Developments after Publication of the Proposed Final Environmental Impact Report

July 2017

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Executive Summary

Background and Context

The Bay Delta Conservation Plan/California WaterFix Final Environmental Impact Report/Environmental Impact Statement (Final EIR/EIS) was posted online December 22, 2016. On December 30, 2016, The U.S. Bureau of Reclamation (Reclamation), in coordination with the California Department of Water Resources (DWR), issued a Notice of Availability (see 81 Federal Register 251 (30 December 2016) pp. 96485-96486), as required by the Council on Environmental Quality's (CEQ's) National Environmental Policy Act (NEPA) regulations (see 40 CFR Sections 1506.9 and 1506.10) stating that the Final EIR/EIS was made available to the public on December 22, 2016.

This Final EIR/EIS was prepared jointly by lead agencies: DWR and Reclamation (together referred to as lead agencies). The Final EIR/EIS describes reasonable, potentially feasible alternatives, discusses potential environmental impacts, and identifies mitigation measures that would help avoid or minimize significant or adverse impacts where feasible. It also provides responses to all substantive comments received on the 2013 Draft EIR/EIS and 2015 Partially Recirculated Draft EIR/Supplemental Draft EIS (RDEIR/SDEIS). All of these documents were prepared as joint federal and state environmental documents intended to satisfy both NEPA and the California Environmental Quality Act (CEQA).

Notably, the CEQA component of the Final EIR/EIS published in December 2016 was a *proposed* Final EIR. Under CEQA, a Final EIR does not become official until it is "certified" by a lead agency's final decision-maker. (See CEQA Guidelines, § 15090, subd. (a).) CEQA case law therefore recognizes that, even after being released to the public, a proposed Final EIR can be updated and modified up until the time of certification or even "recertification." (See, *e.g., Beverly Hills Unified School Dist. v. Los Angeles County Metropolitan Transportation Authority* (2015) 241 Cal.App.4th 627, 656-657, 664-666 [lead agency decisionmaking body "recertifies" a Final EIR for subway project after preparing an "addendum" to original Final EIR in order to address certain air quality issues].)

The December 22, 2016, proposed Final EIR, along with this document, is considered the full Final EIR for purposes of CEQA. This document addresses developments that have occurred since the posting of the proposed Final EIR in December 2016. This document has been prepared by the California Department of Water Resources (DWR), the CEQA lead agency, as a CEQA-only document. Reclamation will separately address issues with the Final EIS. The lead agencies have identified errors to correct for the record. DWR and Reclamation received comments on the proposed Final EIR that were assessed and are considered in this document. The Federal Endangered Species Section 7 process resulted in Biological Opinions (BiOps) from the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), which were made available to DWR on June 23, 2016, and are considered in this document. The State Water Resources Control Board (SWB) Change Petition Hearing process and the California Endangered Species 2081 process are ongoing.

Contents

Included in this document are corrections to the December 2016 proposed Final EIR, an assessment of public comments received after posting the Final EIR and other information received, a summary of the SWB Change Petition Hearing process thus far, and a summary of the Federal Endangered Species Section 7 and the California Endangered Species 2081 processes.

<u>Corrections</u> - This section addresses minor changes in the proposed Final EIR, including discrepancies, typographical errors, and other corrections identified after the document was published on December 22, 2016. The "Correction" column in Table 2-1 replaces text within the Final EIR.

<u>Comments and other Information Received after Publication</u> - This section includes a discussion of comments received and other information after publication of the Final EIR/EIS on December 22, 2016, including those comments received during the 30-day Federal Register notice period, which began on December 30, 2016, in subsection 3.1. Here, DWR details the approach to considering comments received during the Federal Register notice period, a summary of the comments received on the Final EIR/EIS, and comment tables as attachments. Subsection 3.2 discusses comments received after the close of the Federal Register notice period. In subsection 3.3, we provide a list of other information, including new legislation, reports, and events that DWR considered prior to certification.

State Water Board Hearing on California WaterFix Water Rights Change Petition Process

In August 2015, the CA Department of Water Resources' (DWR) and the U.S. Bureau of Reclamation's (Reclamation) submitted a Petition to the State Water Resources Control Board (State Water Board) for changes to points of diversion (CPOD) to their water right permits necessary for the proposed California WaterFix. In October 2015, the State Water Board noticed the hearing on the Petition, identified key hearing issues, and stated that the hearing would be conducted in two parts. Part 1 key issues are to address effects of the Petition on municipal, industrial and agricultural uses of water, including associated legal users of water and whether the petitioned project will injure other legal users of water. Part 2 key issues are to address effects of the petitional uses, including appropriate Delta flow criteria, public interest considerations, and consideration of a final CEQA document. Over 70 parties are participating in the hearing.

In 2016 and 2017, in Part 1 of the hearing, DWR and Reclamation presented and submitted expert witness testimony and exhibits on the petitioned project, California WaterFix Alternative 4A, which demonstrate that the petitioned project protects beneficial uses and will not result in injury to other legal users of water. Part II is expected to begin in the fall of 2017. In January, June, and July 2017, many of the parties to the CPOD hearing submitted comments on the California WaterFix FEIR/FEIS to DWR and Reclamation. Section 4 of this document assesses the information in these comments, which included documents also submitted to the State Water Board in the CPOD hearing. As discussed in Section 4, these comments include issues that have previously been addressed in the Final EIR/EIS, are issues that do not raise any new significant impacts, and do not raise new impacts outside those assessed by the environmental documents. Section 4 also provides a summary of DWR's and Reclamation's rebuttal testimony submitted in March 2017and sur-rebuttal testimony submitted in June 2017 for the CPOD hearing that are relevant to assessing the comments received on the Final EIR/EIS.

<u>Federal and State Endangered Species Compliance Processes</u> (Section 7 and Fish and Game Code, section 2081) - This section describes the differences (analytical approach and mitigation) between the Final EIR/EIS and the NMFS and USFWS Biological Opinions (BiOP) and CDFW draft 2081(b) Incidental Take Permit (ITP) application for the California WaterFix (subsections 5.1 and 5.2). In addition, this section describes how updated analyses and information presented in the BiOPs and draft 2081(b) documents do not change the impact conclusions for listed species analyzed in the Final EIR/EIS. Lastly, subsection 5.3 describes the California WaterFix Aquatic Science Peer Review Process, which provided an independent panel review of the analytical approach and Adaptive Management Program included in the BiOPs and 2081(b) document.

Conclusion

The lead agencies recognize that, external to the project, there are several ongoing processes that have affected, and will affect, the planning and implementation of the project. These include updates to relevant laws and regulations and regional planning documents, etc. This document demonstrates that the lead agencies are actively engaged in these pertinent developments. Because project management and planning is an ongoing and adaptive process, it is important that the lead agencies take into consideration such new developments as they come to light.

Several processes related to the proposed project are still ongoing, including the State Water Resources Control Board Change Petition Hearing process. This document provides a good faith effort to summarize important developments that have occurred since the Final EIR/EIS was posted for the benefit of the reader.

Many comments on the RDEIR/SDEIS urged the lead agencies to recirculate some or all of the EIR/EIS for a second time. Many commenters argued that additional alternatives should have been considered.

CEQA requires a lead agency to recirculate an EIR only when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review but before certification. (CEQA Guidelines, § 15088.5, subd. (a).)

As described within the Introduction of the RDEIR/SDEIS, the lead agencies recirculated portions of the DEIR/SEIS after adding new information that the lead agencies determined to be significant new information requiring recirculation. The lead agencies have also included new information within the Final EIR/EIS, but the new information is not considered significant new information requiring recirculation (See CEQA Findings, Part III, Section E).

An agency must recirculate an EIR when "significant new information" is added after public review but prior to certification. (CEQA Guidelines, § 15088.5; see also Citizens for a Sustainable Treasure Island v. City and County of San Francisco (2014) 227 Cal.App.4th 1036, 1063.) Information is "significant" so as to require recirculation only if it changes the EIR in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect. (Pub. Resources Code, §21092.1.) The Guidelines specify that significant new information includes, among other things: (1) A new significant environmental impact resulting from the project or from a new mitigation measure proposed to be implemented; (2) A substantial increase in the severity of an environmental impact unless mitigation measures are adopted that reduce the impact to a level of insignificance; (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed that would clearly lessen the environmental impacts of the project but be unacceptable to the project proponent; or (4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. (CEQA Guidelines, § 15088.5, subd. (a).) As supported by the information in this document, no new information was provided for DWR's record that would trigger the provisions of § 15088.5, subd. (a).

All information included in the Final EIR/EIS merely clarifies or amplifies or makes insignificant modifications to the EIR/EIS. (§ 15088.5, subd. (b); See *Laurel Heights Improvement Association v. Regents of University of California (Laurel Heights II*) (1993) 6 Cal.4th 1112, 1129-1130.)

Although modeling results were updated, the new modeling merely confirmed previous conclusions, and thus did not trigger any obligation to recirculate. (See *San Francisco Baykeeper v. California State Lands Commission* (2015) 242 Cal.App.4th 202, 224-225 [new modeling confirming earlier conclusion about effects of mining on Bay environment did not trigger recirculation]; *Beverly Hills Unified School Dist. v. Los Angeles County Metropolitan Transportation Commission* (2015) 241 Cal.App.4th 627, 660-666 [Final EIR contains substantial amounts of new information, including numerous new seismic studies].)

As provided in the Supplemental Modeling Appendix, and as further explained in the Final EIR/EIS, the range of operational criteria and scenarios are within the scope of the modeling available through the RDEIR/SDEIS. A wide range of modeled scenarios sufficiently provide the information to determine possible environmental impacts of all action alternatives considered.

Contrary to the contention in some comments on the RDEIR/SDEIS, the formulation of Alternatives 4A, 2D, and 5A, though somewhat different from the Alternatives found in the Draft EIR/EIS, did not require an entirely new EIR/EIS. Rather, the RDEIR/SDEIS adequately addressed the environmental impacts of those sub-alternatives. Alternative 4A will entail the construction and operation of north Delta intakes and associated tunnel conveyance facilities, and the operation of the SWP as a dual conveyance facility, consistent with the physical features and operations of the updated version of Draft EIR/EIS Alternative 4, as described in RDEIR/RDEIS Appendix A. Alternatives 2D and 5A entail conveyance facilities similar to those proposed in the Draft EIR/EIS under Alternatives 2 and 5. When reviewed together with the Draft EIR/EIS, the RDEIR/SDEIS sufficiently describes and discloses the effects of implementing Alternatives 4A, 2D, and 5A for purposes of CEQA and NEPA. Where appropriate, the RDEIR/DEIS also references the Draft BDCP EIR/EIS.

1.0 Introduction

Since posting the proposed Final EIR/EIS in December 2016, the lead agencies have identified errors to correct for the record. DWR received comments on the proposed Final EIR/EIS that were assessed and considered in this document. Other developments since posting the proposed Final EIR/EIS are addressed in this document, such as the State Water Resources Control Board Change Petition Hearing process, the Federal Endangered Species Section 7 process, and the California Endangered Species 2081 process.

DWR finds nothing described in this document requires further recirculation of some or all of the EIR because significant new information was not added to the Final EIR. (CEQA Guidelines, § 15088.5, subd. (a).)

As stated in the Executive Summary, this document is considered part of the Final EIR for certification purposes.

2.0 Final EIR Corrections

As stated above, this document addresses developments since posting the proposed Final EIR in December 2016. Reclamation will separately address issues with the Final EIS. This section addresses minor, non-substantive changes to the proposed Final EIR and the Mitigation Monitoring and Reporting Program (MMRP) found through discrepancy, typographical, and other corrections. This section addresses modifications after the proposed Final EIR and proposed MMRP were made available for viewing online on December 22, 2016. The modifications presented below include all revisions related to public comments, updates, and clarifications determined necessary by DWR after the publication of the proposed Final EIR. Table 2-1 references the revisions. The correction column replaces text within the Final EIR. The correction column includes a description of the correction with deleted text in strikeout (example, strikeout), added text in red font (example, red font), and clarification notes in italic font (example, *italics*).

CEQA requires a lead agency to recirculate an EIR only when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review but before certification. (CEQA Guidelines, § 15088.5, subd. (a).) No new information was included in this section that would result in: (1) A new significant environmental impact resulting from the project or from a new mitigation measure proposed to be implemented; (2) A substantial increase in the severity of an environmental impact unless mitigation measures are adopted that reduce the impact to a level of insignificance; and/or (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed were added that would clearly lessen the environmental impacts of the project but be unacceptable to the project proponent. DWR has prepared this document to include corrections made to the Final EIR/EIS. Although these corrections have been made, none of the corrections are considered significant new information requiring recirculation.

For instance, no new information was included that would result in: 1) A new significant environmental impact resulting from the project or from a new mitigation measure proposed to

be implemented (see *Laurel Heights Improvement Association v. Regents of University of California (Laurel Heights II)* (1993) 6 Cal.4th 1112, 1129; see also *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 447); 2) A substantial increase in the severity of an environmental impact unless mitigation measures are adopted that reduce the impact to a level of insignificance; and/or 3) A feasible project alternative or mitigation measure considerably different from others previously analyzed were added that would clearly lessen the environmental impacts of the project but be unacceptable to the project proponent. (See also CEQA Guidelines, § 15088.5, subd. (a).)

All of the corrections included in Table 2-1 make insignificant modifications to the EIR/EIS. (See *Laurel Heights II, supra*, 6 Cal.4th at pp. 1129-1130.)

As discussed in Section 5.0 Endangered Species Compliance, the proposed action further refines the restoration mitigation measures analyzed in the Final EIR/EIS. In consultation with CDFW and USFWS staff, restoration of nearly 1,828 acres of habitat suitable for delta smelt is proposed. This proposed restoration increase is greater than the mitigation acreage assumed in the proposed Final EIR Alternative 4A analysis. Accordingly, the environmental commitments (summarized in Table 3-9 of the Final EIR/EIS) have been revised to accommodate the potential impact acreage from the additional restoration acreage. Environmental Commitment 4, Tidal Natural Communities Restoration, has been changed to up to 1,828 acres per the USFWS Biological Opinion. Environmental Commitment 7, Riparian Natural Community Restoration, has been changed to up to 271 acres. Environmental Commitment 8, Grassland Natural Community, has been changed to up to 2,092 acres. See Attachment 1 for revised version of Table 3-9 Environmental Commitments under Alternative 4A (Chapter 3 Description of Alternatives, page 3-55).

Chapter/	Page	Line	Table/	Correction
Appendix			Figure	
Executive	ES-49	12-		The greatest number of barge uploading facilities would
Summary		15		be needed under Alternatives 4, 4A, 2D, and 5A, at eight
				seven facilities. The smallest number of barge facilities
				would be needed under Alternative 1B, 1C, 2B, 2C, 6B, 6C,
				and 9, with only one unloading facility. Alternatives 4A,
				2D, and 5A would each require two unloading facilities.
Executive	ES-59		Table ES-	Mitigation Measure GW-1: Maintain Water Supplies in
Summary			8	Areas Affected by Construction Dewatering and
				Conveyance Operations
Executive	ES-60		Table ES-	GW-6: Deplete groundwater supplies or interfere with
Summary			8	groundwater recharge, alter local groundwater levels,
-				reduce the production capacity of preexisting nearby
				wells, or interfere with agricultural drainage as a result of
				implementing CM2–CM21/EC 3, 4, 6-12, 15 and 16
Executive	ES-60		Table ES-	GW-7: Degrade groundwater quality as a result of
Summary			8	implementing CM2–CM21/EC 3, 4, 6-12, 15 and 16

Table 2-1. Corrections to the Proposed Final EIR.

