity is also commonly required for habitat restoration projects as part of the CDFW 1602 Lake and Streambed Alteration Agreement permit. Hourly monitoring would allow the contractor to stop construction if turbidity exceeds allowable limits and quickly react to minimize impacts.

EC-14 should include Measures for Tree Removal to Avoid Nesting Birds

The DEIR describes how the project will include biological conservation measures including work windows, non-disturbance buffers, and an on-site biological monitor. However, the DEIR does not include in this Best Management Practice any measures for tree removal timing in relation to nesting birds. The project should include a requirement that any tree removal occurs prior to February 1, to avoid impacts to nesting birds. Otherwise, the document should include the impacts of tree removal on nesting birds in the CEQA document.

CHAPTER 5: SURFACE WATER

San Joaquin Water Resources Must Be Included in Impact Analysis

The DEIR does not include San Joaquin River watershed results or analysis in the document. Modeling results are presented for the San Joaquin River at Vernalis, in the Delta (Appendix 5A, page B-279), but no potential effects on the Stanislaus River system and New Melones Reservoir are considered. This is in error. The Delta Conveyance Project will require modifications to the combined CVP/SWP operations to rebalance for Delta water quality and salinity requirements under D-1641. New Melones Reservoir is the only reservoir that can make releases to decrease South Delta water quality. While the project should in general improve South Delta water quality at the expense of North Delta water quality when the North Delta diversions are running, this would result in shifts in the timing of releases from the Stanislaus River, which would affect releases elsewhere in the combined CVP / SWP water operations system. The effects should be analyzed so the public can evaluate any changes, whether beneficial or detrimental.

South of Delta Storage Impacts Must Be Considered

The document doesn't appear to consider effects of changes in South of Delta storage. However, operation of the North Delta diversion increases river flows in winter/spring due to increased diversions during this time and reduced diversions during summer/fall. This results in changes in timing of deliveries south of the Delta. Since water supply goes to agricultural as well as M&I uses south of the Delta, timing of demand will not match exactly to timing of deliveries. This requires storage. Changes in reservoir operations at San Luis Reservoir of South of the Delta could have impacts to water supply, fish, and recreation south of the Delta, including to Contra Cost Water District, Santa Clara Valley Water District and Metropolitan Water District reservoirs in Southern California. These impacts should be discussed in the document.

CHAPTER 8: GROUNDWATER

Construction Groundwater Quality Effects Are Not Analyzed

The DEIR analyzed and has included a Mitigation Measure to mitigate reductions in local groundwater wells as a result of dewatering, including potentially injecting potable water and/or deepening existing wells. However, the DEIR has not analyzed the effects of construction on groundwater quality. While drilling the new Delta Conveyance, what pollutants could be discharged to groundwater? This impact must be considered in the EIR

The Potential Contamination of Groundwater Due to Tunnel Boring Operations Is Not Analyzed

The tunnel boring machines involve the application of a solution involving undisclosed chemicals to facilitate earth boring, with the potential for the contaminated water to collection in the tunnel shaft and seep into the underlying aquifer. We have not identified any discussion in the DEIR of this potential impact and its mitigation. This potential impact must be addressed.

CHAPTER 9: WATER QUALITY

Stormwater Runoff and Dewatering Contamination Mitigation Is Inadequate

The DEIR identifies the following Environmental Commitment EC-3 to ensure that “all stormwater runoff and dewatering water generated at construction sites would be collected, treated, and stored on-site for reuse. Decant water from reusable tunnel material also would be collected and treated for direct on-site reuse or on-site storage. If treated stormwater, dewatering water, or decant water amounts exceed the on-site reuse demand or storage capacities, the water would be discharged into adjacent waterbodies in compliance with construction NPDES permits issued to DWR by the Central Valley RWQCB” (Chapter 9, Water Quality, Page 9-44).

However, the introduction to Appendix 3B does not include ECs as part of MMRPs and does not provide the additional assurances that this mitigation will be implemented. This exemplifies a significant oversight of the DEIR and must be corrected. Please see comment, Environmental Commitments Must Be Included in MMRP’s under General Comments above.

Electrical Conductivity Increases Resulting from Upstream Reservoir Releases Are Not Analyzed

During the late spring, summer, and fall—when the SWP and CVP are typically operating to meet salinity requirements in the Delta—both the existing South Delta intakes and the proposed North Delta intakes would be operated together. Use of the proposed North Delta intakes, particularly in July through December, can be used to reduce carriage water requirements, which are necessary to move exports through the South Delta when salinity requirements are controlling. This is a benefit for water supply and water transfers. However, these carriage water requirements are an extra buffer to ensure salinity requirements are met. The DEIR notes: “Carriage water refers to the additional Delta outflow required to maintain Delta water quality for an additional unit of export at South Delta facilities and offset the degradation to water quality. Carriage water costs (or savings) occur when compliance with D-1641 water quality objectives is controlling Delta operations” (Appendix 5A, page B-63).