Chapter/	Page	Line	Table/	Correction
Appendix			Figure	
Executive	ES-60		Table ES-	WQ-2: Effects on ammonia concentrations resulting from
Summary			8	implementation of CM2–CM21/EC 3, 4, 6-12, 15 and 16
Executive	ES-61		Table ES-	WQ-4: Effects on boron concentrations resulting from
Summary			8	implementation of CM2–CM21/EC 3, 4, 6-12, 15 and 16
Executive	ES-61		Table ES-	WQ-6: Effects on bromide concentrations resulting from
Summary			8	implementation of CM2–CM21/EC 3, 4, 6-12, 15 and 16
Executive	ES-61		Table ES-	WQ-8: Effects on chloride concentrations resulting from
Summary			8	implementation of CM2–CM21/EC 3, 4, 6-12, 15 and 16
Executive	ES-61		Table ES-	WQ-10: Effects on dissolved oxygen resulting from
Summary			8	implementation of CM2–CM21/EC 3, 4, 6-12, 15 and 16
Executive	ES-62		Table ES-	WQ-12: Effects on electrical conductivity concentrations
Summary			8	resulting from implementation of CM2- CM21/EC 3, 4, 6-
				12, 15 and 16
Executive	ES-62		Table ES-	WQ-14: Effects on mercury concentrations resulting from
Summary			8	implementation of CM2–CM21/EC 3, 4, 6-12, 15 and 16
Executive	ES-62		Table ES-	WQ-16: Effects on nitrate concentrations resulting from
Summary			8	implementation of CM2–CM21/EC 3, 4, 6-12, 15 and 16
Executive	ES-63		Table ES-	WQ-18: Effects on dissolved organic carbon
Summary			8	concentrations resulting from implementation of CM2-
				CM21/EC 3, 4, 6-12, 15 and 16
Executive	ES-63		Table ES-	WQ-20: Effects on pathogens resulting from
Summary			8	implementation of CM2–CM21/EC 3, 4, 6-12, 15 and 16
Executive	ES-63		Table ES-	WQ-22: Effects on pesticide concentrations resulting from
Summary			8	implementation of CM2–CM21/EC 3, 4, 6-12, 15 and 16
Executive	ES-63		Table ES-	WQ-24: Effects on phosphorus concentrations resulting
Summary			8	from implementation of CM2–CM21/EC 3, 4, 6-12, 15 and
E di	FG (2)			
Executive	ES-63		Table ES-	WQ-26: Effects on selenium concentrations resulting from
Summary	FC (4		8	
Executive	ES-64		Table ES-	WQ-28: Effects on trace metal concentrations resulting
Summary			8	16
Executive	FS-64		Table FS-	WO-34: Effects on San Francisco Bay water quality
Summary	15 01			resulting from facilities operations and maintenance
Summary			0	(CM1) and implementation of CM2–CM21/EC 3, 4, 6-12.
				15 and 16
Executive	ES-67		Table ES-	SOILS-6: Accelerated erosion caused by clearing, grubbing,
Summary			8	grading, and other disturbances associated with
				implementation of proposed conservation measures CM2-
			m 11 ===	CM11, CM18 and CM19/EC 3, 4, 6-11
Executive	ES-67		Table ES-	SOILS-7: Loss of topsoil from excavation, overcovering,
Summary			8	and inundation associated with restoration activities as a
				measures CM2-CM11/FC 3 4 6-11

AppendixImage: FigureExecutiveES-67Table ES- 8SOILS-8: Property loss, personal injury, or death from instability, failure, and damage from construction on soils subject to subsidence as a result of implementing the proposed conservation measures CM2-CM11/EC 3, 4, 6-1 11ExecutiveES-67Table ES- 8SOILS-9: Risk to life and property from construction in areas of expansive, corrosive, and compressible soils as a result of implementing the proposed conservation measures CM2-CM11/EC 3, 4, 6-11ExecutiveES-72Table ES- 8Alternatives 2D, 4A, 5A are less-than-significant for AQUA- 8SummaryES-86Table ES- 8Alternatives 2D, 4A, 5A are less-than-significant for AQUA- 8SummaryES-92Table ES- 8Alternatives 2D, 4A, 5A are less-than-significant for AQUA- 8SummaryES-94Table ES- 8Alternatives 2D, 4A, 5A are less-than-significant for AQUA- 8SummaryES-94Table ES- 8Alternative 4AExecutiveES-94Table ES- 8BIO-1: Changes in tidal prennial aquatic natural community as a result of implementing BDCP Conservation Measures or as a result of implementing Alternative 4AExecutiveES-94Table ES- 8BIO-6: Changes in tidal freshwater emergent wetland natural community as a result of implementing BDCP Conservation Measures or as a result of implementing Alternative 4AExecutiveES-94Table ES- 8BIO-6: Changes in nontidal freshwater emergent wetland natural community as a result of implementing BDCP Conservation Measures or as a result of implementing Alternative 4A<	Chapter/	Page	Line	Table/	Correction
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				policies
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Summary	130		8	implementation of CM2–CM21/ EC 3, 4, 6-12, 15, and 16
Executive	ES-		Table ES-	TRANS-11: Compatibility of the proposed water
Summary	130		8	conveyance facilities and other conservation
_				measures/Environmental Commitments with plans and
				policies
Executive	ES-		Table ES-	UT-8: Effects on public services and utilities as a result of
Summary	132		8	implementing the proposed CM2–CM11 and CM20/ EC 3,
D			m 11 52	4, 6-12, 15, and 16
Executive	ES-		Table ES-	ENG-3: Compatibility of the proposed water conveyance
Summary	133		8	racinities and $LM2-LM21/EL 3$, 4, 6-12, 15, and 16 with
Executive	FC	+	Table EC	plans allu policies
Summaw	E3- 142			AQ-25: Generation of cumulative greenhouse gas
Summary	142		0	implementation of CM1/Water Conveyance Facility

Chapter/	Page	Line	Table/	Correction
Appendix			Figure	
Executive	ES-		Table ES-	AQ-24: Generation of regional criteria pollutants from
Summary	142		8	implementation of CM2–CM11/EC 3, 4, 6-11
Executive	ES-		Table ES-	A0-25: Exposure of sensitive receptors to health hazards
Summary	142		8	from localized particulate matter, carbon monoxide, and
J			_	diesel particulate matter from implementation of CM2-
				CM11/EC 3, 4, 6-11
Executive	ES-		Table ES-	AQ-26: Creation of potential odors affecting a substantial
Summary	142		8	number of people from implementation of CM2-CM11/EC
				3, 4, 6-11
Executive	ES-		Table ES-	AQ-27: Generation of cumulative greenhouse gas
Summary	142		8	emissions from implementation of CM2–CM11/EC 3, 4, 6-
				11
Executive	ES-		Table ES-	NOI-4: Exposure of noise-sensitive land uses to noise from
Summary	143		8	implementation of proposed Conservation Measures 2–
	_	-		10/ Environmental Commitments 3, 4, 6-10
Executive	ES-		Table ES-	HAZ-7: Create a substantial hazard to the public or the
Summary	144		8	environment through the release of hazardous materials
				or by other means as a result of implementing CM2–CM11,
				CM13, CM14, CM16, CM18 and CM19/ Environmental
		-		Commitments 3, 4, 6-11, and 16
Executive	ES-		Table ES-	PH-5: Increase in vector-borne diseases as a result of
Summary	145		8	Implementing CM2-CM7, CM10, and CM11/
Executive	FS-		Table FS-	DH 7: Substantial mobilization of or increase in
Summary	145		o	constituents known to bioaccumulate as a result of
Summary	145		0	implementing CM2 CM4 CM5 and CM10/Environmental
				Commitments 3. 4. and 10
Executive	ES-		Table ES-	Impact PH-9: Increase in Microcystis Bloom Formation as
Summary	145		8	a Result of Implementing CM2 and CM4/ EC 4.
Executive	ES-		Table ES-	MIN-5: Loss of availability of locally important natural gas
Summary	146		8	wells as a result of implementing CM2-CM21/EC 3, 4, 6-
J			_	12, 15, and 16
Executive	ES-		Table ES-	MIN-6: Loss of availability of extraction potential from
Summary	146		8	natural gas fields as a result of implementing CM2- CM21/
				EC 3, 4, 6-12, 15, and 16
Executive	ES-		Table ES-	MIN-11: Loss of availability of locally important aggregate
Summary	146		8	resource sites (mines and MRZs) as a result of
				implementing CM2-CM21/ EC 3, 4, 6-12, 15, and 16
Executive	ES-		Table ES-	MIN-12: Loss of availability of known aggregate resources
Summary	146		8	as a result of implementing CM2-CM21/ EC 3, 4, 6-12, 15,
			m 11 ===	and 16
Executive	ES-		Table ES-	PALEO-2: Destruction of unique or significant
Summary	147		8	paleontological resources associated with the
1				\mid implementation of CM2-CM21/EC 3, 4, 6-12, 15, and 16

Chapter/	Page	Line	Table/	Correction
Appendix			Figure	
Chapter 1,	1-33—		Table 1-1	Add Agency California Department of Conservation to the
Introduction	1-38			Permit, Decision, Approval, or Other Action column to include Permits or Consultations Surface Mining and
				Reclamation Act.
				Delete Surface Mining and Reclamation Act from Agency
				Contra Costa County (NEPA cooperating agency),
				Sacramento County (NEPA cooperating agency, Solano
				(NEPA cooperating agency).
				See Attachment 1 for corrected version of the table.
Chapter 3,	3-75		Table 3-	Table3-13a incorrectly identified several non-federally
Description of	to 76		13a	listed species as being under the jurisdiction of the
Alternatives				USFWS.
				The status of tricolored blackbird was changed to reflect
				its status as a candidate for listing under CESA at the time
				the document was finalized. See Attachment 1 for the
				correct version of Table 3-13a.
Chapter 3,	3-102		Table 3-	Tunnel 1 connecting Intake s 1 and 2 to the intermediate
Description of			19	forebay, maximum flow 6,000 cfs. See Attachment 1 for
Alternatives				the corrected version of Table 3-19.
Chapter 6,	6-1	20-		Alternatives 4, 4A, 2D, and 5A would feature some
Surface Water		23		reduction in reverse flow conditions. Under Alternatives 4
				and 4A, reverse flows would be reduced in all months
				except April and May, while under Alternatives 4A, 2D and
				5A, reverse flows would be reduced in all months except
				April.

Chapter/	Page	Line	Table/	Correction
Appendix	_		Figure	
Chapter 7,	7-51	13-		project proponents DWR will determine the location of
Groundwater		19		wells within the anticipated area of influence of
				construction sites at which dewatering would occur and
				the location of wells within the anticipated area of
				influence of conveyance operations on the Sacramento
				River above and below the north Delta intakes, within an
				approximately 4-mile wide corridor (about 2 miles on
				either side of the river). Based on available information,
				thorough site investigations, and desk studies, ; the
				location of wells, depths of the wells and the depth to
				groundwater within these wells will be determined.
				During construction dewatering, monitoring wells should
				be installed sufficiently close to the groundwater
				dewatering sites and along the Sacramento River, or if
				possible, water levels in existing wells will be monitored,
				in order to be able to detect changes in water levels
				attributable to dewatering activities and conveyance
				operations. Monitoring wells would continue to be used as
				part of a conveyance operation monitoring program.
				Monitoring would occur and be reported on a monthly
				basis with an annual summary report prepared by the
				project proponents for up to 5 years after commencement
				of conveyance operations. If monitoring data or other
				substantial evidence indicates that groundwater levels
				have declined in a manner that could adversely affect
				adjacent wells, temporarily rendering the wells unable to
				provide adequate supply to meet preexisting demands or
				planned land use demands, DWR will implement one or
				more of the following measures:

Chapter/	Page	Line	Table/	Correction
Appendix			Figure	
Chapter 7, Groundwater	7-51	24- 36		 Offset domestic water supply losses attributable to construction dewatering activities and conveyance operations. DWR will ensure domestic water supplies provided by wells are maintained during construction and conveyance operations. Potential actions to offset these losses include installing cutoff walls in the form of sheet piles or slurry walls to depths below groundwater elevations, deepening or modifying deepening, modifying or providing new wells used for domestic purposes to maintain water supplies at preconstruction levels, or securing potable water supplies from offsite sources. Offsite sources could include potable water transported from a permitted source or providing a temporary connection to nearby wells not adversely affected by dewatering or operations. Offset agricultural water supplies are maintained during construction and operations or provide compensation to offset for crop production losses. If feasible, DWR will install sheet piles to depths below groundwater elevations, or deepening, modifying or providing newdeepen or modify the wells
Chapter 7, Groundwater	7-51	41- 43		DWR project proponents will be responsible for determining the area of influence of construction dewatering operations and conveyance operations
Chapter 7, Groundwater	7-52	2-6		shallow monitoring wells may be installed prior to construction dewatering operations and conveyance operations. Monitoring of water levels in these wells will occur during construction and up to 5 years during conveyance operations. Implementation of measures necessary to offset domestic and agricultural water supply losses will occur during construction and conveyance operations as necessary.

Chapter/	Page	Line	Table/	Correction
Appendix			Figure	
Chapter 7,	7-52	11-		dewatering period and on a monthly basis during
Groundwater		14		conveyance operations. Upon completion of construction,
				the water levels in the monitoring wells will be measured
				and monitoring will continue for up to 6 months following
				termination of construction dewatering activities or less if
				groundwater levels reach preconstruction levels. During
				conveyance operations, monitoring will continue for up to
				5 years.
Chapter 7,	7-52	22		groundwater aquifer that is affected by dewatering
Groundwater				showing initial, preconstruction water levels and final,
				post-construction and conveyance operations water
				levels.
Chapter 7,	7-52	23		If water level data indicate that dewatering operations or
Groundwater				conveyance operations are responsible for reductions
Chapter 7,	7-53	21-		Model simulations indicate up to 5-foot episodic lowering
Groundwater		26		of groundwater levels beneath the Sacramento River on
				either side of the river due to lower flows in the river as a
				result of diversions at the north Delta intakes that result
				in a reduction in river flows and elevations. Shallow wells
				in the vicinity of this corridor might see an episodic
				decrease in yields which might affect the existing or
				pranneu ranu-uses for which permits have been granted in
				this area. Due to the implementation of Mitigation
				measure GW-1, no additional mitigation measures are
				requireu.
		1		

Chapter/	Page	Line	Table/	Correction
Appendix			Figure	
Chapter 7,	7-51,	11-		Mitigation Measure GW-1: Maintain Water Supplies in
Groundwater	7-62,	12,4		Areas Affected by Construction Dewatering and
	7-69,	1-		Conveyance Operations
	7-75,	42,3		
	7-87,	6-		
	7-111,	37,2		
	7-119,	9-		
	7-127,	30,2		
	7-134,	8-		
	7-153.	29.2		
	7-155	2-		
		23,4-		
		5.12-		
		13.1		
		0-		
		11.6-		
		7.27-		
		28		
Chapter 11.	11-12		Table 11-	Alternatives 4 and 4A should each show 7 barge landings
Fish and			1A-SUM1	instead of 6, and Alternative 9 should have 5 barge
Aquatic				landings. See Attachment 1 for the corrected version of
Resources				Table 11-1A-SUM1.
Chapter 11.	11-50	19		discussed above for Alternative 1A, as well as one
Fish and				additional barge landing at Clifton Court Forebay.
Aquatic				
Resources				
Chapter 11	11-50	29		Alternative 4 includes a conveyance tunnel and six seven
Fish and	11 00			harge landings
Aquatic				Surge minunger
Resources				
Chapter 11	11-50	35		margin habitat) that would be permanently replaced by
Fish and	11 00	00		the intake structures. The six seven harge
Aquatic				the mane structures. The six seven burge
Resources				
Chanter 11	11-89	32		intakes a conveyance tunnel and six seven harge
Fish and	11.07	52		landings Therefore the total area affected by
Iqualic				

Chapter/ Page	Line	Table/	Correction
Appendix		Figure	
Chapter 11,11-Fish and291,Aquatic11-Resources3181	8- 12,8- 12		historical and current urban discharges contamination from the city of Sacramento anthropogenic and natural sources as well as water management activities may be present in the areas of the proposed water intakes. Metals (<i>e.g.</i> , lead and copper), hydrocarbons, organochlorine pesticides, and PCBs are common urban contaminants with the greatest affinity for sediments; thus these contaminants could be present in sediments that would be disturbed during installation of the cofferdams and dredging.
Chapter 11, 11- Fish and 3424 Aquatic Resources	17- 34		dredging.Implementation of Mitigation Measures AQUA-1a and AQUA-1b would reduce these potential effects depending on the degree to which they can be implemented (see below) and they would not be adverse. CEQA Conclusion: As described in Alternative 4, Impact AQUA-109, the impact of the construction of the water conveyance facilities on splittail would not be significant except for construction noise associated with pile driving. Construction of Alternative 4A involves several elements with the potential to affect splittail. However, these turbidity and hazardous material spill effects will be effectively avoided and/or minimized through implementation of environmental commitments (see Impact AQUA-1 and Appendix 3B, Environmental Commitments, AMMs, and CMs: Environmental Training; Stormwater Pollution Prevention Plan; Erosion and Sediment Control Plan; Hazardous Materials Management Plan; Disposal of Spoils, Reusable Tunnel Material, and Dredged Material; Fish Rescue and Salvage Plan; and Barge Operations Plan).Implementation of Mitigation Measures AQUA-1a and AQUA-1b would potentially-reduce noise impacts to less- than-significant levels. The extent to which these measures can be implemented is unknown at this time. Significant impacts may be unavoidable if these measures cannot be implemented to a sufficient degree to substantially reduce the amount of impact driving or the noice levels produced by impact driving.