This reduction in carriage water results in increases in salinity in the Delta. DEIR analysis shows potential increases in bromide, chloride, and EC in some locations (Page 9-4). The proposed project, Alternative 5, includes the highest increase in electrical conductivity. Combined, they show that the proposed project is likely to increase the Delta salinity. This will require the CVP and/or

SWP to release additional water from upstream reservoirs in certain times of year to meet the Delta water quality requirements established by the SWRCB in the Bay-Delta Water Quality Control Plan. Those additional upstream water releases will result in impacts in the upstream watersheds, including the Sacramento and American and Feather Rivers. These impacts must be evaluated in the EIR.

Construction Related Mercury Releases Are Not Analyzed

The mercury assessment utilizes DSM2 Delta modeling of water volumes, and then applies mercury concentrations according to the mass balance from the DSM2 modeling. The DEIR correctly states that: “Mercury methylation occurs under anoxic conditions in sediments, flooded shoreline soils, and to a lesser degree, in the water column. Increased methylmercury is also associated with wetting and drying cycles” (Chapter 9, Water Quality, Page 9-113). Construction activities could result in buried mercury or methylmercury being exposed to the water column and again available for bioaccumulation if there are leaks from construction site dewatering. This potential impact must be evaluated in the EIR.

Reduction of Sacramento Regional Sanitation District Treatment Plant Dilution Reduction Under the Project Are Not Analyzed

During the winter and spring, when there are excess flows in the system, the proposed north Delta intakes would be used to capture additional excess flows when South Delta exports are limited and unable to capture those flows. The project modeling shows decreases in Sacramento River flows below Sacramento Regional Sanitation District Wastewater Treatment Plant particularly in July, August, and September (Appendix 5A, page B-151).

Any pollutants, including wastewater such as discharge from the Regional Wastewater Treatment Plant, that flow into the Sacramento River downstream of the North Delta intakes would have lower dilution factors, and therefore higher concentrations leading to human and/or fish and wildlife toxicity impacts in the lower Sacramento River and Delta. Pollutants such as *E. Coli* must be included in the impact analysis.

Flood Flow Reduction Impacts Are Not Analyzed

Sacramento River flows at Hood downstream of the North Delta intakes decrease in November through March in most water year types (Appendix 5A, page B-161). This reduction in flood flows will result in less dilution of turbidity from natural runoff events, and reduction in the amount of high velocity flows that disturb *Microcystis* formation. This results in decreases in Delta outflows in winter through early summer (Appendix 5A, page B-325 through 332), with large changes in the exceedance probability in June and July (Appendix 5A, page B-326). These need to be Identified.

Cyanobacteria Harmful Algal Bloom Analysis Must Include the Month of May

Short residence times and high-water velocities reduce the formation of *Microcystis*, which causes harmful cyanobacterial algal blooms (CHAB). The DEIR analyzes water temperatures and velocity to evaluate the effect of *Microcystis* formation. The document states that, “CHABs typically form in the Delta from July through November (Lehman et al. 2020:4)” (Appendix 9E, page 9E-8). In some years, however, CHABs can form as early as May or June if temperatures are sufficiently warm (Lehman et al. 2017:103)” (Appendix 9E, page 9E-8). However, the CHAB analysis focuses on June through November. Due to the potential for CHABs in May, together with warmer Mays in a climate impacted future, the analysis must include the earlier month as well.

The analysis shows some reductions in velocity as a result of the project in Victoria Canal (Appendix 9E, page 9E-71). There are also some increases in residence time in certain locations as a result of the project (Appendix 9E, page 9E-98). The DEIR concludes this reduction is negligible (Chapter 9, page 9-156). However, this is a discernable impact.

CHAPTER 13: TERRESTRIAL BIOLOGICAL RESOURCES

GENERAL COMMENTS

The DEIR Mitigation for Listed Terrestrial Species Is Not Consistent with CEQA Guidelines and DFW Requirements

The mitigation proposed in this DEIR conflict is inconsistent with CEQA Guideline 15126.4(a)(1)(B) for all of the vertebrate terrestrial species covered in Chapter 13. Similarly, the requirement for getting a 2081 incidental permit pertains to covered vertebrate terrestrial species in this DEIR and there needs to be a commitment in this DEIR to obtain an incidental permit for all of the covered vertebrate terrestrial species that will be impacted by this project. Finally, the DEIR fails to state enforceable method/s for conserving in perpetuity the lands for mitigation for loss of of the covered vertebrate terrestrial species’ foraging habitat, as well roosting and nesting habitat where applicable. Please see comments below pertaining to Swainson’s Hawk for additional detail.

Mitigation Ratios Based on Thresholds After Mitigation Are Inadequate

The 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 make up for the habitat that was lost. At a 1:1 ratio, for every acre conserved there is an acre lost, and it is this ongoing loss of habitat that makes the impacts to all of the covered vertebrate terrestrial species significant and unavoidable.

This DEIR needs to change its significance findings for all covered vertebrate terrestrial species impacted by the loss of habitat to “significant and unavoidable.”

SWAINSON’S HAWK

The DEIR analysis conflicts with California Department of Fish and Wildlife Guidelines for Swainson’s Hawks

Background Information: The California Department of Fish and Wildlife (“CDFW”) performed a Status Review titled “Swainson’s Hawk (*Buteo swainsoni*) in California (Reported to California Fish and Game Commission) 2016 Five-Year Status Report” that states:

(T)he Department recommends retaining the Threatened classification for this species based on the following:

- On-going cumulative loss of foraging habitats throughout California
 - Significantly reduced abundance throughout much of the breeding range compared to historic estimates
 - An overall reduction in the hawk’s breeding range in California.
- (CDFW Status Report at p. 4.)

Critical to CDFW’s review was the finding that “[t]he primary threat to the Swainson’s Hawk population in California continues to be habitat loss, especially the loss of suitable foraging habitat, but also nesting habitat in some portions of the species’ breeding range due to urban development and incompatible agriculture” (CDFW Status Report at p. 3).

The report specifically notes that “[t]he lack of suitable nesting habitat throughout much of the San Joaquin Valley, due to conversion of riparian systems and woodland communities to agriculture, also limits the distribution and abundance of Swainson’s Hawks (California Department of Fish and Game 1993).” (Id. at p. 4).

CEQA Guideline 15126.4(a)(1)((B) states (with emphases added):
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 project’s environmental review *provided that* the agency (1) commits itself to the mitigation, (2) *adopts specific performance standards the mitigation will achieve*, and (3) identifies the type(s) of potential action(s) that can feasibly achieve that performance standard and that will be considered, analyzed, and potentially incorporated in the mitigation measure.

The Delta Conveyance DEIR conflicts with this guideline. 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 compensatory mitigation. It 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. 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 project 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. This is a critical oversight, and must be corrected.

The DEIR inadequately defers until after the permitting process the impact and mitigation details required to be disclosed to the public in the DEIR. The DEIR states: The detailed restoration design work and management planning, which will include fully detailing performance standards, monitoring methods, and adaptive management actions, will occur between the project permitting phase and project completion. Other mitigation actions, including bank credit purchases and habitat protection, will also occur between permitting and project construction completion. To inform the mitigation planning process between permit issuance and mitigation land construction or preservation, DWR will prepare Draft and Final Habitat Mitigation Plans for affected species and wetlands. Compensatory mitigation would be secured in phases in accordance with the progress of construction. (p.3F-16)

The DEIR fails to state enforceable method for conserving in perpetuity the lands for mitigation for loss of Swainson's Hawk 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, including 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 the Environmental Groups do not believe they have been used for Swainson's Hawk conservation in California.

CDFW has a model easement that 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.

Although CMP-19b states 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. 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 Project. The DEIR has none of these requirements. The project 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 inappropriately allow the mitigation land to be acquired at some unspecified time after the project is completed, possibly never.

According to the DEIR, mitigation lands also could be located many miles distant from the area impacted by the project, and thus of little to no value to the population of hawks impacted by the project. CMP-19b expressly 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." Protection of foraging lands more than 10 miles from the project impact will have no beneficial impact to the nesting pairs in the project area and will not contribute to their reproductive success. This is because Swainson's Hawks establish their nests adjacent to their foraging grounds and rely on feeding close to the nest. While the (mostly male) birds do occasionally fly longer distances to feed during harvesting or flood events, they can't rely on utilizing long distance feeding grounds to provide for and recruit young into the population. If adults must hunt long distances from the nest site, the additional energy required may result in reduced nesting health and greater mortality. (Brian Woodbridge, Biology and Management of Swainson's Hawk in Butte Valley, California; US Forest Service Report, 19pp, 1985). The California State Department of Fish and Wildlife has thus established a ten-mile standard, which is the "flight distance between active (and successful) nest sites and suitable foraging habitats, as documented in telemetry studies (Estep 1989, Babcock 1993)." (California Department of Fish and Game, Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California, 1994). The Department of Fish and Wildlife further detailed and reinforced the ten-mile standard in a letter to the City of Elk Grove (January 12, 2018):

In order for CEQA Lead Agencies to lessen impacts to SWHA foraging habitat to below a level of significance, mitigation lands used to offset

impacts must be located in a biologically supportable distance from the impact site. In addition to the City's [of Elk Grove] Swainson's Hawk Code, many biological consultants and mitigation bankers have expressed that this distance is, or should be 10 miles. An accurate and biologically supportable distance to use when establishing a service area should consider the home ranges and core use areas used by both males and females.

Therefore, providing additional protected foraging habitat for other nesting pairs, not affected by the project, 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 minus one-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." The Environmental Groups do not believe this level would protect habitat from flooding. Nor does the DEIR provide evidence to the contrary. Elevation at or below sea level is not considered suitable for SWHA nesting and foraging habitat due to exposure to potential flooding.

The DEIR states that "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)." The Environmental Groups are concerned this statement is ambiguous. The DEIR must clarify if this number represents the number of acres impacted by the project 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, 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.

For these reasons, the Environmental Groups oppose the DEIR, and disagree with its claim that the mitigation will reduce the impact of the project on Swainson's Hawk to less than significant.

PEREGRINE FALCON

The Peregrine Falcon Was Not Included in Impacts Analysis, AMMs, or Mitigations

The Peregrine Falcon is a California Fully Protected Species that can be found throughout the project area, but it was not included in the impact analyses 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 byproducts from toxic algae, even though it eats fairly high up on the food chain and would therefore be more vulnerable to such toxins concentrating up through the food chain. This DEIR must include impacts analysis and AMMs and mitigations for Peregrine Falcon.