Chapter/	Page	Line	Table/	Correction
Appendix			Figure	
Chapter 11,	11-	30-		The impacts of restored habitat conditions would range
Fish and	3603	31		from less than significant slightly beneficial to beneficial,
Aquatic				depending
Resources				
Chapter 12,	12-	4,		Ernst <mark>et al. 1994 and Lovich 2009</mark>
Terrestrial	332,12	21,		
Biological	-334,	6,		
Resources	12-	21,		
	995,	1,		
	12-	19,		
	967,	10,		
	12-	27,		
	1602,	44,		
	12-	15		
	1604,			
	12-			
	2265,			
	12-			
	2267,			
	12-			
	2946,			
	12-			
	2949			
Chapter 12,	12-	19-		Ernst, C. H. and J. E. Lovich. 2009. Turtles of the United
Terrestrial	3861	20		States and Canada. Second edition. Baltimore, MD: Johns
Biological				Hopkins University Press.
Resources				

Chapter/	Page	Line	Table/	Correction
Appendix	_		Figure	
Chapter 14,	14-52,	11-		
Agricultural	14-66,	12,1-		Mitigation Measure GW-1: Maintain Water Supplies in
Resources	14-75,	2,32-		Areas Affected by Construction Dewatering and
	14-83,	33,3		Conveyance Operations
	14-91,	7-		
	14-99,	38,2		
	14-	6-		
	107,	27,5-		
	14-	6,1-		
	128,	2,8-		
	14-	9,8-		
	140,	9,		
	14-	33-		
	147,	34,		
	14-	12-		
	155,	13,		
	14-	30-		
	162,	31,		
	14-	12-		
	170.	13.		
	14-	5-6.		
	178.	22-		
	14-	23.		
	195.	34-		
	14-	35.1		
	203	0-		
	14-	11.4		
	212	1-42		
	14-			
	223			
Chapter 14,	14-	30-		Please see Mitigation Measure WQ-11 under Impact WQ-
Agricultural	195	31		11 in the discussion of Alternative 4A in Chapter 8, Water
Resources				Quality. (Mitigation Measure WQ-11f does not apply to
				Alternative 4A).
Chapter 15,	15-27	7		Reclamation and California Department of Parks and
Recreation				Recreation 2005 2012)
Chapter 15,	15-27	32		Department of Parks and Recreation 20052012).
Recreation				
Chapter 15,	15-31		15-8	Bureau of Reclamation and California Department of
Recreation				Parks and Recreation
				2005 2012; Springer

Chapter/	Page	Line	Table/	Correction
Appendix			Figure	
Chapter 15, Recreation	15- 469	36- 37		However, the level of impact will not be reduced to a less- than-significant level because it is not certain the mitigation will reduce the level of these impacts to less than significant in all the instances occurring within the entire study area. Therefore, these impacts related to access, noise, and visual setting disruptions are considered significant and unavoidable. However, the impacts related to construction of the intakes will be less than significant.
Chapter 15, Recreation	15- 521	6-9		Bureau of Reclamation and California Department of Parks and Recreation. 2005 2012. San Luis Reservoir State Recreation Area Draft Resource Management Plan/ <u>Preliminary</u> -General Plan Draft Environmental Impact Statement/Revised Draft Environmental Impact Report. Public Review Draft. AprilAugust. Fresno, CA, and Sacramento, CA.
Chapter 18, Cultural Resources and MMRP	18-76, 2-76	33- 35, 10- 15		The U.S. Fish and Wildlife Service, National Marine Fisheries Service, and the U.S. Army Corps of Engineers are is entering into a PA with the California State Historic Preservation Officer for the implementation of NHPA Section 106 for their undertakings associated with the BDCP.
Chapter 19, Transportation	19-1	25- 28		The greatest number of barge uploading facilities would be needed under Alternatives 4, 4A, 2D, and 5A, at eight seven facilities. The smallest number of barge facilities would be needed under Alternative 1B, 1C, 2B, 2C, 6B, 6C, and 9, with only one unloading facility. Alternatives 4A, 2D, and 5A would each require two unloading facilities.
Chapter 22, Air Quality and Greenhouse Gases	22- 521,22 -553, 22- 586,	28- 29,3 3- 34,1 1-12,		AQ-25: Prepare a Project-Level Health Risk Assessment to Reduce Potential Health Risks from Exposure to Localized DPM and PM Concentrations from implementation of Environmental Commitments 3, 4, 6-11
Chapter 22, Air Quality and Greenhouse Gases	22- 522 ,22- 586, 22- 587	39- 41, 7-9, 17- 18		AQ-24: Develop an Air Quality Mitigation Plan (AQMP) to ensure air district regulations and recommended mitigation are incorporated into future conservation measures environmental commitments and associated project activities

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Appendix			Figure	
Chapter 22, Air	22-	39-		AQ-24: Develop an Air Quality Mitigation Plan (AQMP) to
Quality and	520,	41,		Ensure Air District Regulation and Recommended
Greenhouse	22-	24-		Mitigation are Incorporated into Future Conservation
Gases	521,22	26,		Measures Environmental Commitments and Associated
	-522,	39-		Project Activities.
	22-	41,		
	553,	29-		
	22-	31,1-		
	555,	3,		
	22-	23-		
	585,	25,		
	22-	7-9,		
	586,22	13-		
	-587	15		
Chapter 22, Air	22-	1-3,		Mitigation Measure AQ-27: Prepare a Land Use
Quality and	523,	17-		Sequestration Analysis to Quantify and
Greenhouse	22-	19		Mitigate (as Needed) GHG Flux Associated with
Gases	587			Conservation Measures Environmental Commitments and
				Associated project activities.
Chapter 23,	Page	Line		The Final MMRP Mitigation Measure NOI-2 was corrected
Noise	23-52,	1-5,		to include short-term relocation assistance for the
	137,	Line		duration of the vibration-inducing under certain
	211,	3-		conditions: If the designated complaint coordinator
	227	7,37-		activity within 100 feet of residences or other vibration-
		41,		sensitive buildings described above in <i>Action</i> reveals these
		27-		actions are ineffective in reducing vibrations from
		31		construction, the affected residents ^[1] shall be offered
				short-term relocation assistance for the duration of the
				vibration-inducing construction. The Final EIR/EIS,
				Chapter 23, Noise has been corrected to reflect the Final
				MMRP.
				[1] Dermanent regidents en tenents of rental dwelling units
				¹⁴ Permanent residents of tenants of rental dwenning units.
Chapter 24,	24-	20-		Mitigation Measure HAZ-8 is available to reduce the
Hazards and	250,	21,		severity of this impact, however due to inherent
Hazardous	24-	21-		uncertainty this impact remains adverse. such that there
Materials	261,	22,		would be no adverse effect.
	24-	1-2		
	272			

Chapter/	Page	Line	Table/	Correction
Appendix			Figure	
Chapter 31,	31-14		Table 31-	AQ-24: Develop an Air Quality Mitigation Plan (AQMP) to
Other			1	Ensure Air District Regulation and Recommended
CEQA/NEPA				Mitigation are Incorporated into Future Conservation
Required				Measures Environmental Commitments and Associated
Sections,				Project Activities.
including				
Mitigation and				
Environmental				
Commitment				
Impacts				
Environmentall				
y Superior				
Alternatives,				
and Public				
Trust				
Considerations				
Chapter 31,	31-14		Table 31-	AQ-27: Prepare a Land Use Sequestration Analysis to
Other			1	Quantify and Mitigate (as Needed) GHG Flux Associated
CEQA/NEPA				with Conservation Measures Environmental
Required				Commitments and Associated project activities.
Sections,				
including				
Mitigation and				
Environmental				
Commitment				
Impacts,				
Environmentall				
y Superior				
Alternatives,				
and Public				
Trust				
Considerations				

Chapter/	Page	Line	Table/	Correction
Appendix			Figure	
Chapter 31,	31-	39		31.7 Indian Trust Assets
Other	105			ITAs are logal interacts in property hold in trust by the United
CEQA/NEPA				States for federally recognized Indian tribes or individual
Required				Indians. An Indian Trust has three components: (1) the trustee:
Sections,				(2) the beneficiary; and (3) the trust asset. ITAs can include
including				land, minerals, federally reserved hunting and fishing rights,
Mitigation and				federally reserved water rights, and instream flows associated
Environmental				with trust land. Beneficiaries of the Indian Trust relationship
Commitment				are federally recognized Indian tribes with trust land; the
Impacts,				United States is the trustee.
Environmentall				By definition, ITAs cannot be sold, leased, or otherwise
y Superior				encumbered without approval of the United States. The
Alternative,				characterization and application of the United States trust
and Public				relationship have been defined by case law that interprets
Trust				Congressional acts, executive orders, and historic treaty
Considerations				
				All bureaus under the Department of the Interior are
				responsible for, among other things, identifying any impact of
				their plans, projects, programs or activities on ITAs; ensuring
				decision and operational documents; and consulting with
				recognized tribes who may be affected by proposed activities.
				Consistent with this, Reclamation's Indian Trust policy states
				that Reclamation will carry out its activities in a manner which
				protects ITAs and avoids adverse impacts when possible, or
				provides appropriate mitigation or compensation when it is not.
				To carry out this policy, Reclamation incorporated procedures
				the potential effects of its proposed actions on trust assets
				(Reclamation's NEPA Handbook, 2012).
				Reclamation's existing records indicate that there are no Indian
				Trust lands in the project area. No adverse effects would occur
				to ITAs under the Proposed Project/Action or an action
				There are no potentially significant unavoidable impacts to ITAs
				associated with the implementation of the Proposed
				Project/Action or an action alternative.
Appendix 3B.	3B-80	1-4		The study will be conducted concurrent with, or prior to
Environmental	02 00			commencement of construction and implementation of
Commitments				the project mitigation measures and will include visitor
AMMs, and				counts during construction. In order to evaluate the
CMs				effectiveness of the aforementioned mitigation measures,
				the study will include, but are is not limited to, analysis of
				the following as needed and appropriate after
				consultation with the entities listed above
		1	1	

Chapter/	Page	Line	Table/	Correction
Appendix			Figure	
Appendix 31 B,	31B-	18		trenching, over 5.644.13 acres during the course of
Mitigation	18			constructing the facilities. A portion of these facilities lie
Measure WQ-				within the temporary impact footprint for water
7e: CCWD				conveyance construction and therefore only the acreage
Settlement				not already addressed in Chapter 10 is included here.
Agreement				Vegetation would
Appendix 31 B.	31B-	34		affected would be 5.644.13 acres, based on GIS analysis.
Mitigation	18			, , , , , , , , , , , , , , , , , , , ,
Measure WO-				
7e: CCWD				
Settlement				
Agreement				
Appendix 31 B	31B-	21		grading trenching over 78,64,68,96 acres during the
Mitigation	20	21		course of constructing the facilities. A portion of these
Measure WO-	20			facilities lie within the temporary impact footprint for
				water conveyance construction and therefore only the
Settlement				acreage not already addressed in Chanter 10 is included
Agreement				here Most of the primary
Appondix 21 B	21 P	22		across affected would be 79 6469 96 across based on CIS
Appendix 51 D, Mitigation	20	32		analysis
Monguro WO	20			allalysis.
Measure WQ-				
Settlement				
Agreement				
Agreement	210	F 1F		The construction of the Wistoria Island Interconnection
Appendix 31 B,	31B- 2E	5-15		The construction of the victoria Island Interconnection
Miligation Measure WO	25			would result in temporary and permanent impacts on sultivisted londs and tidel percential equation (see a)
Measure WQ-				cultivated failus and tidal perennial aquatic (canar)
				natural communities. Constructing the project would
Settlement				result in the combined loss of approximately $\frac{15}{15}$ 4 acres of
Agreement				Cultivated lands and U.U4 acre of tidal perennial aquatic
				(Table 31B-1). The majority of the permanent facilities,
				approximately 10 acres, would be sited in areas that
				would be temporarily disturbed during conveyance
				facility construction, the effects of which are addressed in
				Chapter 12. Due to the length of time some temporary
				disturbed areas would be unavailable as habitat for
				wildlife, Chapter 12 treated permanent and temporary
				impacts relatively the same and therefore the effects in
				these overlapping areas and the conservation necessary to
				offset those effects have been addressed in Chapter 12.
				The discussion below only addresses those affected areas
				not previously included in the analysis in Chapter 12.

Chapter/	Page	Line	Table/	Correction						
Appendix			Figure							
Appendix 31 B,	31B-	14-		The Victoria Island Inter	The Victoria Island Interconnection Pump Station is a					
Mitigation	25	17		surface facility that once	e completed	would resu	lt in the			
Measure WQ-				permanent loss of 1.6 ac	res of cultiv	vated lands.				
7e: CCWD				approximately 11.9 acre	s of cultivat	ed lands an	d 0.04 acre			
Settlement				of tidal perennial aquation	c habitat (ca	anal). These	impacts			
Agreement				would result from the co	onstruction	of the Victor	ria Island			
				Interconnection , the pur	nping plant	, and the tra	nsmission			
				line .						
Appendix 31 B,	31B-	18-		The affected areas repre	esent habita	t for several	special-			
Mitigation	25	25		status species, which inc	clude wester	rn pond turt	le, giant			
Measure WQ-				garter snake, and wester	rn burrowir	ig owl, and f	oraging			
7e: CCWD				habitat for Swainson's h	awk, tricole	red blackbi	rd white-			
Settlement				tailed kite, and greater s	andhill crar	ne (Table 31	B-2).			
Agreement				Construction activity, no	oise and visu	ial disturbai	nce could			
				disrupt normal behavior	rs of these s	pecies, inclu	ding			
				nesting. The new perma	<mark>nent</mark> transn	nission line o	could also			
				increase the risk of bird strikes in this area. AMM20 would						
				be available to minimize this risk. As discussed above, a						
				large portion of the affec	cted area fac	<mark>cilities</mark> overl	ap s with			
				the footprint for the pro	posed wate	r conveyanc	e facilities			
				under Alternatives 4, 4A	, 2D, and 5 <i>A</i>	A and would	not be a			
				significant increase from	n the projec	t impact.				
Appendix 31 B,	31B-		Table	Natural Community	Permanen	Temporar	Total			
Mitigation	25 to		31B-1		t Impacts	y Impacts	impacts			
Measure WQ-	31B-			Tidal perennial aquatic	0.04-0		0.04 0			
7e: CCWD	26				11.87 1.6	3.21 2.5	13.08 4.1			
Settlement				See Attachment 1 for the	corrected	version of T	^{1.1} able 21B-1			
Agreement				See Allaciment 1 101 the	corrected	version of 1	able 51D-1.			