GREATER SANDHILL CRANE

General Comment on Status as a No Take Species. Greater Sandhill Cranes are a “no take” species by virtue of their California Fully Protected Species status. For Fully Protected Species, California Fish and Game code section 86 states: “Take’ means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” This is a high bar in that no individuals that are Fully Protected can be killed during any phase of the construction and the operation of the Delta Conveyance project. “Take,” as defined by section 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). This project is not an NCCP, but rather 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 critical 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 and why land acquisition mitigations are being provided for the loss of Greater Sandhill Crane habitat. 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 this project, and whether the land acquisition mitigations provided are adequate to address the harm caused by the project.

General Comment Regarding Staten Island Wintering Crane Importance and Tunnel Shaft Location.

The DEIR notes that

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). (DEIR, chapter 13-279)

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 an access shaft right in the middle of “ground zero” for crane populations in the Delta is flawed no matter where the tunnel shaft is 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 (Pearce et al. 2017; Sandhill Crane Roost Selection, Human Disturbance, and Forage Resources: Roost Selection in Sandhill Cranes; The Journal of Wildlife Management; page 2). The project 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 Assumed Arrival Time for Greater Sandhill Times is Oversimplified

Setting September 15 as the *de facto* day that Greater Sandhill Cranes are going to arrive is problematic. Where 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. For example, 15 years ago a small flock was reported by Esther Milnes on August 18 (pers. discussion with Dr. Gary Ivey). Admittedly this flock was 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 15th. As well, with climate change it would not be unreasonable to expect 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 18th and possibly even earlier to address climate change shifts.

The Temporary Roosting Data is Outdated and Insufficient

The temporary roosting data used for temporary roosting sites is outdated and insufficient 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 roosting data, and the analysis of impacts to roosting and foraging cranes needs to be updated and corrected accordingly. Additional analysis needs to be provided that considers how foraging locations may shift due to shifting roost sites. The construction window for this project is over a decade and these potential shifts could result in take of Greater Sandhill Crane if avoidance measures are not designed with these potential shifts in mind.

The Daily Travel Distance from Roosting Site to Foraging Area is Deficient

This DEIR relies heavily on the Ivey et al 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 remaining 5% of Greater Sandhill Cranes and the remaining 10% of Lesser Sandhill Cranes, 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 and mitigate for 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 were tracked for the study. Where 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 Sandhill Crane. So, the longest distance that might be travelled can be accurately described as longer than 9 km for Greater Sandhill Crane, and longer than 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 fall short and do not encompass possible impacts from this project on cranes throughout their winter landscape. 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 9 km from roost sites 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 10 km from its roost site and hitting an existing power line on a cloudy day. For Lesser Sandhill Cranes that distance should be more than 21 kilometers to determine possibilities for harm. This deficiency will be commented on further in the context of new powerlines as well as potential impacts to foraging cranes.

The Analysis of Crane Collisions with Transmission Lines and Proposed Avoidance Measures Are Deficient Because Roosting and Travel Distance Data Are Deficient

There are descriptions and analyses of bird strikes with new powerlines with a particular focus on, and even an appendix devoted to, Sandhill Cranes 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. (DEIR, chapter13, page 272)

It is true according to Ivey *et al.*, 2015, that most Greater Sandhill Crane have daily commute distances in the Delta that occur within 1.2 miles of roost sites, and even that 95% of Greater Sandhill Cranes are commuting 5 km or less daily. But there remains the issue of the other 5% of Greater Sandhill Cranes that are travelling 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 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 travelling 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 possible 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. And, 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 powerlines:

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. (DEIR, chapter 13-273)

As discussed above, 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. The DEIR inappropriately failed to analyze this. 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 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. (Chapter 13-274)

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 an initial 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, even if flight diverters are installed on them. The Delta can have very thick fog, which could obscure even the best diverters. Diverters do not insure against crane collisions and species take.

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 it 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 travelling 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 also would 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 et al 2015 paper, which means that 21 km is a minimum distance to be considered and not the farthest distance that Lesser Sandhill Cranes are likely travelling 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 23 km from a roost site that could be hit by a crane because of construction activities

presents a potentially deadly or harmful 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. This is even though obvious mitigations exist like requiring the installation of flight diverters on any existing transmission lines within 23 km of a roost site that cranes might hit if they were flushed while foraging, particularly on foggy and dark days.

For new powerlines, the avoidance and minimization measures should extend to include any line within a minimum of 11 km of roost sites for Greater Sandhill Cranes, and a minimum of 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 because of construction activity for this project 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 mitigations measures were provided for Lesser Sandhill Cranes that could be harmed beyond 3 miles from roost sites. Even if the avoidance and minimization measures are improved with more flight diverters on existing lines extending out to 23 kilometers from roost sites, 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 Cranes Because of Construction and Operation Related Noise Created by the Project

Construction and operation noise has the potential to cause cranes to flush and possibly hit transmission lines (new and existing). Or other obstructions on the landscape 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) (DEIR, chapter 13-266).” 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. (DEIR, Chapter 13-266)

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 this quote from the DEIR:

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. (DEIR, Chapter 13-265-6)

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. As such, 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 made in the last quote from this same DEIR. The Environmental Groups generally agree that cranes will avoid

these disturbances, and we believe that the sound component of the construction is a significant part of why they would move. But the critical issue is that the movement 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.

As for 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 (DEIR, chapter 13-267).” 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 (DEIR, chapter 13-267).” The cranes’ response is the obvious concern here, but this quote infers that since cranes are adjusting to the hunting, they will also adjust to the noise impacts from the project. 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 cranes. Glucocorticoid metabolites have been used to gauge stress levels in cranes in the field [Barcelo, Ingrid, “Winter Ecology of Sandhill Cranes (*Grus canadensis*) in Northern Mexico”, 2012 in Dissertations & Theses in Natural Resources, page 65]. 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 could provide important feedback on whether the avoidance and minimization measures are effective or if they might need to be modified and improved.

Construction and Maintenance Vehicles Will Flush Cranes

The 15 mile an hour speed limit on the dirt haul roads (DEIR, chapter 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, including Greater Sandhill Cranes. 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 even after avoidance and minimization measures and mitigations.

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. Any 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 and dark 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. (DEIR, chapter 13–265-6)

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 that 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. (Chapter 13-273)

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 powerlines or poles or fences or other obstructions during foggy and dark days, especially given the deficient analysis of existing powerlines and other obstructions within 11 km of roost sites, and the use of outdated roost site data.

The Proposed Compensatory Management Plan for Greater Sandhill Cranes Is Inappropriate

The DEIR in Appendix 3F states that:

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 reusable tunnel material (RTM) storage planned for north of Twin Cities Road. During the Terrestrial Stakeholder meetings back when the tunnel/s was part of the Bay Delta Conservation Plan B(DCP), 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*) (DEIR, Chapter 13-274).

The use of Bouldin Island for the CMP gets significant analysis and discussion in this DEIR, whereas the connectivity option is only included 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 because it is outside of the daily commuting distances of those cranes. 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 DEIR and in Particular, the Compensatory Management Plan Fail to Acknowledge the Environmental Commitments in Both Prior Tunnel Projects That Would Mitigate for Impacts to Listed Species in Proximity to Those Impacts

The Friends of SLNWR comment letter of April 17, 2020 on the NOP for this project included the following comment:

WaterFix environmental commitments must be included as part of project. The WaterFix tunnel project included a number of environmental commitments that were a product of extensive discussions with stakeholder groups associated with Stone Lakes NWR. These measures provided significant mitigation for impacts on terrestrial species, most notably greater sandhill cranes and Swainson's hawks. These environmental commitments must be included as part of the project, preferably as mitigation measures for the current tunnel project.

The DEIR does not include these commitments in Appendix 3B, Environmental Commitments and Best Management Practices. Of particular importance are the biologic commitments pertaining to the creation of an additional roosting site for sandhill cranes and other migratory species and to supplemental foraging sites to mitigate for disturbances during construction of intake facilities. The impacts associated with these species will be primarily located near the intake and tunnel

construction sites. These commitments should appropriately be incorporated into the CMP.

The DEIR May Not Have Utilized the Most Recent Version of the South Sacramento Habitat Conservation Plan Throughout the Document

Table 13-106. Cumulative Impacts on Terrestrial Biological Resources from Plans, Policies, Programs) 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. (Chapter 13-493)

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.

The Evaluation of Potential Conflicts with the South Sacramento Habitat Conservation Plan Is Inaccurate and Incomplete

The presentation of the potential conflicts with the South Sacramento Habitat Conservation Plan (SSHCP) is neither accurate nor complete and as a result is 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 and White-tailed Kite. Put simply, PPU 6 is the population stronghold for Greater Sandhill Crane and Swainson's Hawk.

Comparing the Delta Conveyance's project area overlap to the entire footprint of the SSHCP is an irrelevant comparison. The only [WB1] meaningful 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 area 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." (DEIR, chapter 13-449)

This apples to oranges comparison continues in table 13-103 and the discussion of the relationship between the impact acreage of the project 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 0.1% and 0.2%. 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 0.1 to 0.2% 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 thru the impact of this project on the "feasibility for acquisition" for the SSHCP in PPU 6.

But before discussing the "feasibility for acquisition," it is necessary to consider whether 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 Delta Tunnels project 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 remote 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 Delta Conveyance project 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 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). (DEIR, chapter 13-449)

Using the citations provided, the way these calculations were executed 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. But adding 58,458 acres of agricultural land to the 17,633 acres of grassland yields a total of 76,091 acres. As we already know from the math in the last paragraph, the inventory available to the SSHCP in PPU 6 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 the 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 (in this case agricultural land and grasslands) 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 Delta Conveyance project 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 Delta Conveyance projects 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 Delta Conveyance project effectually reduces the available land covers in PPU 6 for mitigation and increases the “feasibility for acquisition ratio.” As such, this project 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. The number of acres needed in PPU 6 could increase for the Delta Conveyance Project, making the ratio even worse.

Delta Conveyance Eminent Domain Will Have a Chilling Effect on Willing Sellers for the SSHCP

The Delta Conveyance project 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 could have a substantial chilling effect on the willingness of sellers to participate in the SSHCP or other HCP similarly affected by the project. A competing project taking land away forcibly with eminent domain for mitigation in the same small area of PPU 6 by the Delta Conveyance project 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.