Appendix 31 B,	31B-	Table	Species	Permanent	Tempor	Total impacts
Mitigation	26 to	31B-2		Impacts	ary	
Measure WQ-	31B-				Impacts	
7e: CCWD	27		California	0.04- 0	0.04	0.04
Settlement			least tern			
Agreement			Greater sandhill crane			
			Foraging	11.23 1.6	3.09 2.4	14.32 4.0
			Total	11.23 1.6	3.09 2.4	14.32 4.0
			Swainson's			
			hawk			
			Foraging	11.51 1.6	3.09 2.4	14.60 4.0
			Total	11.51 1.6	3.09 2.4	14.60 4.0
			Tricolored			
			blackbird			
			Breeding	1.09 0	0	1.09 0
			habitat-ag			
			foraging	1.00.0		1.00.0
			Total	1.09 0	0	1.09 0
			white-tailed			
			Forgaing	<u>115116</u>	3.09.7.4	14.60.40
			habitat			
			Total	11.51 1.6	3.09 2.4	14.60 4 .0
			Total Giant garter	11.51 1.6	3.09 2.4	14.60-4 .0
			Total Giant garter snake	11.51 1.6	3.09 2.4	14.60-4 .0
			Total Giant garter snake Upland	11.51 1.6 1.05 0	3.09 2.4	14.60-4 .0 1.05 0
			Total Giant garter snake Upland Total	11.51 1.6 1.05 0 1.05 0	3.09 2.4 0 0	14.60-4.0 1.05 0 1.05 0
			TotalGiant gartersnakeUplandTotalAquatic	11.51 1.6 1.05 0 1.05 0 51 0	3.09 2.4 0 0 51 0	14.60-4.0 1.05 0 1.05 0 51 0
			TotalGiant gartersnakeUplandTotalAquaticbreeding,	11.51 1.6 1.05 0 1.05 0 51 0	3.09 2.4 0 0 51 0	14.60-4.0 1.05 0 1.05 0 51 0
			TotalGiant gartersnakeUplandTotalAquaticbreeding,foraging, andmovement	11.51 1.6 1.05 0 1.05 0 51 0	3.09 2.4 0 0 51 0	14.60-4.0 1.05 0 1.05 0 51 0
			TotalGiant gartersnakeUplandTotalAquaticbreeding,foraging, andmovement(feet)	11.51 1.6 1.05 0 1.05 0 51 0	3.09 2.4 0 0 51 0	14.60-4.0 1.05 0 1.05 0 51 0
			TotalGiant garter snakeUplandTotalAquatic breeding, foraging, and movement (feet)Western bond	11.51 1.6 1.05 0 1.05 0 51 0	3.09 2.4 0 0 51 0	14.60-4.0 1.05 0 1.05 0 51 0
			TotalGiant garter snakeUplandTotalAquatic breeding, foraging, and movement (feet)Western pond turtle	11.51 1.6 1.05 0 1.05 0 51 0	3.09 2.4 0 0 510	14.60-4.0 1.05 0 1.05 0 51 0
			TotalGiant garter snakeUplandTotalAquatic breeding, foraging, and movement (feet)Western pond turtleAquatic habitat	11.51 1.6 1.05 0 1.05 0 51 0 0.04 0	3.09 2.4 0 0 51 0	14.60-4.0 1.05 0 1.05 0 51 0 0 0.04 0
			TotalGiant garter snakeUplandTotalAquatic breeding, foraging, and movement (feet)Western pond turtleAquatic habitat Upland nesting	11.51 1.6 1.05 0 1.05 0 51 0 0.04 0 11.87 1.6	3.09 2.4 0 0 51 0 51 0 0 3.21 2.5	14.60-4.0 1.05 0 1.05 0 51 0 0 0.04 0 15.08 4.1
			TotalGiant garter snakeUplandTotalAquatic breeding, foraging, and movement (feet)Western pond turtleAquatic habitatUpland nesting and	11.51 1.6 1.05 0 1.05 0 51 0 0.04 0 11.87 1.6	3.09 2.4 0 0 51 0 0 3.21 2.5	14.60-4.0 1.05 0 1.05 0 51 0 0 0.04 0 15.08 4.1
			TotalGiant garter snakeUplandTotalAquatic breeding, foraging, and movement (feet)Western pond turtleAquatic habitat Upland nesting and overwintering habitat	11.51 1.6 1.05 0 1.05 0 51 0 0.04 0 11.87 1.6	3.09 2.4 0 0 51 0 51 0 0 3.21 2.5	14.60-4.0 1.05 0 1.05 0 51 0 0 0.04 0 15.08 4.1
			TotalGiant garter snakeUplandTotalAquatic breeding, foraging, and movement (feet)Western pond turtleAquatic habitat Upland nesting and overwintering habitatTotal	11.51 1.6 1.05 0 1.05 0 51 0 0.04 0 11.87 1.6	3.09 2.4 0 0 510 0 3.21 2.5	14.60-4.0 1.05 0 1.05 0 51 0 0 0.04 0 15.08 4.1
			TotalGiant garter snakeUplandTotalAquatic breeding, foraging, and movement (feet)Western pond turtleAquatic habitatUpland nesting and overwintering habitatTotal	11.51 1.6 1.05 0 1.05 0 51 0 0 0 11.87 1.6 11.91 1.6	3.09 2.4 0 0 510 0 3.21 2.5 3.21 2.5	14.60 4.0 1.05 0 1.05 0 51 0 0 0.04 0 15.08 4.1
			TotalGiant garter snakeUplandTotalAquatic breeding, foraging, and movement (feet)Western pond turtleAquatic habitat Upland nesting and overwintering habitatTotalAquatic habitat	11.51 1.6 1.05 0 1.05 0 51 0 0.04 0 11.87 1.6 11.91 1.6 51 0	3.09 2.4 0 0 510 0 3.212.5 3.21 2.5 510	14.60-4.0 1.05 0 1.05 0 51 0 0 0.04 0 15.08 4.1 15.12 4.1 51 0
			TotalGiant garter snakeUplandTotalAquatic breeding, foraging, and movement (feet)Western pond turtleAquatic habitatUpland nesting and overwintering habitatTotalAquatic habitatUpland nesting and overwintering habitatAquatic habitatDescent Total	11.51 1.6 1.05 0 1.05 0 51 0 0.04 0 11.87 1.6 11.91 1.6 51 0	3.09 2.4 0 0 510 3.21 2.5 3.21 2.5 510	14.60 4.0 1.05 0 1.05 0 51 0 0 0.04 0 15.08 4.1 15.12 4.1 51 0
			TotalGiant garter snakeUplandTotalAquatic breeding, foraging, and movement (feet)Western pond turtleAquatic habitatUpland nesting and overwintering habitatTotalAquatic habitatUpland nesting and overwintering habitatAquatic habitatImage: Descent content of the second s	11.51 1.6 1.05 0 1.05 0 51 0 0 0.04 0 11.87 1.6 11.91 1.6 51 0	3.09 2.4 0 0 510 510 0 3.21 2.5 3.21 2.5 510	14.60-4.0 1.05 0 1.05 0 51 0 0 0 0 15.08 4.1 51 0
			TotalGiant garter snakeUplandTotalAquatic breeding, foraging, and movement (feet)Western pond turtleAquatic habitatUpland nesting and overwintering habitatTotalAquatic habitatUpland nesting and overwintering habitatAquatic habitatNHD	11.51 1.6 1.05 0 1.05 0 51 0 0.04 0 11.87 1.6 11.91 1.6 51 0	3.09 2.4 0 0 510 0 3.212.5 3.21 2.5 510	14.60-4.0 1.05 0 1.05 0 51 0 0.04 0 15.08 4.1 51 0

Chapter/	Page	Line	Table/	Correction
Appendix			Figure	
Appendix 31 B,	31B-	2-4		The construction of the Clifton Court Forebay
Mitigation	28			Interconnection would result in temporary and
Measure WQ-				permanent impacts on natural communities, which
7e: CCWD				include grassland, managed wetland, nontidal perennial
Settlement				aquatic, tidal perennial aquatic, valley foothill riparian,
Agreement				and cultivated lands (Table 31B-4). Approximately 4 acres
				of the permanent facilities would be sited in area that
				would be temporarily or permanently impacted by
				conveyance facility construction, the effects of which are
				addressed in Chapter 12. Due to the length of time some
				temporary disturbed areas would be unavailable as
				habitat for wildlife, Chapter 12 treated permanent and
				temporary impacts relatively the same and therefore the
				effects in these overlapping areas and the conservation
				necessary to offset those effects have been addressed in
				Chapter 12. The discussion below only addresses those
				affected areas not previously included in the analysis in
				Chapter 12.
Appendix 31 B,	31B-	10-		The permanent impacts to natural communities (Table
Mitigation	28	11		31B-3) would result from the construction of the Clifton
Measure WQ-				Court Interconnection, the pumping plant, and the
/e: CCWD				transmission line.
Settlement				
Agreement	21D	10		The effected energy approach hebitat for according
Appendix 51 b,	31D- 20	12-		status species which include valley elderberry lengthern
Margarion Margura WO-	20	17		heatle western nond turtle gight garter snake California
				red-legged frog riparian bruch rabbit western hurrowing
Settlement				owl Swainson's hawk tricolored blackhird and greater
Agreement				sandhill crane (Table 31B-4). The impacts on tidal
ngreement				perennial aquatic habitat are actually on a canal: and
				though included as part of the California least tern model
				the impacts to this habitat would not likely affect the
				species because they primarily forage in nearshore marine
				and estuarine environments and are not known to nest
				near Clifton Court Forebay. Construction activity, noise
				and visual disturbance could disrupt normal behaviors of
				these wildlife species, including nesting. The new
				transmission line could increase the risk of bird strikes in
				this area. AMM20 would be available to minimize this risk.
				As discussed above, a portion of the facilities overlap with
				the footprint for the proposed water conveyance facilities
				under Alternatives 4, 4A, 2D, and 5A.

Chapter/	Page	Line	Table/	Correction				
Appendix			Figure					
Appendix 31 B, Mitigation Measure WQ- 7e: CCWD Settlement Agreement	31B- 28		Table 31B-3	Natural Community Valley/foothill riparian Managed wetland Grassland Cultivated	Permanent Impacts 0.25 0 0.58 0 3.20 0.15 28.34 28.22	Temporary Impacts 0 0 0 4 0.26 40.08	Total impacts 0.25 0 0.58 0 3.20 0.15 68.61 68.29	
				lands				
				See Attachment	1 for the corr	ected version	of Table 31B	-3.

Chapter/	Page	Line	Table/	Correction			
Appendix			Figure				
Annendix 31 B	31B-		Table	Species	Permanent	Tempor	Total impacts
Mitigation	20 to		21D I	1	Impacts	ary	*
Miligation	2910		51D-4			Impacts	
Measure WQ-	31B-			Riparian brush rabbit			
7e: CCWD	30			Riparian habitat	0.25 0	0	0.25 0
Settlement				Grassland habitat	3.06 0	0	3.06 0
Agreement				Total	3.310	0	3.31 0
Agreement				California least tern	0.28 0.24	0	0.28 0.24
				Least Bell's vireo	0.25 0	0	0.25 0
				Swallisofi S llawk	27.00.24.90	20 47	66 46 62 10
					27.99 24.00	38.29	00.40 05.10
				Nesting habitat	0.25	0	0.25 0
				Total	28.23 24.8	38.47 38.29	66.70 63.10
				Tricolored blackbird			
				Breeding habitat-foraging	3.20 0.15	0	3.20 0.15
				Breeding habitat-nesting	0.25	0	0.25 0
				Total	11.34 8.04	12.58	23.92 20.62
				Western burrowing owl			
				High-value habitat	3.20 0.15	0	3.20 0.15
				Low-value habitat	24.79 24.67	38.47 38.29	63.26 62.95
				Total	27.99 24.82	38.47 38.29	66.46 63.10
				Western yellow-billed cuckoo			
				Migratory habitat	0.25 0	0	0.25 0
				Total	0.25	0	0.25 0
				White-tailed kite			
				Breeding habitat	0.25	0	0.25 0
				Foraging habitat	27.99 24.81	38.47 38.29	66.46 63.10
				Total	28.23 24.81	38.47 38.29	66.70 63.10
				Yellow-breasted chat	0.25 0	0	0.25 0
				Giant garter snake			
				Aquatic	0.13 0	0	0.13 0
				Upland	2.12 0	0	2.12 0
				Total	2.25 0	0	2.25 0
				Western pond turtle			
				Upland nesting and	32.22 28.22	4 0.26	73.15 68.30
				overwintering habitat		40.08	
				Total	32.76 28.76	40.39 40.21	73.15 68.97
				Valley elderberry longhorn beetle			
				Riparian vegetation	0.25 0	0	0.25 0
				Nonriparian channels and grasslands	1.51 0.15	0	1.51 0.15
				Total	1.76 0.15	0	1.76 0.15
				See Attachment 1 for	the correcte	ed versio	n of Table 31B-4.

Chapter/	Page	Line	Table/	Correction
Appendix			Figure	
Appendix 31 B,	31B-	20-		Approximately 5.22.5 acres of land falling under this
Mitigation	32	23		designation would be temporarily affected and 1011.9
Measure WQ-				acres would be permanently converted from agricultural
7e: CCWD				to nonagricultural uses composed of 2.0 acres for the
Settlement				CCWD Interconnection, 3.7 acres for the pumping plant
Agreement				and 6.3 6.2 acres for temporary new electrical
				transmission lines.
Appendix 31 B,	31B-	8-11		Approximately 74 acres of land would be disturbed by the
Mitigation	33			project. Of this total, 6940.3 acres would be temporarily
Measure WQ-				disturbed as a result of constructing the pipeline and
7e: CCWD				533.3 acres would be permanently converted to other
Settlement				uses which is primarily attributable to the footprint of the
Agreement				interconnection pumping plant, which would primarily
				convert agricultural lands. No agricultural lands would be
				permanently converted by the interconnection.
				Note: Due to correction of GIS calculations, there is an
				increased loss of agricultural acreage. Viewed in the context
				of the entire California WaterFix project, the increase in
				agricultural land conversion is not substantial and does not
				change the impact conclusion.
Appendix 31 B,	31B-	30-		Constructing the project would impact approximately 15
Mitigation	33	32		14 acres of important farmland comprised of 98 acre of
Measure WQ-				prime farmland and 6 acres of farmland of statewide
7e: CCWD				importance.
Settlement				
Agreement				
Appendix 31 B,	31B-	38-		Approximately 10 12 acres of important farmland
Mitigation	33, 34	40,		consisting of 8 acres of prime farmland and 2 4 acres of
Measure WQ-		1-2		farmland of statewide importance. This permanent loss of
7e: CCWD				farmland is attributable to the footprint of the pumping
Settlement				plant, pipeline interconnect valve vault, and transmission
Agreement				line. A large portion of this permanent impact
				(approximately 10 acres) also overlaps with the
				temporary impact footprint for the proposed water
				conveyance facilities under Alternatives 4, 4A, 2D, and 5A
				and would not be a significant increase from the project
				impact.

Chapter/	Page	Line	Table/	Correction
Appendix			Figure	
Appendix 31 B, Mitigation Measure WQ- 7e: CCWD Settlement Agreement	31B- 34	8-11		Constructing the project would impact approximately 70 69 acres of important farmland comprised of 14 acres of prime farmland and 56 55 acres of farmland of statewide importance. Approximately 1 29 acres of important farmland consisting of 6 acres of prime farmland and 23 acres of farmland of statewide importance would be permanently lost as a result of construction of the transmission line. <i>Note: Due to correction of GIS calculations, there is an</i> <i>increased loss of agricultural acreage. Viewed in the context</i> <i>of the entire California WaterFix project, the increase in</i> <i>agricultural land conversion is not substantial and does not</i> <i>change the impact conclusion.</i>
Appendix 31 B, Mitigation Measure WQ- 7e: CCWD Settlement Agreement	31B- 37	7-9		permanently eliminate agricultural production from approximately 101.6 acres and result in the temporary disruption of agricultural production on an additional 15 2.5 acres.
Appendix 31 B, Mitigation Measure WQ- 7e: CCWD Settlement Agreement	31B- 37	11- 15		The loss of agricultural production from the 15 2.5 acres during the construction period is not expected to result in measurable change in regional employment or income levels because the amount of land affected is small in comparison with the regional agricultural land base. Once completed, approximately 101.6 acres of agricultural land would be permanently removed from production. As during the construction period, the permanent loss of the 101.6 acres is not
Appendix 31 B, Mitigation Measure WQ- 7e: CCWD Settlement Agreement	31B- 37	33- 34		temporarily disrupt agricultural production on approximately 68 40 acres and remove 28 acres from production permanently. Note: Due to correction of GIS calculations, there is an increased loss of agricultural acreage. Viewed in the context of the entire California WaterFix project, the increase in agricultural land conversion is not substantial and does not change the impact conclusion.
Appendix 31 B, Mitigation Measure WQ- 7e: CCWD Settlement Agreement	31B- 37	35- 36		The loss of agricultural production from the 68 40 acres during the construction period is not expected to result in measurable change in regional employment

Chapter/	Page	Line	Table/	Correction
Appendix			Figure	
Appendix 31 B,	31B-	37-		Once construction in completed, all agricultural land
Mitigation	37	38		temporarily affected would be placed back in production.
Measure WQ-				Once completed, approximately 28 acres of agricultural
7e: CCWD				land would be permanently removed from production. As
Settlement				during the construction period, the permanent loss of the
Agreement				28 acres is not expected to result in a measurable change
				in regional employment or income.
				Note: Due to correction of GIS calculations, there is an
				increased loss of agricultural acreage. Viewed in the context
				of the entire California WaterFix project, the increase in
				agricultural land conversion is not substantial and does not
				change the impact conclusion.
Volume II, Part	1-309	14-		The proposed project is similar in that it proposes
1, Master		16		conveying water from a diversion point located in t he
Responses				north Delta to the existing CVP and SWP pumps located in
			m 11 0	the south Delta.
Volume II,			Table 2-	Note: Comment responses that reference the EL1 time- frame should reference user 2025 instead of 2020 or about
Comment			1, Table	2020 The year 2020 is in reference to the BA and not the
Responses			2-2	Final FIR/FIS
	1.00			
Volume II,	1-82	Foot		108 State Water Resource Control Board. "Addressing
Final EIR/EIS		note		Potential water Quality Problems Associated With
		108		2013.