The Project Is Incompatible with and Would Interfere with Successful Implementation of the SSHCP

During a long series of terrestrial wildlife meetings for the earlier iteration of the project 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 of the SSHCP has the cost of 1,000 such acres amortized over the cost of all of the agricultural mitigation acres. The Environmental Groups 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 Delta Conveyance project, 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 Delta Conveyance project 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.

The Environmental Commitment to Manage Invasive Weeds Must Be Broadened

The DEIR makes reference to an environmental commitment to manage for invasive weeds:

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. (DEIR, chapter 3b-27)

Yet EC-14 (DEIR, 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. (DEIR, chapter 3b-27)

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.

CHAPTER 24: NOISE AND VIBRATION

The focus in this section is on the preferred Alternative 5 and Alternative 2a (central alignment through Staten Island and southward).

The DEIR Omits Necessary Discussion Supporting Its Proposed Construction Methods

The DSEIR describes types of construction activity and the general area where it will take place, but it does not describe the process used to determine whether specific construction activities are best. Unanswered questions include: Is this specific activity or activities, the only viable means to achieve the intended outcome? Were alternatives considered? Is the stated frequency and duration physically feasible? Is it cost effective? What will happen to the project if an unanticipated delay occurs, or unexpected inclement weather, or certain types of construction become obsolete or otherwise no longer viable?

There is no consideration of using specially quieted equipment, such as air compressors or engine mufflers, that could be used in heavy and non-heavy construction, or instances where drilling and casing, or an auger, could be used.

The DEIR Fails to Specify Duration and Frequency of All the Noise and Vibration Associated with Tunnel Construction

The DEIR identifies varying measurements of the dBA associated with different construction activities near various features of the tunnel construction. However, throughout Chapter 24 (with three exceptions regarding pile driving), the duration and frequency of these noise or vibration sources includes vague qualifiers that cannot be ascertained without the reader possessing the real-life construction knowledge. Examples include “occasional and intermittent,” (p. 24-25), (p. 24-56); “spread out” over (p. 24-20); “continuous operation during times when in flow rate are needed” (p. 24-25); “some” (p. 24-33); “rarely” (p. 24-13); “vary substantially” (p. 24-11).

The DEIR/S Makes Assumptions Without Adequate Legal Foundation

The DEIR, p. 24-1, “Summary Comparison of Alternatives”, states that the comparison of impacts on noise and vibration, for each alternative, purports to provide CEQA findings after all mitigation is applied. (DEIR, p. 24-1 to 24-14). However, DEIR, Table 24, indicates it considers as CEQA compliant, impacts that:

. . . generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. (DEIR, Table 24)

Compliance with a general plan is necessary but does not equate to compliance with CEQA.

The “Study Area” (DEIR, p. 24-8 to 24-16), reports sound level measurements in Yolo, Alameda, and Solano Counties (DEIR, p. 24-1 to 23). However, this section then reports that “no sound-level measurements were conducted in [Yolo, Alameda, and Solano] County.” Instead, the report offers a report of nearby measurements across the Sacramento River, without any supporting data for using such a comparison.

The DEIR Misleadingly References Large Geographical Areas as Homogenous Landscape

The DEIR, Appendix 24A, depicts locations of noise and its attenuation emanating from only fourteen points grouped around three locations, and these measurements are to be deemed adequate for the entire project site in or adjacent to six counties. The depictions do not adequately reflect the level of noise affected by the topography of the land surrounding each source. The sound level contours in Appendix 24A are to represent two to four miles surrounding each source, a large distance. The attenuation of noise will vary according in relation to the flatness or hilliness of the land, its terrain, and built structures and sensitive receptors on it.

The DEIR Does Not Capture the Number of Instances, Duration, and Intensity of Noise from Impact or Vibration Pile Driving Over the Course of Twelve to Fourteen Years

Chapter 24 represents that pile driving will only occur between 7:00 a.m. and 7:00 p.m., and on only an “intermittent and temporary basis” within those hours. (DSEIR, p. 18-30 to 18-33). These overly general projected hours and duration are inadequate to establish the intensity, attenuation, duration, and source of sound levels that will vary over the course of twelve to fourteen years of construction on a 45-mile-long tunnel.

The DEIR indicates that vibratory pile driving methods will be used much more than impact methods. It indicates that geotechnical data will be relied on to determine where gravel and other soil necessitate impact driving, will determine what method is required, but no estimate of just how many instances that will occur (DEIR p. 19-13 to 19-21). Given the dBA from impact pile driving as opposed to vibratory pile driving, this is inadequate to determine how many dBA will be endured for varying frequencies and duration of time.

The difference in dBA created by pile driving using impact methods and vibration methods is enormous. The DEIR indicates that a sound level at Lmax, at 50 feet, drops from 110 dBA during impact driving to 96 dBA during vibration pile driving (DEIR, Table 24-5). This drop is 14 dB, more than tenfold. For this reason, the instances in which pile driving in general, and impact versus vibratory pile driving, should be addressed with utmost accuracy throughout discussions of the intensity, duration, and attenuation of pile driving. Couching usage of impact driving as “some” (DEIR, p. 24-33) “rarely” (DEIR, p. 24-13) or in “limited cases” (DEIR, p. 20-26 to 20-27) is not adequate for a 12-to-14-year project. Pile driving

durations of 2 minutes should not be considered minor (DEIR p. 19-18 to 19-20). Nor are vibratory methods creating 96 dBA.

Road construction would require building of new bridges and reconstruction of some existing bridges for project facility access roads to central conveyance alignment facilities. Piles and piers would be installed for bridge supports and trestles. The total number of days required for pile installation at bridges would vary between 4 and 45 days (DEIR, page 36-13 to 36-24). This unspecified variance is inadequate.

The DEIR nowhere reflects the subjective impact the reported dBA will have on surrounding water, land, air, as well as humans and animals. A measurement and real-life analog are a baseline, but inadequate to capture toleration levels of all noise and vibration.

The DEIR does not even acknowledge the proximity of pile driving to sensitive and protected locations, including Stone Lakes Refuge near the intakes.

Pile Driving Using Either Method is the Loudest Occurrence of Any Construction Noise, and its Use Must Be More Specifically Captured in the DEIR

Alternative 5 incorporates the noise and vibration that accompany Alternative 1 at Intakes B and C and their intake access roads. In doing so, the DEIR revisits vague reports of anticipated noise and vibration disturbance.

Under Alt 1, Intakes B and C will include temporary in-river cofferdams and permanent training walls constructed with interlocking sheet piles, but the number of piles at specific locations is not provided. Pile driving will occur at only one intake structure at a time, but the actual number of these structures, as opposed to an isolated intake, is not provided. Two vibratory pile drivers may be used simultaneously, again, at an unknown number of intake structures. (DEIR, p. 29-22 to 29-38)

Vibratory pile drivers will be used for a period up to 225 hours, unless geotechnical analysis indicates pile driving must be by impact method due to hard soil or gravel. The exception for impact driving is acknowledged but not analyzed.

Alternative 1 indicates that impact driving is necessary for two minutes at each pile. Again, no estimate of the number of piles is provided. The estimate of the total time used in impact pile driving is 18 hours (DEIR, page 30-1 to 30-11).

Given the dB associated with both types of construction, the number of driving sites should be much more exact. Also, if these extreme dBA levels surround a noise source for a four-mile radius, the impact of this noise and attenuation should be included. Measurements of noise and vibration level may be roughly analogized to everyday sources of noise and vibration, but at the extremes captured in the DEIR the effect of a sustained impact is necessary.

Starter casings for foundation piers for the intake structures will be installed using vibratory methods over a period of 18 months, but the number of locations is not provided. (DEIR, page 30-35 to 30-38)

Vibratory pile driving will also be necessary to install sheet piles for an electrical service building, for a period of two hours, but no location is provided. The DEIR merely states that the location will be “farther away from surrounding receptors.” (DEIR, page 30-30 to 30-34)

After the construction of the cofferdam and training wall, the balance of the 12-year construction schedule will involve vibratory pier case driving and standard heavy equipment to build the rest of the intake components. This phase of construction is significant, yet nothing more than this is offered regarding necessary hours over 12 years, or how much will be devoted to impact as opposed to vibratory pile driving. (DEIR, page 30-11 to 30-15)

The DEIR Does Not Adequately Describe Noise from Tugboats and Barges Over a Twelve to Fourteen Year Period

Construction will include the use of tugboats and barges, at a dBA of 89 at 50 feet) of a tugboat (DEIR, page 23-19 to 23-28). There is no reference to how often either will be used over twelve to fourteen years, where, and the duration of a single instance of utilization.

The DEIR Does Not Adequately Describe Noise from Pumping Stations

Long term operation of the project would involve the “periodic and sometimes continuous use” (these durations are mutually exclusive) of pumps within the Bethany Reservoir Pumping Plant. (p. 24-61). This operation could create a combined sound level of up to 116 dBA with all pumps running at full speed. The DEIR dismisses this projection, claiming without evidence that because the pumps will operate deep within the underground structure, they will not create a significant source of sound, compared to the air handlers required for equipment cooling (p. 24-61). There is no data whatsoever supporting this representation.

The DEIR Uses Overly General Language to Describe the Effects of an Additional Intake Alternative 2a

Alternative 2a states:

The effects under Alternative 2a would be the same as Alternative 1, except for the addition of Intake A, the additional tunnel from Intake A to Intake B, an extension of the intake haul road to Intake A (including a new bridge over a drainage channel), the Jones Control Structure, the Jones 30 Outlet Structure, the Jones tunnel, and the Delta-Mendota Control Structure. Under this alternative, three intakes would be constructed instead of two, to accommodate the design capacity of 7,500 32 cubic feet per second (cfs) under this alternative. Construction of Alternative 2a would require approximately 13 years to complete.” (DEIR, p. 24-45)

The addition of a whole new intake is too significant to make brief reference to it, as merely an exception to Alternative 1.