Chapter/	Page	Line	Table/	Correction
Appendix	_		Figure	
Volume II	3-1, 3-	8-9,		Attewell P.B. and Woodman J. P. 1982. Predicting the
References,	2, 3-4,	13-		Dynamics of Ground Settlement and its Derivatives caused
Part 3.	3-5, 3-	14,		by Tunneling in Soil. Ground Engineering, November
	6, 3-7	17-		1982, pp13-22.
	-	19,2		
		5-		2010. Draft Phase I Geotechnical Investigation-
		26.3		Geotechnical Data Report-Isolated Conveyance Facility
		1-32.		West. Delta Habitat Conservation and Conveyance
		4-5.		riogram (Dricer), july.
		7-8.		2011 Draft Phase II Geotechnical Investigation -
		12-		Geotechnical Data Report – Pipeline / Tunnel Option.
		13.		Delta Habitat Conservation and Conveyance Program
		37-		(DHCCP). August.
		39		
		8-9		2013. Addendum to Mitigated Negative Declaration.
		0 5		March.
				2015. Delta Habitat Conservation & Conveyance Program
				(DHCCP). Conceptual Engineering Report. April.
				Charles I.A. and H.D. Skinner 2004 Settlement and tilt of
				low-rise buildings Contechnical Engineering 157 Issue
				GE2: 65-75 Anril
				ITA/AITES. 2006. Report on Settlements Induced by
				Tunneling in Soft Ground. Tunneling and Underground
				Space Technology 22(2007) 119-149.
				New B. M. and Bowers K.H. 1994. Ground Movement
				Validation at the Heathrow Express Trial Tunnel, Proc.
				IMM Tunneling '94, Chapman and Hall, pp 301-327.
				State Water Decourses Control Decord 2012 Addressing
				State Water Resources control Board, 2015, Audressing
				Desalination Plants Entrainment Impacts and Mitigation
				Desamation Flants Entrainment Impacts and Mitigation.
				U.S. Department of the Interior. Bureau of Reclamation.
				U.S. Fish and Wildlife, California Department of Fish and
				Game. 2011. Suisun Marsh Habitat Management,
				Preservation, and Restoration Plan. Final Environmental
				Impact Report.
				U.S Geological Survey. 2000. Delta Subsidence in
				California: The Sinking Heart of the State. FS-005-00.
				Арги.
				 State Water Resources Control Board. 2013. Addressing Potential Water Quality Problems Associated with Desalination Plants Entrainment Impacts and Mitigation. U.S. Department of the Interior, Bureau of Reclamation, U.S. Fish and Wildlife, California Department of Fish and Game. 2011. Suisun Marsh Habitat Management, Preservation, and Restoration Plan. Final Environmental Impact Report. U.S Geological Survey. 2000. Delta Subsidence in California: The Sinking Heart of the State. FS-005-00. April.

Table 2-2. Corrections to the Mitigation Monitoring and Reporting Program

The Mitigation Monitoring and Reporting Program (MMRP) was posted on December 22, 2016. The table below highlights changes made to the MMRP since it was posted. The MMRP is not final until adopted.

MMRP	Page	Line	Correction
MMRP, AES-1g: Implement Best Management Practices to Implement Project Landscaping Plan	2-61	14	If indigenous plantings are not available, BDCP proponents DWR will coordinate with CDFW to use a mutually acceptable plant mix palette.
MMRP, AG-1a Promote agricultural productivity of Important Farmland	2-40	22	AG-1a: Promote agricultural productivity of Important Farmland to the extent feasible
MMRP, AG-1a: Promote agricultural productivity of Important Farmland to the extent feasible	2-40	24- 26	Not all measures listed below may be feasible or applicable to each conservation measure environmental commitment or to individual parts of each conservation measure environmental commitment.
MMRP, AG- 1c:Consideration of an Optional Agricultural Land Stewardship Approach or Conventional Mitigation Approach	2-48	20- 22	CEQA and NEPA agricultural resource mitigation in addition to meeting DWR objectives under the federal and state Endangered Species Acts and the California's Natural Community Conservation Planning Act and (ii) reliance on the California Farmland Conservancy Program
MMRP	Page	Line	Correction
------------------------	------	------	---
MMRP, AG-1c:	2-48	37	Thus, acquisition of such agricultural land conservation interests
Consideration of			cannot be located in areas targeted for habitat restoration if
an Optional			doing so would thwart implementation of the long-term habitat
Agricultural			restoration objectives of the mitigation for California WaterFix.
Land			
Stewardship			
Approach or			
Conventional			
Mitigation			
Approach			
MMRP, AQ-9:	2-	18	if not, DWR will offer temporary relocation of the affected
Implement	118		residen <mark>tsce;</mark>
Measures to			
Reduce Re-			
Entrained Road			
Dust and			
Receptor			
Exposure to			
PM2.5 and PM10			
MMRP, AQ-21:	2-	4-5	All selected strategies must be quantifiable, verifiable,
Develop and	120		enforceable, and satisfy the basic criterion of additionality ly
Implement a			
GHG Mitigation			
Program to			
Reduce			
Construction			
Related to GHG			
Emissions to Net			
Zero (0)			
MMRP, AQ-24:	2-	13-	Rather, these measures serve as an overlying mitigation
Develop an Air	124	16	framework to be used for specific conservation measure
Quality			environmental commitments. The applicability of measures listed
Mitigation Plan			below may also vary based on the lead agency, location, timing,
(AQMP) to			available technology, and nature of each conservation measure
Ensure Air			environmental commitment.
District			
Regulations and			
Recommended			
Mitigation are			
Incorporated			
into Future			
Environmental			
Commitments			
and Associated			
Project Activities			

MMRP	Page	Line	Correction
MMRP, AQ-24:	2-	6-7	The applicability of measures listed above may vary based on the
Develop an Air	125		lead agency, location, timing, available technology, and nature of
Quality			each conservation measure environmental commitment
Mitigation Plan			
(AQMP) to			
Ensure Air			
District			
Regulations and			
Recommended			
Mitigation are			
Incorporated			
into Future			
Environmental			
Commitments			
and Associated			
Project Activities			
MMRP, AQ-25:	2-	30-	AQ-25: Prepare a Project-Level Health Risk Assessment to
Prepare a	125	33	Reduce Potential Health Risks from Exposure to Localized DPM
Project-Level			and PM Concentrations from implementation of Environmental
Health Risk			Commitments 3, 4, 6-11
Assessment to			
Reduce Potential			
Health Risks			
from Exposure			
to Localized			
DPM and PM			
Concentrations			
from			
implementation			
of			
Environmental			
Commitments 3,			
4, 6-11			

MMRP	Page	Line	Correction
MMRP, AQ-27:	2-	25-	AQ-27 Prepare a land use sequestration analysis to quantify and
Prepare a Land	126	29	mitigate (as needed) GHG flux associated with conservation
use			measures environmental commitments and associated project
sequestration			activities
analysis to			
quantify and			
mitigate (as			
needed) GHG			
flux associated			
with			
Environmental			
Commitments			
and Associated			
Project Activities			
MMRP, AQUA-	2-22	4-6	
22d: DWR will			Reporting Requirements : Fulfiliment of compliance monitoring
consult with			and reporting requirements is solely the responsibility of
DFW as part of			Reclamation, DWR , and their its contractors. Reclamation and
the 2081			DWR will track and ensure compliance monitoring
incidental take			
permit process			
to include spring			
outflow criteria			
as necessary to			
fully mitigate			
any impacts of			
operation-			
related take of			
longfin smelt			
attributable to			
the project, with			
adjustments			
through			
Adaptive			
Managements as			
appropriate.			
Implementation			
of any necessary			
spring outflow			
criteria will			
occur through			
coordinated			
operations of the			
CVP and SWP			

MMRP	Page	Line	Correction			
MMRP, AQUA-	2-20	10	Commitment/Mitigation	Responsible		Associat-
22d: DWR will			Measure	Party/Parties	Timing	ed Impact
consult with			Chapter 11, Fish and Aquatic	Resources		
DFW as part of			AOUA-22d: DWR will	DWR and	After	Impact
the 2018			consult with DFW as part of	Reclamation	constr-	AOUA-22
incidental take			the 2081 incidental take		uction	
permit process			permit process to include			
to include spring			spring outflow criteria as			
outflow criteria			necessary to fully mitigate			
as necessary to			any impacts of operation-			
fully mitigate			related take of longfin smelt			
any impacts of			attributable to the project,			
operation-			with adjustments through			
related take of			Adaptive Management as			
longfin smelt			appropriate.			
attributable to			Implementation of any			
the project, with			necessary spring outflow			
adjustments			criteria will occur through			
through			the CVD and SWD			
Adaptive						
Managements as						
appropriate.						
Implementation						
of any necessary						
spring outflow						
criteria will						
occur through						
coordinated						
operations of the						
CVP and SWP						

MMRP	Page	Line	Correction
MMRP, AQUA-	2-20	16	
22d: DWR will			Responsible Parties: DWR and the Reclamation will be
consult with			responsible for implementing this mitigation measure.
DFW as part of			
the 2018			
incidental take			
permit process			
to include spring			
outflow criteria			
as necessary to			
fully mitigate			
any impacts of			
operation-			
related take of			
longfin smelt			
attributable to			
the project, with			
adjustments			
through			
Adaptive			
Managements as			
appropriate.			
Implementation			
of any necessary			
spring outflow			
criteria will			
occur through			
coordinated			
operations of the			
CVP and SWP			
MMRP, BIO-166:	2-35	24-	Timing: Surveys prior to construction; eviction or monitoring
Conduct		26	during construction. Bridge disturbance avoided between April
Preconstruction			15 and September 15 March 1 and October 31; tree removal
Surveys for			avoided between April 15 and September 15. If necessary, iInstall
Roosting Bats			exclusion devicse between March 1 and April 14 or September 15
and Implement			through October 310, with eviction to occur between September
Protective			
Measures.			
MMRP, CUL-2:	2-72	13	The treatment plan, prepared consistent with the Final
Conduct			Programmatic Agreement, will identify treatment methods
Inventory,			
Evaluation, and			
Treatment of			
Archaeological			
Resources			

MMRP	Page	Line	Correction			
MMRP, GW-1:	2-4	27-	Mitigation Measure GW	/-1: Maintain	Water Suppli	es in Areas
Maintain Water		29	Affected by Construction	on Dewatering	g and Conveya	ince
Supplies in			Operations			
Areas Affected						
by Construction			Commitment/Mitigation	Responsible	Timing	Associated
Dewatering and			Measure	Party/Parties		Impact
Conveyance			Chapter 7, Groundwater			
Operations			GW-1: Maintain Water Supplies in Areas Affected by Construction Dewatering and Conveyance Operations	DWR and Construction Contractors	Prior to and during construction, continuing up to 5 years into operations	Impact GW-1, AG- 2, GW-2, AG-2
MMRP, GW-1:	2-4 -	31-1	Action: Prior to construction, DWR will determine the location			
Maintain Water	2-5		of wells within the anticipated area of influence of construction			
Supplies in			sites at which dewaterin	g would occur	and the locatio	on of wells
Areas Affected			within the anticipated ar	ea of influence	e of conveyance	e operations
by Construction			on the Sacramento River above and below the north Delta			
Dewatering and			intakes, within an approx	ximately 4-mil	e wide corrido	r (about 2
Conveyance			miles on either side of th	e river). Based	on available if	iformation,
Operations			thorough site investigations, and desk studies, the location of			
			these wells will be determined	s and the deptr	i to groundwat	er within
			monitoring wells should	ha installed su	construction u	ewatering,
			groundwater dewatering	be installed su	inclently close	nto River
			or if possible water level	ls in existing w	alls will be mo	nitored in
			order to be able to detect	t changes in w	ater levels attri	ibutable to
			dewatering activities and	t conveyance o	perations Mo	nitoring
			wells would continue to	be used as par	t of a conveyan	ice
			operation monitoring pr	ogram. Monito	ring would occ	cur and be
			reported on a monthly ba	asis with an an	inual summarv	report
			prepared by the project	proponents for	up to 5 years	after
			commencement of conve	eyance operation	ons.	

MMRP	Page	Line	Correction
MMRP, GW-1:	2-5	6-21	Offset domestic water supply losses attributable to
Maintain Water			construction dewatering activities and conveyance
Supplies in			operations. DWR will ensure domestic water supplies
Areas Affected			provided by wells are maintained during construction and
by Construction			conveyance operations. Potential actions to offset these
Dewatering and			losses include installing cutoff walls in the form of sheet
Conveyance			plies of slurry wails to depths below groundwater
Operations			or providing new wells used for domestic nurposes to
			maintain water supplies at preconstruction levels, or
			securing potable water supplies from offsite sources.
			Offsite sources could include potable water transported
			from a permitted source or providing a temporary
			connection to nearby wells not adversely affected by
			dewatering or operations.
			 Offset agricultural water supply losses attributable to
			construction dewatering activities and conveyance
			operations. DWR will ensure agricultural water supplies
			are maintained during construction and operations or
			If foosible, DWP will install shoot pilos to dopths below
			groundwater elevations or deepening modifying or
			providing new deepen or modify the wells
MMRP, GW-1:	2-5	23-	 DWR will be responsible for determining the area of
Maintain Water		30	influence of construction dewatering operations and
Supplies in			conveyance operations and the location of potentially
Areas Affected			affected existing wells, in addition to the installation
by Construction			of potential new monitoring wells and the monitoring
Dewatering and			• Prior to common company of construction activities
Conveyance			DWR will determine the locations of existing wells
Operations			which will require monitoring. In addition, shallow
			monitoring wells may be installed prior to
			construction dewatering operations and conveyance
			operations. Monitoring of water levels in these wells
			will occur during construction and up to 5 years
			during conveyance operations. Implementation of
			measures necessary to offset domestic and
			agricultural water supply losses will occur during
			construction and conveyance operations as necessary.

MMRP	Page	Line	Correction
MMRP, GW-1:	2-5	34-	dewatering and on a weekly or daily basis, as needed, during the
Maintain Water		38	entire construction dewatering period and on a monthly basis
Supplies in			during conveyance operations. Upon completion of construction,
Areas Affected			the water levels in the monitoring wells will be measured and
by Construction			monitoring will continue for up to 6 months following
Dewatering and			groundwater levels reach preconstruction levels. During
Conveyance			conveyance operations, monitoring will continue for up to 5
Operations			vears.
MMRP, GW-1:	2-6	1-2	post-construction and conveyance operations water levels.
Maintain Water			
Supplies in			
Areas Affected			
by Construction			
Dewatering and			
Conveyance			
Operations			
MMRP, GW-1:	2-6	3-4	If water level data indicate that dewatering operations or
Maintain Water			conveyance operations are responsible for reductions in well
Supplies in			productivity
Areas Affected			
by Construction			
Dewatering and			
Conveyance			
Operations			
MMRP, GW-1:	2-6	11-	Responsible Parties: DWR and its construction contractors will
Maintain Water		12	be responsible for determining the area of influence of
Supplies in			dewatering operations and conveyance operations and
Areas Affected			
by Construction			
Dewatering and			
Conveyance			
Operations			
MMRP, GW-1:	2-6	15-	Location: At construction sites where dewatering is required to
Maintain Water		17	construct the work within and approximately 4-mile wide
Supplies in			corridor (about 2 miles on either side of the river) above and
Areas Affected			below the north Delta Intakes.
by Construction			
Dewatering and			
Conveyance			
Operations			

MMRP	Page	Line	Correction		
MMRP, GW-1: Maintain Water Supplies in Areas Affected by Construction Dewatering and Conveyance Operations	2-6	21- 25	to determine if groundwater levels reach preconstruction levels and if conveyance operations are affecting groundwater levels along the Sacramento River. Implementation of measures necessary to offset domestic and agricultural water supply losses will occur during construction and operation as necessary. In the event water levels and supply are impacted after construction, Mitigation Measure GW-7 1 will minimize these impacts.		
MMRP, GW-1: Maintain Water Supplies in Areas Affected by Construction Dewatering and Conveyance Operations	2-6	28- 32	construction and conveyance operations. Monitoring will be conducted to track the effects of construction and conveyance operations on groundwater levels and nearby wells and ensure that actions are taken, if required, to remediate impacts associated with dewatering activities and conveyance operations. Monitoring of existing wells and installed monitoring wells will be performed daily or weekly during construction and monthly during conveyance operations for up to 5 years,		
MMRP, GW-1: Maintain Water Supplies in Areas Affected by Construction Dewatering and Conveyance Operations	2-6	39-2	dewatering or conveyance operations for that year. The monthly reports will contain tabular water level data as well as changes in water levels from the previous months. The annual report will summarize monthly data and show the most recent water level contour map as well as the pre-construction contour map. The finalannual report will include water-level contour maps for the area of the groundwater aquifer that is affected by dewatering showing initial, pre-construction water levels and final, post- construction water levels and during conveyance operations will show the initial pre-conveyance operation water levels and on- going operation water levels.		
MMRP, GW-5: Agricultural Lands seepage minimization	2-8	19- 20	All monitoring data will be reported on a monthly basis, and in an annual summary report prepared by DWR that will evaluate the potential impacts of the operation of ECs CMs for that year.		
MMRP, 5.1 Environmental Commitments Modified from BDCP Conservation Measures	5-1	15, Table 5-1	Environmental Commitment 4: Tidal NaturalUp to 295 1830Communities RestorationacresEnvironmental Commitment 7: Riparian NaturalUp to 251 271Community RestorationacresEnvironmental Commitment 8: Grassland NaturalUp to 1,070Community2,092 acresNote: See Section 2.0 above for description of acreage changes.		