The DEIR similarly minimizes the noise associated with Alternative 2a again on p. 24-45:

As noted above, the Southern Complex and South Delta Conveyance Facilities would be the same as Alternative 1, with the addition of the Jones Control Structure, Jones tunnel, Jones Outlet Structure and Delta-Mendota Control Structure in the approach channel of Jones Pumping Plant, all of which would be required for a pumping capacity of 7,500 cfs.

Construction of the Delta-Mendota Control Structure would require temporary installation of sheet piles for a bypass channel, which would be removed after facility buildout is complete. Pile driving would be done using vibratory methods.

CHAPTER 30: CLIMATE CHANGE

The Projected Impacts of the Project in Conjunction with the Modeled Effect of Climate Change on Water Flow and Water Quality During the Project's Lifetime Must Be Evaluated

Appendix 30-A, Cal Sim 3 Results Sensitivity to 2030 Climate Change and Sea Level Projections reviews the various climate change assumptions that are being used to assess sea level rise, the expected flows in the watershed, and the effect on salinity in the Delta for 2040. The analysis was constructed to compare projected 2040 data with the no project alternative.

This appendix notes in paragraph 2, lines 16-17, that “(t)his analysis is not required by CEQA and is not used in support of the CEQA finding provided in Chapters 7-32 of the Draft Environmental Impact Report EIR.”

The Delta Conveyance Project DEIR asserts that impacts of climate change are not required by CEQA. That may be true strictly in terms of current CEQA Guidelines but it fails to recognize the relevance and potential significance of the combined impact of the project and climate induced hydrological changes to the Delta environment. However, this is an enormous project that will not be completed until 2040 and involves long-term operational impacts on the Delta ecosystem well into the 21st century. The project proposes to change the location of State Water Project withdrawals so that less water will flow into the Delta from the north.

A central environmental issue associated with the project is to what extent the project, by taking more water from the Sacramento at the north end of the Delta

and reducing the amount of flow into the north Delta via the Sacramento River, will impact future salinity levels in the Delta and how that will affect the viability of agriculture as well as both fisheries and terrestrial species. This will be an important factor in the deliberations of the State Water Resources Control Board, which must permit the new location for withdrawals by the State Water Project.

The Impacts of Climate Change Must Be Based on Climate Change Modelling that Include Hot/Dry Scenarios in addition to Central Tendency Scenarios that Model Hydrological Conditions Extending to the Project's Lifetime, from 2040 out at Least to 2070

The DEIR concludes that the

[P]roject alternatives would not cause substantial increases in chloride concentrations in study area waterbodies relative to existing conditions. As such, the project alternatives would not cause additional exceedance of applicable chloride water quality objectives/criteria by frequency, magnitude, and geographic extent that would result in adverse effects on any beneficial uses of study area waterbodies. Because chloride concentrations are not expected to increase substantially, the project alternatives would not cause long-term degradation of chloride in study area waterbodies that would result in substantially increased risk for adverse effects on any beneficial uses. (Chapter 9, pages 9-86-7)

It also models potential 2070 sea level rise models, but only from the perspective of the operational capability of the intake pumps. It concludes that the pumps will be safe from a significant increase in sea level.

Yet, climate change models predict more frequent and severe atmospheric river events interspersed with more frequent and severe droughts, both of which will affect the volume and timing of flows into the Delta.

The Bureau of Reclamation has downscaled a global climate model for regional planning using the CalSim3 model and developed five different climate scenarios, including Warm-Wet, Warm-Dry, Hot-Wet, Hot-Dry and Central Tendency climate scenarios and applied it to the American River Basin. (Bureau of Reclamation, Region 10, "American River Basin Study, August 2022, page ES-12). The Water Forum, a Sacramento-based organization concerned with both water sustainability and lower American River health, has utilized the Bureau's climate model to further model the impacts of the Hot-Dry climate change scenario for the American River Basin with respect to how that might impact Folsom Reservoir storage and flows and temperatures in the Lower American River. The results translate into more drought years, larger flood events and higher water temperatures in the lower American River (Water Forum, "Impacts of Growth and Climate Change on Water Supply Reliability and River Health", study not yet released).

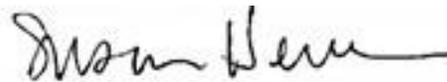
Though technically complicated, we believe that this approach can and should be expanded to include climate change impacts on water storage and flows from the Sacramento River Basin into the North Delta.

It is essential that the impacts associated with the proposed new North Delta intake diversions be modelled not just under current conditions but under both central tendency and hot/dry modelling scenarios extending out to at least to 2070. When combined with moderate to high sea level rise scenarios in climate models, the environmental analysis of the project will provide a necessary and much more complete scenario of the range of impacts of the project on the Delta that is essential to informed decision-making about the project.

This concludes the comments of our environmental organizations. Please know that the Delta Conveyance is a transformative and controversial project for the State of California that will benefit some areas of the state at potentially significant cost to other areas of the state. As we and other commenters will undoubtedly document, this environmental document, together with its length and confusing organization, has significant errors and omissions that do not well serve the public interest. It behooves the sponsors to diligently pursue a thoughtful and diligent effort to improve the analysis and effectively communicate the project's impacts.



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Attachments:

Memorandum from Gary Ivey, Ph.D., Pacific Flyway Program, International Crane Foundation

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