MMRP	Page	Line	Correction			
MMRP, EC 3:	5-6	3				
Natural						Associated
Communities			Environmental	Responsible		Resource Area
Protection and			Commitment	Party/Parties	Timing	Impact
Restoration			Natural	DWR and	Prior to,	Impact BIO-3,
			Communities	Reclamation	during, and	BIO-5, BIO-8,
			Protection		after	BIO-9, BIO-11,
			and		construction	BIO-12, BIO-14,
			Restoration			BIO-15, BIO-17,
						BIO-18, BIO-20,
						BIO-21, BIO-23,
						BIO-24, BIO-25,
						BIO-28, BIO-29,
						BIO-31, BIO-35,
						BIO-184
MMRP, EC 3:	5-6	12	Reclamation an	d DWR will cor	nduct surveys	to collect the
Natural			information			
Communities						
Protection and						
Restoration						
MMRP, EC 3:	5-7	3	Responsible Pa	arties: DWR a	nd Reclamatio	n.
Natural						
Communities						
Protection and						
Restoration						
MMRP, EC 3:	5-7	14	Monitoring: Re	eclamation and	DWR, throug	h the Adaptive
Natural			Management Pr	ogram,		
Communities						
Protection and						
Restoration						
MMRP, EC 4:	5-7	21				Associated
Tidal Natural						Resource
Communities			Environmental	Responsible		Area
Restoration			Commitment	Party/Parties	Timing	Impact
			Tidal Natural	DWR and	Prior to, dur	ing, Impact
			Communities	Reclamation	and after	BIO-3,
			Restoration		construction	BIO-5,
						BIO-6,
						BIO-9,
						BIO-60,
						BIO-66,
						BIO-173,
						BIO-184

MMRP	Page	Line	Correction			
MMRP, EC 4:	5-7	33	Reclamation and	DWR will cond	luct surveys to	collect the
Tidal Natural			information			
Communities						
Restoration						
MMRP, EC 4:	5-8	13	Responsible Par	Responsible Parties: DWR and Reclamation		
Tidal Natural						
Communities						
Restoration						
MMRP, EC 4:	5-8	23	Monitoring: Red	clamation and l	OWR <mark>, throug</mark> h ⁻	the Adaptive
Tidal Natural			Management Pro	gram,		
Communities						
Restoration			-			
MMRP, EC 6:	5-8	30				Associated
Channel Margin			Environmental	Responsible		Resource Area
Enhancement			Commitment	Party/Parties	Timing	Impact
			Channel	DWR and	Prior to,	Impact AQUA-
			Margin	Reclamation	during, and	42, AQUA-60,
			Enhancement		after	AQUA-78,
					construction.	AQUA-96,
						AQUA-111,
						ΑQUA-200, ΔΟΠΔ-201
						BIO-9, BIO-184
MMRP. EC. 6:	5-9	3	Reclamation and	DWR will cond	luct surveys to	collect the
Channel Margin	0 1	5	information		luct sulveys to	
Enhancement			mormation			
MMRP. EC 6:	5-9	17	Responsible Par	ties: DWR and	d Reclamation	
Channel Margin						
Enhancement						
MMRP, EC 6:	5-9	22	Monitoring: Red	clamation and I	OWR. through	the Adaptive
Channel Margin			Management Pro	gram,		P
Enhancement				-		
MMRP, EC 7:	5-9	29				Associated
Riparian Natural			Environmental	Responsible		Resource
Community			Commitment	Party/Parties	Timing	Area Impact
Restoration			Riparian	DWR and	Before,	Impact BIO-9,
			Natural	Reclamation	during, and	BIO-11, BIO-
			Community		after	35, BIO-184
			Restoration		construction	
MMRP, EC 7:	5-10	1	Reclamation and	DWR will cond	luct surveys to	collect the
Riparian Natural			information		<u> </u>	
Community						
Restoration						

MMRP	Page	Line	Correction		
MMRP, EC 7: Riparian Natural Community Restoration	5-10	15	Responsible Parties: DWR and Reclamation. DWR will implement the required mitigation commensurate to the level of the actual effect to the listed species,		
MMRP, EC 7: Riparian Natural Community Restoration	5-10	27	Monitoring: Reclamation and DWR, through the Adaptive Management Program,		
MMRP, EC 8: Grassland Natural Community Restoration	5-11	3	Associated ResourceEnvironmentalResponsibleCommitmentParty/PartiesGrasslandDWR andPrior to,Impact		
			NaturalReclamationduring andBIO-29CommunityafterRestorationconstruction		
MMRP, EC 8: Grassland Natural Community Restoration	5-11	10	Reclamation and DWR will conduct surveys to collect the information		
MMRP, EC 8: Grassland Natural Community Restoration	5-11	24	Responsible Parties: DWR and Reclamation		
MMRP, EC 8: Grassland Natural Community Restoration	5-11	34	Monitoring: Reclamation and DWR, through the Adaptive Management Program,		
MMRP, EC 9: Vernal Pool and Alkali Seasonal Wetland Complex Restoration	5-12	6	Environmental CommitmentResponsible Party/PartiesAssociated ResourceVernal Pool and Alkali SeasonalDWR and ReclamationPrior to, during, andImpact BIO- 18, BIO-20, afterWetland Complex RestorationFrior to, RestorationBIO-21, BIO-23, BIO-28, BIO-184		

MMRP	Page	Line	Correction				
MMRP, EC 9:	5-13	13	Reclamation and DWR will conduct surveys to collect the				
Vernal Pool and			information				
Alkali Seasonal							
Wetland							
Complex							
Restoration							
MMRP, EC 9:	5-12	27	Responsible Par	ties: DWR and F	Reclamation		
Vernal Pool and							
Alkali Seasonal							
Wetland							
Complex							
Restoration							
MMRP, EC 9:	5-13	4	Monitoring: Reclamation and DWR, through the Adaptive				
Vernal Pool and			Management Program,				
Alkali Seasonal							
Wetland							
Complex							
Restoration							
MMRP, EC 10:	5-13	11				Associated	
Nontidal Marsh			Environmental	Responsible		Resource	
Restoration			Commitment	Party/Parties	Timing	Area Impact	
			Nontidal Marsh	DWR and	Prior to,	Impact BIO-	
			Restoration	Reclamation	during, and	12, BIO-14,	
					after	BIO-15, BIO-	
					construction	17, BIO-24,	
						BIO-25, BIO-	
						184	
MMRP, EC 10:	5-13	19	Reclamation and DWR will conduct surveys to collect the				
Nontidal Marsh			information				
Restoration							
MMRP, EC 10:	5-13	32	Responsible Par	ties: DWR and F	Reclamation		
Nontidal Marsh							
Restoration							
MMRP, EC 10:	5-14	13	Monitoring: Reclamation and DWR, through the Adaptive				
Nontidal Marsh			Management Prog	gram,	_		
Restoration							

MMRP P	Page	Line	Correction				
MMRP, EC 11: 5	5-14	20				Associated	
Natural			Environmental	Responsible		Resource Area	
Communities			Commitment	Party/Parties	Timing	Impact	
Enhancement			Natural	DWR and	Prior to,	Impact BIO-3,	
and			Communities	Reclamation	during, and	BIO-5, BIO-6,	
Management			Enhancement		after	BIO-8, BIO-11,	
			and		construction	BIO-14, BIO-	
			Management			17, BIU-20, BIO 22 BIO	
						25 BIO-28	
						23, DIO-28, BIO-29 BIO-	
						31 BIO-76	
						BIO-180, BIO-	
						181, BIO-184, ,	
						BIO-186	
MMRP, EC 11: 5	5-14	25	Responsible Parties: DWR and Reclamation				
Natural			- F				
Communities							
Enhancement							
and							
Management							
MMRP, EC 11: 5	5-14	24	Responsible Pa	rties: DWR and	d Reclamation		
Natural							
Communities							
Enhancement							
and							
Management							
MMRP, EC 11: 5	5-15	3-4	Reporting Requ	iirements: Ful	fillment of con	pliance monitoring	
Natural			and reporting re	quirements is s	olely the respo	onsibility of	
Communities			Reclamation, DW	/R , and its cont	ractors. Reclan	nation and DWR	
Enhancement			will track and en	sure complianc	e monitoring		
and							
Management							
MMRP, EC 12: 5	5-15	1-2	Reporting Requ	irements: Ful	fillment of con	pliance monitoring	
Methylmercury			and reporting re	quirements is s	olely the respo	onsibility of	
Management			Keclamation, DW	K, and its conti	ractors. Keclan ya monitoring	nation and DWR	

MMRP	Page	Line	Correction			
MMRP, EC 15: Localized Reduction of	5-16	14	Environmental Commitment	Responsible Party/Parties	Timing	Associated Resource Area Impact
Predatory Fishes (Predator Control)			Localized Reduction of Predatory Fishes (Predator Control)	DWR and Reclamation	Prior to, during, and after construction	Impact AQUA- 42, AQUA-60, AQUA-78, AQUA-96, AQUA-111, AQUA-200, AQUA-201
MMRP, EC 15: Localized Reduction of Predatory Fishes (Predator Control)	5-16	25	Responsible Pa	rties: DWR an	d Reclamation	•
MMRP, EC 15: Localized Reduction of Predatory Fishes (Predator Control)	5-16	29	Monitoring: Re Management Pro	clamation and a	DWR, through	the Adaptive
MMRP, EC 16: Nonphysical Fish Barriers	5-18	7	solely the respor Reclamation and	nsibility of Recl DWR will trac	amation, DWR k	and its contractors.

3.0 Comments and Information Received after Publication of the Proposed Final EIR/EIS

This section includes a discussion of comments and other information received after publication of the proposed Final EIR/EIS on December 22, 2016, including those comments received during the 30-day Federal Register notice period beginning on December 30, 2016 (Section 3.1). Further, this section lists the organizations that submitted comments, details the approach to considering comments received during the notice period, provides a summary of the comments received on the proposed Final EIR/EIS during the 30-day Federal Register. This section also includes a discussion of the letters received considerably after the close of the Federal Register notice period in June and July 2017 (Section 3.2) and a discussion of information on other relevant projects/concepts received after publication of the proposed Final EIR/EIS (Section 3.3).

As stated in the foregoing, no new information was included in this document that would result in: 1) A new significant environmental impact resulting from the project or from a new mitigation measure proposed to be implemented. (See *Laurel Heights Improvement Association v. Regents of University of California (Laurel Heights II)* (1993) 6 Cal.4th 1112, 1129; see also *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 447.) 2) A substantial increase in the severity of an environmental impact unless mitigation measures are adopted that reduce the impact to a level of insignificance; and/or 3) A feasible project alternative or mitigation measure considerably different from others previously analyzed were added that would clearly lessen the environmental impacts of the project but be unacceptable to the project proponent.

Additionally, many of the comments received dispute the Final EIR/EIS's analyses or conclusions in which the Final EIR/EIS discusses and evaluates and thus does not trigger the recirculation requirement. (See *Cadiz Land Co. v. Rail Cycle* (2000) 83 Cal.App.4th 74, 97.)

3.1 Comments Received after Publication of the Proposed Final EIR

Summary of Public Review Process during the NEPA required 30-Day Federal Register Notice Period

On December 30, 2016, The U.S. Bureau of Reclamation (Reclamation), in coordination with the California Department of Water Resources (DWR), issued a NOA (see 81 Federal Register 251 (30 December 2016) pp. 96485-96486), as required by the Council on Environmental Quality's (CEQ's) NEPA regulations (see 40 CFR Sections 1506.9 and 1506.10) stating that the Bay Delta Conservation Plan/California WaterFix Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS) was made available to the public on December 22, 2016. The NOA stated that:

No Federal or State decision on the proposed action will be made until at least 30 days after U.S. Environmental Protection Agency (EPA) publishes a notice of availability of the Final EIR/EIS. After the 30-day period, the U.S. Department of the interior will sign a Record of Decision [ROD] and DWR will complete a Notice of Decision [sic].

Although issued jointly with DWR, there is no equivalent requirement under CEQA or other California law for DWR to publish a notice of the Final EIR/EIS. Indeed, although NEPA-required the 30-day review period on the Final EIS, nothing in CEQA required a similar public review period for the Final EIR portion of the document. Thus, for purposes of CEQA, this additional public comment period was an example of a purely voluntary review period that a lead agency may, but need not, offer to the public. (See State CEQA Guidelines, § 15089, subd. (b); *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) 62 Cal.4th 204, 237.) Because the NOA was required by NEPA, DWR utilized the notice as an additional method for furthering the goals of public outreach. DWR included a statement in the Federal register notice, and other announcements of the Final EIR/EIS, stating that:

DWR's certification of the EIR and final decision-making under the CEQA will not occur until at least 30 days after EPA publishes a notice of availability of the Final EIR/EIS. This distribution of the Final EIR/EIS, including the written proposed responses to comments submitted by public agencies, is intended to satisfy the requirement to provide these responses to commenting public agencies at least 10 days prior to certification, consistent with CEQA Guidelines Section 15088(b). In addition, the end of the Federal Register notice period is intended by DWR to close the period by which any person may submit to DWR any grounds for noncompliance with CEQA, CA Public Resources Code Section 21177(a).

DWR and Reclamation sought comments on the Final EIR/EIS, and DWR has considered all comments received during the NEPA 30-day Federal Register notice period. During this Federal Register notice period, approximately 48,855 total pages of comment letters and attachments were received from stakeholders and members of the public. In an effort to promote transparency and good faith, DWR has considered comments received during the notice period.

Comments Received During the Federal Register Notice Period

The following organizations and members of the public submitted comments during the Federal Register notice period. This list is separated by governmental organizations, non-governmental organizations, and members of the public. The comment consideration tables (refer to Table 3-1 and Table 3-2) are presented in tabular format alphabetically by last name or organization name and separated into organizations (Table 3-1) and members of the public (Table 3-2).

Governmental Organizations

Central Delta Water Agency City of Antioch City of Brentwood City of Sacramento City of Stockton Contra Costa County Water Agency East Bay Municipal Utility District Local Agencies of the North Delta North Delta Water Agency Sacramento County Sacramento Regional County Sanitation District San Joaquin Agencies San Juan Water District Sanitation Districts of Los Angeles County Solano County South Delta Water Agency Tehama-Colusa Canal Authority Town of Discovery Bay United States Environmental Protection Agency Region IX Non-governmental Organizations American River Water Agencies California Central Valley Flood Control Association California Water Research Center for Biological Diversity Earth Law Center Environmental Water Caucus Friends of Stone Lakes National Wildlife Refuge Friends of the River Locke Management Association Natural Resources Defense Council North Coast Rivers Alliance North Delta CARES North State Water Alliance Planning and Conservation League Recreational Boaters of California

Save the California Delta Alliance

Snug Harbor Resorts, LLC

Members of the Public

Please refer to Table 3-2, for comments that were received from members of the public. This table is presented in tabular format alphabetically by last name and includes consideration of each comment.

Approach to Considering Comments Received During the Federal Register Notice Period

DWR as CEQA lead agency utilized the following approach for considering comments and attachments submitted during the Federal Register notice period. Comment letters were separated by organization and/or person who submitted the material for consideration.

Determination of Comment Letters vs Attachment items:

- Materials received were determined to be either:
 - 1. A "comment letter," which is identified as the commenters primary comments on the Final EIR/EIS. This determination was based on identification as such by the commenter or based on lead agency review and content of the information, or
 - 2. An "attachment," which is identified as the commenters supporting documents to the commenter's comment letter. In some instances, a commenter identified material as an attachment, but the lead agencies determined, based on its content, to treat it as a comment letter for the consideration process.
- Comment letters and attachments were assessed differently for the consideration process:
 - Items identified as comment letters were compiled into comment tables (Table 3-1 and Table 3-2), divided into resource topic areas, and assessed in greater detail based on the initial assessment that they contained multiple topic areas to be evaluated.
 - Items identified as attachments were assessed in their entirety and included at the bottom of the associated comment letter table.

Review and Consideration of Content:

- Comments and attachments were analyzed in relation to the proposed project and its alternatives as analyzed in the Final EIR/EIS. Comments not related to the proposed project or Final EIR/EIS were not considered further and noted as not related to the Final EIR/EIS.
- Further consideration of comment letters and attachments were intended to identify new information related to environmental resources discussed or analyzed in the Final EIR/EIS.

- If comments or attachments raised potentially significant new environmental information that was not previously addressed in the Final EIR/EIS, further discussion was provided in an attached comment consideration tables, in order to consider the comment for noncompliance with CEQA, CA Public Resources Code Section 21177(a) and whether it trigger the criteria for recirculation under CEQA Guidelines Section 15088.5.. However, no comments or attachments received raised significant new environmental information that triggers recirculation under Public Resources Code section 21092.1 and CEQA Guidelines section 15088.5.
- If comments or attachments discussed processes outside of CEQA or NEPA, and determined to be relevant to the Final EIR/EIS, specifically the State Water Resources Control Board change in point of diversion hearing process or the Section 7 and 2081(b) processes, the commenter is referred to Section 4, *State Water Board Change Petition Process*, and Section 5, *Endangered Species Compliance*, respectively, of this document for a discussion of those processes and their relation to the Final EIR/EIS. The State Water Board change in point of diversion hearing (Part 1) process and the Section 7 & 2081(b) processes doesn't result in significant new information requiring recirculation. DWR's and Reclamation's State Water Board change in point of diversion hearing (Part 1) testimony and exhibits are incorporated into this Final EIR/EIS and have been fully considered in relation to the Final EIR/EIS and CEQA Guidelines, § 15088.5, subd. (a). Additionally the Section 7 and draft 2081(b) permits have been fully considered in relation to the Final EIR/EIS and CEQA Guidelines, § 15088.5, subd. (a).
- Comments or attachments requesting an extension to the 30-day notice period were referred to the signed joint letter from Reclamation and DWR dated January 25, 2017, USBR/DWR denial of Extension requests to Federal Register Notice Period. Because Reclamation and DWR believe sufficient opportunity has already been provided in the proposed project's environmental review process, because DWR has gone beyond the CEQA noticing requirements for a Final EIR, and because it is in the public interest in having the agencies proceed in an orderly fashion to the final steps in CEQA and NEPA decision-making, Reclamation did not extend the federal register notice period under NEPA beyond January 30, 2017. Under CEQA, there is no requirement that DWR provide any timeframe for submittal of any grounds for noncompliance with CEQA after issuance of the Final EIR/EIS.
- Comments received considerably after the end of 30-day NEPA comment period on January 30, 2017 are discussed in Section 3.2 below.

Utilizing this process, DWR as lead agency has made a good faith effort to ensure that all substantive comments potentially raising significant new environmental information related to the environmental resources analyzed in the Final EIR/EIS have been identified and considered (see Table 3-1 and Table 3-2). However, no comments or attachments received raised significant new environmental information that triggers recirculation under Public Resources Code section 21092.1 and CEQA Guidelines section 15088.5.

The previous public review periods will not be discussed in this section. For more information regarding the previous public review process and response to comments received during the 2013 Draft EIR/EIS and 2015 RDEIR/SDEIS public comment periods see Final EIR/EIS, Volume

II, Responses to Comments on the Draft EIR/EIS, including Master Response 39, *Public Review Period Duration*.

Summary of Comments Received During the Federal Register Notice Period on the Final EIR/EIS

As expected for a project of the scale and complexity of the BDCP and California WaterFix, the lead agencies received comments on a broad range of policy and environmental issues. In addition, some comments received during the Federal Register notice period included comments solely on legal issues and not necessarily on the Final EIR/EIS. Major topic areas that elicited frequent comments, but did not raise potential significant new information that wasn't previously addressed in the Final EIR/EIS or was outside the scope of the Final EIR/EIS included: the decision-making process, alternatives development, CEQA/NEPA legal arguments, adequacy of responses to previous comments, economic impacts and requests for extension of the notice period. Additionally, many of the comments received dispute the Final EIR/EIS's analyses or conclusions in which the Final EIR/EIS discusses and evaluates and thus does not trigger the recirculation requirement. (See *Cadiz Land Co. v. Rail Cycle* (2000) 83 Cal.App.4th 74, 97.)

The purpose of each consideration to a comment on the Final EIR/EIS is to address potential significant new information raised by each comment. Below is a selection of technical comments received during the notice period that warranted a detailed discussion on a specific Final EIR/EIS resource topic area. DWR focused on presenting information in a clear format with emphasis on information that the lead agencies determined would be useful to the public, agencies, and decision-makers.

Topic areas that elicited frequent comments from numerous organizations and members of the public that are described below include: climate change, cultural resources, fish and aquatic resources, groundwater, recreation, surface water, terrestrial biological resources, water quality and water supply. As described above, all items received during the Federal Register notice period are accounted for, considered, and presented as comment tables. The attached comment consideration tables, Table 3-1 and Table 3-2, are presented in tabular format alphabetically by last name or organization name and separated into organizations (Table 3-1) and members of the public (Table 3-2). Additionally, copies of original comment letters and emails received during the Federal Register notice period are available publically. See individual comment consideration tables for specific comments and consideration.

Consideration of a selection of comments received during the Federal Register notice period is presented below in summary format by resource topic area. It should be noted that all comments received were considered as described above but only a selection of comments are summarized below to facilitate a discussion of similar technical environmental issues that were raised by several commenters. For additional detailed discussion on any State Water Board change petition hearing related issues see section 4, of this document.

<u>Climate Change</u>

Comment Summary: In its 2015 comments on the Revised Draft EIR/EIS, California Water Research stated that the best available science now shows that sea level rise is accelerating. In

the 2015 comments, California Water Research cited new research supporting the 2012 NOAA high estimates of 2 meters by 2100. (California Water Research, comment 6)

Comment Consideration:

Commenter previously made this comment in Volume 2, Final EIR/EIS, RECIRC 2606-4 where it was responded to in detail. Also refer to Master Response 19 in Volume 2, Final EIR/EIS, which provides an overview on how the lead agencies incorporated climate change and greenhouse gas (GHG) emission standards into the EIR/EIS analyses, including background information on both of these issues. Sea level rise is considered in two different portions of the analysis of action alternatives as compared to the No Action Alternative in the EIR/EIS. First, sea level rise is considered in the numerical modeling based upon results from the CALSIM II and DSM2 models. With respect to these model results, the analysis of operations of the action alternatives are compared using model runs that include identical sea level rise and climate change assumptions in the action alternatives and the No Action Alternative. The difference in model results between each action alternative and the No Action Alternative is due to the changes in operations of the alternative, and not due to sea level rise and/or climate change. If the sea level rise values were changed based upon different assumptions, those modified values would be included in both the action alternatives and the No Action Alternative; therefore, the incremental differences between the action alternatives as compared to the No Action Alternative would be similar to the results presented in the EIR/EIS. It should be recognized that any additional increase in sea level rise would cause increased salinity in SWP and CVP deliveries under both the No Action Alternative and action alternatives.

As described in SWRCB California WaterFix hearing part rebuttal testimony DWR-86, the sea level rise assumptions for the CVP-SWP operations modeling for California WaterFix are within the range of projections and appropriate values selected based on the best available science. See Section 4, State Water Board Change Petition Process, Developments after Publication of the Proposed Final Environmental Impact Report, for discussion on State Water Recourses Control Board hearing materials.

As noted in Section A.7.6 of BDCP Draft EIR/EIS (SWRCB-4) Appendix 5A, given considerable uncertainty in the sea level rise projections and the state of sea level rise science, BDCP used the mid-range estimates. For BDCP/California WaterFix a 15 cm sea level rise was assumed by 2025-2030, and a 45 cm sea level rise was assumed by 2060 based on the Rahmstorf (2007), in considering the effects of sea level rise on the CVP-SWP operations with and without California WaterFix. These assumptions were also consistent with Vermeer and Rahmstorf (2009), the USACE 2011 guidance for incorporating sea level change in civil works programs, and the National Research Council sea level rise projections from 2012 (SWRCB-4, Table 29-2).

In addition to considering the 15 cm and 45 cm sea level rise projections, several other sea level rise values were simulated using UnTRIM, a three-dimensional Bay-Delta hydrodynamics and salinity model to capture the uncertainty in the sea level rise projections and to understand the potential impact on the Delta hydrodynamics and salinity intrusion. UnTRIM was simulated for sea level rise values including 15 cm, 30 cm, 45 cm, 60 cm, 140 cm and 140 cm with 5% tidal range amplification. UnTRIM results for the simulated sea level rise scenarios were included in the SWRCB-4, Appendix 5A Section D Attachment 3.

It should be noted that there are differences in environmental conditions that would occur under the No Action Alternative as compared to the Existing Conditions; however, these changes are not mitigated under the Project because they would occur with or without the Project.

Second, sea level rise is considered in the analysis of the design assumptions presented in the Conceptual Engineering Report (CER) for the proposed facilities. As described in the July 2015 CER, all facilities would be designed to be protected against a 200-year flood event with the sea level rise for Year 2100. The CER also describes that the flood levels, sea level rise, and wind-wave run-up values will be further refined during the design phase in the upcoming engineering phases, which will provide more accurate water surface elevation information. The determination of the sea level rise values will be in accordance with the requirements at the time of design as adopted by the State of California and U.S. Army Corps of Engineers.

This comment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/EIS. The Final EIR/EIS complies with both CEQA and NEPA.

<u>Cultural</u>

Comment Summary: North Delta CARES states that neither the BDCP, nor the partially recirculated draft EIR/S indicates where they have fully complied with the National Historic Preservation Act and Advisory Council on Historic Preservation that administers the requirements of the Act. (North Delta CARES, ATT 2)

Comment Consideration:

Although much of the study area was not legally accessible for cultural resources surveys, other methods were employed to identify cultural resources within it. Data compiled from record searches, a search of the Native American Heritage Commission's sacred lands file, correspondence with the Native American community, archival map research, aerial photographs, a sensitivity analysis for unidentified prehistoric and historic-era archaeological resources and limited field surveys for archaeology and the built environment were sufficient to characterize the types of resources likely to be present and potential effects of the project alternatives upon them.

The conclusions and mitigation measures outlined in the Final EIR/EIS were developed as part of the CEQA and NEPA processes.

Consultation with Native American tribes and other interested parties under Section 106 is the responsibility of federal agencies. Section 18.2.1.3, Chapter 18 of the Final EIR/EIS, describes Section 106 compliance specific to the proposed project. As stated in the Final EIR/EIS, a Section 106 Programmatic Agreement (PA) is being developed and the USACE will be the lead federal lead agency. Consultation between the federal lead agency and interested parties is

addressed throughout the PA, which was fully executed on March 21, 2017. Also see Master Response 21, in Volume 2 of the Final EIR/EIS, regarding Section 106 compliance.

This comment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/EIS.

Fish and Aquatic Resources

Comment Summary: East Bay MUD commented regarding impacts on Mokelumne River fisheries. (East Bay Municipal Utility District, comment 4)

Comment Consideration:

This section describes the commenter's view on the sufficiency of the Final EIR/EIS in evaluating impacts to Mokelumne River fisheries. Aside from the fall-run Chinook salmon comment, this section does not raise any new environmental issues that were not addressed in the Final EIR/EIS. Please see Final EIR/EIS, Volume 2, DEIR/S comment letter #1633, response to comment #14 regarding reverse flows under the project. Also see Master Response 17, Volume 2 in the Final EIR/EIS regarding effects to fish species.

Regarding fall-run Chinook salmon, the Final EIR/EIS explicitly evaluates Mokelumne River fall-run Chinook salmon separately in numerous ways. Upstream, there are several assessments of Mokelumne River flows with respect to spawning and egg incubation (Impact AQUA-76), rearing habitat (Impact AQUA-77), and juvenile emigration and adult immigration (Impact AQUA-78). Regardless, none of the alternatives would affect Mokelumne River fish upstream of the Delta because Camanche and Pardee reservoirs are not part of SWP/CVP operations and, therefore, would not differ from the baseline under any alternative (this is confirmed by CALSIM modeling outputs presented in the document). In the Delta, effects of the alternatives on fall-run Chinook salmon emigrating juveniles and immigrating adults were evaluated using DSM2-QUAL fingerprinting to assess potential changes in olfactory cues as part of Impact AQUA-78. These analyses, as well as others not discussed in this comment, were sufficient to fully evaluate potential impacts to Mokelumne River fisheries.

This comment does not raise any substantive new environmental information or analysis that would result in a new significant environmental impact.

Comment Summary: East Bay MUD asserts that the response to comment does not adequately respond to the reverse-flow impacts identified and described by EBMUD. (East Bay Municipal Utility District, ATT 1)

Comment Consideration:

An analysis conducted by DWR modelers showed that the California WaterFix, as represented by operations under Alternative 4A H3 scenario, did not result in an any increase in frequency or duration of reverse flows that would cause an advective distance of 0.9 mi or greater. This analysis was described by Dr. Nader-Tehrani at the SWRCB California WaterFix Part 1A hearing during the cross-examination by Mr. Jonathan Salmon representing EBMUD. (08/24/2016 Transcript Vol 14 pp 97-102) The response provided identifies that the operations criteria proposed for Alternative 4A indicates that the diversions at the north Delta diversion intakes would only occur after meeting a positive downstream sweeping velocity requirement along the fish screens at the intakes. This requirement ensures that there would not be any diversion at the proposed intakes in the event the velocity at the intake fish screen would be less positive than the proposed sweeping velocity criteria. Therefore, if the velocity at the intakes reversing or going negative, then there would not be any diversions at the proposed intake. This ensures that the frequency of the reverse flows would not be exacerbated under Alternative 4A compared to the No Action Alternative

As acknowledged by the commenter, DSM2 was recalibrated to address the attenuation of peak tide. The calibration results were satisfactory as indicated by the quantitative calibration metrics reported in the Final EIR/EIS. Moreover, the impacts determined in the Final EIR/EIS were based on comparison of Alternative 4A model results to the No Action Alternative model results, in addition to the CEQA Existing Conditions baseline. Therefore, any uncertainties or limitations of the models used would be consisted under both scenarios. Dr. Bray's testimony, which forms the basis for this comment, was found to be flawed by the DWR modelers as shown in their Part 1 rebuttal testimony DWR-79.

See Section 4, State Water Board Change Petition Process, Developments after Publication of the Proposed Final Environmental Impact Report, for discussion on State Water Recourses Control Board hearing materials.

Comment Summary: Earth Law Center asserts that the preferred alternative (Alternative 4A) would exacerbate water temperature impacts on numerous fish species. (Earth Law Center, comment 5)

Comment Consideration:

The temperature results that compare Alternative 4A to Existing Conditions are largely driven by climate change and not Alt 4A. The comparison of Alt 4A to NAA is more appropriate as a "with project" vs. "without project" comparison. CEQA case law allows CEQA lead agencies to take future conditions, such as occur under a No Project (No Action) Alternative, into account when assessing the significance of impacts under CEQA. (See Neighbors for Smart Rail v. Exposition Metro Line Construction Authority (2013) 57 Cal.4th 439. 454; see also Master Response 1, Environmental Baselines.) For the analysis referred to by the commenter, the NAA vs. Alt 4A comparison indicates that there would be a 5% increase in years in the red level of concern. As noted in the text (in Impact AQUA-40), "These differences would not be biologically meaningful to winter-run Chinook salmon spawners and eggs, as the 4 years constitute a small proportion of the 82 year period used for this analysis, as long as the years were not consecutive, which they were not in this case." Therefore, this would result in a "not adverse" impact.

This comment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/EIS.

Comment Summary: North State Water Alliance asserts that the Final EIR/EIS's statisticallybased analysis is inadequate to analyze project impacts on longfin smelt. (North State Water Alliance, comment 27)

Comment Consideration:

Regarding uncertainty, it is acknowledged that there is appreciable uncertainty in predicting longfin smelt relative abundance as a function of X2/Delta outflow. Such acknowledgement is provided in a number of locations in the Final EIR/EIS, e.g., Impact AQUA-22 for Alternative 4A (p. 11-3206). Explicit examination of uncertainty in terms of variability around mean estimates of longfin smelt relative abundance was provided in the California WaterFix CESA Incidental Take Permit application submitted in October 2016.

The Final EIR/EIS is not internally inconsistent in the manner the commenter suggests. The commenter claims that some life cycle models were not used because "they do not address some biological variables". However, they were not used because not all variables included in the life cycle models could be provided with appropriate input values (e.g., prey abundance). A summary of the reasons for not including the potential life cycle models is provided in Table 5.G-1 of Appendix 5.G Fish Life Cycle Models in the public draft BDCP. Use of relatively simple statistical models was undertaken where appropriate, e.g., X2-abundance regression from Kimmerer et al. (2009) for longfin smelt.

This comment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/S.

Comment Summary: North State Water Alliance asserts that many of the comments made by fisheries biology expert Dave Vogel about the lack of detail provided for the design of the North Delta intakes and fish screens (and the associated impacts that poor design may have on salmon) were responded to by promising that all concerns would be addressed by a later series of studies. (North State Water Alliance, comment 42)

Comment Consideration:

This section describes the commenter's view on the sufficiency of responses to comments on previous EIR/EIS drafts. The Final EIR/EIS meets all requirements of NEPA and CEQA and that all comments were thoughtfully and meaningfully responded to. Although these comments have been responded to, with respect to consideration of GCID studies in the Comment 197 example provided by the commenter, consideration of such studies for intake design refinement would be done as part of the preconstruction studies (e.g., Preconstruction study 5, Predator Habitat Locations; see Table 3.4-18 in the California WaterFix BA). This and other preconstruction studies require a detailed study design and must be developed prior to implementation, with review and approval by CDFW, NMFS, and USFWS prior to implementation. Such studies will be permit terms in the ESA and CESA permitting processes, demonstrating that there will be significant regulatory oversight from the permitting fishery agencies. Other preconstruction studies will also allow refinement of intake design in order to

address issues related to factors such as sweeping velocity and the potential for sediment accumulation. Although apparently unsatisfactory to the commenter, as previously described (and cross-referenced to Appendix 3.F of the FEIR/S), the process of selecting north Delta intake locations involved collaboration between the Fish Facilities Technical Team, DWR, and others in order to identify locations meeting the recommendations of the FFTT, including consideration of criteria such as potential sweeping velocity; responses to the comments were quite specific as necessary (e.g., response to comment 147). Preconstruction refinement is not deferral of mitigation. Here, the lead agencies are committing themselves to "eventually devising measures that will satisfy specific performance criteria articulated at the time of project approval." (Sacramento Old City Association v. City Council (1991) 229 Cal.App.3d 1011, 1029.) Further, as stated above, detailed study designs must be developed prior to implementation and will be developed in consultation with and approved by CDFW, NMFS and USFWS consistent with CEQA's requirements. (See Center for Biological Diversity v. Department of Fish & Wildlife (2015) 234 Cal.App.4th 214, 245.) Further, should the lead agencies discover that additional mitigation is necessary or that mitigation measures must be changed due to substantial new information, additional analyses may be necessary, as is allowed under CEOA. (CEOA Guidelines, sections 15162 through 15164; see also Friends of the College of San Mateo Gardens v. San Mateo Community College Dist. (2016) 1 Cal.5th 937.)

This comment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/S.

<u>Groundwater</u>

Comment Summary: Sacramento County asserts that recirculation of the Final EIR/EIS is required because the Final EIR/EIS contains new evidence of a potential significant impact on groundwater resources underlying the Sacramento River. (Sacramento County, comment 11)

Comment Consideration:

The comment describes updated language included in the Final EIR/EIS for Impact GW-2: During Operations, Deplete Groundwater Supplies or Interfere with Groundwater Recharge, Alter Local Groundwater Levels, or Reduce the Production Capacity of Preexisting Nearby Wells, presented in Chapter 7, Groundwater. In response to comments received on the Draft EIR/EIS, the text in Chapter 7 was modified to provide more clarity related to both the CVHM-D model results for Alternative 1A and the extrapolated results for Alternatives 4 and 4A. This additional, clarifying information did not alter the significance conclusions from the Draft EIR/EIS, and thus did not reveal any new significant effects or any substantial increase in the severity of any previously-identified effects that would require recirculation under CEQA or a supplemental Final EIS under NEPA. The discussion below describes groundwater modeling and groundwater effects under Alternatives 1A, 1B and 1C and how these analyses relate to Alternatives 4 and 4A.

The 2013 Draft EIR/EIS described the effects of Alternatives 1A, 1B, and 1C on groundwater conditions as compared to the Existing Conditions and No Action Alternative, as presented in Sections 7.3.3.2, 7.3.3.3, and 7.3.3.4. As described in Section 3.5 of the Draft EIR/EIS, the

operations of the north Delta intakes on the Sacramento River are identical under Alternatives 1A, 1B, and 1C. The physical differences between these alternatives are related to the conveyance facilities in between the intakes and Clifton Court Forebay.

The changes in groundwater conditions under Alternatives 1A, 1B, and 1C, as compared to the Existing Conditions (CEQA), are caused by climate change, sea level rise, changes in the Sacramento River surface water elevations due to operations of the north Delta intakes, seepage from the intermediate forebay (Alternative 1A, only), or groundwater loss into canals (Alternatives 1B and 1C). In contrast, the changes under Alternatives 1A, 1B, and 1C as compared to the No Action Alternative (NEPA) do not include changes due to climate change and sea level rise, and, therefore, only include changes due to operations of the north Delta intakes, seepage from the intermediate forebay (Alternative 1A, only), or groundwater loss into canals (Alternatives 1B and 1C). For this reason, DWR has appropriately accounted for the NAA in considering impacts in this context. CEQA case law allows CEQA lead agencies to take future conditions, such as occur under a No Project (No Action) Alternative, into account when assessing the significance of impacts under CEQA. (See Neighbors for Smart Rail v. Exposition Metro Line Construction Authority (2013) 57 Cal.4th 439. 454; see also Master Response 1, Environmental Baselines.)

For Alternatives 1B and 1C, which include surface canals, the impact (GW 2) was significant and unavoidable under CEQA, even with mitigation, due groundwater discharge into canals. (DEIR/EIS, pp. 7-58 – 7-59, 7-64-7-65.) For Alternatives 1B and 1C, the impact (GW 2) was adverse under NEPA, even with mitigation, due groundwater discharge into canals. (DEIR/EIS, pp. 7-58, 7-64.)

For Alternative 1A, which includes tunnels rather than surface canals, the impact (GW 2) was less than significant under CEQA, without mitigation, including the effect of seepage from the intermediate forebay influencing Sacramento River groundwater levels. (DEIR/EIS, pp. 7-48 – 7-49.) For Alternative 1A, the impact (GW 2) was not adverse under NEPA, without mitigation, including the effect of seepage from the intermediate forebay influencing Sacramento River groundwater levels. (DEIR/EIS, pp. 7-48 – 7-49.) For Alternative 1A, the impact (GW 2) was not adverse under NEPA, without mitigation, including the effect of seepage from the intermediate forebay influencing Sacramento River groundwater levels. (DEIR/EIS, p. 7-48.)

Figures for GW-2 presented in Chapter 7 of the Draft EIR/EIS present the maximum negative effect on groundwater elevations as projected by the 2013 CVHM-D model over the simulation period. As shown in Figures 7-14 (Alt 1B) and 7-19 (Alt 1C) in the Draft EIR/EIS, the maximum negative effect on groundwater would be related to groundwater discharge into canals under Alternatives 1B and 1C, respectively, as compared to the No Action Alternative in the late summer and fall months when groundwater elevations would be low with or without the Project.

Figure 7-8 presented in Chapter 7 of the Draft EIR/EIS shows the maximum negative effect on groundwater conditions under Alternative 1A, as compared to the No Action Alternative, would be caused by seepage from the intermediate forebay. Seepage from the intermediate forebay would increase the groundwater elevation in the area and flow into the Sacramento River in the winter and early spring months when groundwater elevations would be high with or without the Project, resulting in higher surface flows in the Sacramento River and higher groundwater levels adjacent to the Sacramento River than under Alternatives 1B and 1C, which do not include seepage from the intermediate forebay.

The 2013 CVHM¬ D model results during the summer months for Alternative 1A, as compared to the No Action Alternative, indicate that the groundwater elevations along the Sacramento River would decline up to 5 feet as compared to the No Action Alternative in the same manner as shown for Alternatives 1B and 1C (Figures 7-14 and 7-19) if the seepage from the intermediate forebay were not to occur. However, since the condition related to the Sacramento River was not considered to be the most negative effect under Alternative 1A, that condition was not included in Figure 7-8, presented in Chapter 7, of the Draft EIR/EIS.

Based upon the monthly results of the 2013 CVHM-D model runs, the projected monthly groundwater elevations along the Sacramento River for Alternatives 1B and 1C would be within 0 to 3 feet of the projected monthly groundwater elevations for the No Action Alternative 99 percent of the time. For the remaining 1 percent of the time, the change in groundwater elevation would be 4 to 5 feet lower under Alternatives 1B and 1C, as compared to the No Action Alternative. These calculated changes in model results indicate that conditions under Alternative 1B and 1C would not be substantially different than the No Action Alternative. As stated above, Alternative 1A, with reduced seepage from the intermediate forebay, would have the same operations and effects on Sacramento River surface water and adjacent groundwater as Alternatives 1B and 1C, and would have conditions along the Sacramento River that would not be substantially different than the No Action Alternative, as stated above for Alternatives 1B and 1C. Due to the model uncertainties based upon the use of the monthly CALSIM II model output used as the input values to the monthly CVHM-D model, these results would be considered to be similar.

As described in Section 7.3.3.9 of the Draft EIR/EIS, changes in groundwater elevations along the Sacramento River related to the operations of the north Delta intakes under Alternative 4 (represented by the comparison of results for Alternatives 4H1, 4H2, 4H3, and 4H4), as compared to the No Action Alternative, would be similar to the conditions described under Alternatives 1A, 1B, and 1C, as compared to the No Action Alternative. For Alternative 4, which includes tunnels rather than surface canals, the impact (GW-2) was less than significant, even without mitigation. (DEIR/EIS, pp. 7-81 – 7-82.) This would occur because the calculated changes in monthly groundwater elevations along the Sacramento River due the operations of the north Delta intakes are directly related to the changes in monthly flows in the Sacramento *River downstream of the intakes as simulated by the CALSIM II model. Because the monthly* flows for Alternatives 4H1, 4H2, 4H3, and 4H4 (see Appendix 5A, Section C, Tables C-21-17 through C-21-20) are generally similar to, or greater than, flows under Alternatives 1A, 1B, and 1C (see Appendix 5A, Section C, Table C-21-14), it is anticipated that the monthly CVHM-D groundwater elevations along the Sacramento River associated with operations of the north Delta intakes would also be similar to, or higher than, those that would occur under Alternative 4 as compared to Alternative 1A, 1B and 1C. Therefore, separate CVHM-D model runs were not completed for Alternatives 4H1, 4H2, 4H3, and 4H4; and the impact analyses were based upon the comparison of results from Alternatives 1A, 1B, and 1C, as compared to the No Action Alternative. The effects of the operations under Alternative 4A, as compared to

the No Action Alternative (ELT) are similar to the effects of operations under Alternative 4, as compared to the No Action Alternative (LLT). Therefore, the effects on the Delta groundwater resources based on the comparison to each of the No Action Alternatives are similar.

Following publication of the RDEIR/SDEIS, additional information was compiled by DWR and reviewed by the EIR/EIS groundwater analysis team. The updated information is related to the use of deep slurry cutoff walls at the intakes, tunnel shafts, and forebays during construction, as well as the use of seepage control methods near the forebays during operations for Alternatives 4 and 4A.

The forebays would be constructed with slurry cutoff walls and seepage cutoff walls around the embankments. These walls would avoid or minimize the flow of water through the embankments in accordance with the DWR Division of Safety of Dams requirements. The impermeable or low-permeability slurry cutoff walls and seepage cutoff walls would extend to an impermeable soil layer. The impermeable layers could be discontinuous around the perimeter of the forebays. In those areas, the potential for groundwater flow at depths under the embankments could be minimized through the placement of grout along the bottom of the slurry cutoff walls and seepage cutoff walls.

As a result of the updated project description, the potential adverse effects to construction groundwater conditions identified as Impact GW-1: During Construction, Deplete Groundwater Supplies or Interfere with Groundwater Recharge, Alter Local Groundwater Levels, or Reduce the Production Capacity of Preexisting Nearby Wells, in the DEIR/DEIS and the RDEIR/SDEIS have been reduced to a level of less than significant and not potentially adverse, for CEQA and NEPA respectively for Alternatives 4 and 4A. Additionally, this updated information revealed reductions in the effect of seepage from the intermediate forebay for Alternatives 4 and 4A. In absence of seepage from the intermediate forebay, groundwater levels under the Sacramento River related to operations of the north Delta intakes would reflect conditions similar to Alternatives 1B and 1C, and could possibly result in an up to fivefoot episodic lowering of groundwater levels adjacent to the Sacramento River. This effect is not considered significant and is not substantially different than the No Action Alternative under Alternatives 4 and 4A. For a significant groundwater impact to result, an alternative would have to deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level that would reduce well yields to a level that would not support existing land uses or planned uses for which permits have been granted. (DEIR/EIS, p. 7-38; Final EIR/EIS, p. 7-41.) An episodic five foot lowering of groundwater levels in an area, adjacent to a major river, with existing high groundwater levels does not translate into such a severe level of impact. Adverse effects on existing wells and existing or planned land uses would not occur. Thus, no mitigation is required to address operational effects on groundwater. Even so, out of an abundance of caution and in the name of transparency and full disclosure, Mitigation Measure GW-1 has been updated to include ongoing monitoring of groundwater levels along the Sacramento River for up to five years during north Delta intake operations. The expectation is that such monitoring will confirm that operations will not result in significant or adverse effects on groundwater levels in the vicinity of the north Delta intakes. In the unlikely event that

problems are identified, the mitigation measure provides for taking steps to reduce any impact to a less than significant level.

In summary, groundwater modeling was thoroughly presented in the environmental documents for changes in groundwater elevations in the Delta based upon the CVHM-D model results. Additional written analysis of the model results was produced for the State Water Resources Control Board water rights hearing. This additional analysis indicated that groundwater recharge will not be affected to the extent that it will disrupt the use of groundwater wells within the vicinity of the California WaterFix intake structures, pipeline alignment, or more broadly within the groundwater basin underlying the southern portion of Sacramento County. This analysis is contained within the testimony and exhibits submitted as DWR-218 (Gwen Buchholz Groundwater Impact Analysis) and DWR-80 (Testimony of Gwen Buchholz). Additionally please see Master Response 46, in Volume 2, Final EIR/EIS which discusses why new modeling and information presented in the Final EIR/EIS does not require further recirculation.

Comment Summary: Sacramento County asserts that the lead agencies have failed to provide a good faith reasoned analysis of SCWA's proposed mitigation for the Project's potential construction impacts on SCWA's groundwater facilities for the Town of Hood and the groundwater aquifer that supplies these wells. (Sacramento County, comment 12)

Comment Consideration:

This comment expresses the commenter's concern about the feasibility of mitigation measures presented in the project as well as the commenter's concern for impacts to aquifers as a result of construction. This comment was addressed in response to the original comment (Comment 2511-47 on the Recirculated Draft EIR/EIS, Volume 2, Final EIR/EIS).

While SCWA's suggestions for mitigation are appreciated, the current mitigation measures, environmental commitments, and Avoidance and Minimization Measures (AMMs) are deemed sufficient to mitigate for impacts to utilities as a result of the project. Mitigation Measures UT-6a, 6b, and 6c provide a three-step process to ensure that any impacts to utilities will be mitigated for. If any of the scenarios the commenter suggests occur, these Mitigation Measures would verify the location of the utility, and relocate it as necessary. With implementation of MM UT-6a, the wells of the Town of Hood would be located prior to construction and therefore will not be affected physically by construction.

Under Environmental Commitment: Perform Geotechnical Studies, and AMM28: Geotechnical Studies, subsurface investigations will be performed along the water conveyance alignment and at facility locations and material borrow areas. The work to be performed will include a subsurface investigation program to provide information required to support the design and construction of the water conveyance facilities. Geotechnical investigations will be conducted to characterize existing soils and to select appropriate foundation types, lateral supports, and stabilization methods that will be implemented to ensure that the facilities are constructed to withstand design loads and to abide by applicable state and federal regulations. These preconstruction studies will identify areas of concern and minimize any risk to groundwater

aquifers as a result of construction by identifying and minimizing any risk of liquefaction and alteration of underground flow paths. This process will be undertaken with the utmost care to prevent the missteps the commenter suggests might cause damage to the aquifers. This risk has been mitigated appropriately in the Final EIR/EIS.

Groundwater modeling was thoroughly presented in the environmental documents for changes in groundwater elevations in the Delta based upon the CVHM-D model results. Additional written analysis of the model results was produced for the State Water Resources Control Board water rights hearing. This additional analysis indicated that groundwater recharge will not be affected to the extent that it will disrupt the use of groundwater wells within the vicinity of the California WaterFix intake structures, pipeline alignment, or more broadly within the groundwater basin underlying the southern portion of Sacramento County. This analysis is contained within the testimony and exhibits submitted as DWR-218 (Gwen Buchholz Groundwater Impact Analysis) and DWR-80 (Testimony of Gwen Buchholz).

Additionally Mitigation Measure GW-1 includes preconstruction well surveys, construction and conveyance operation monitoring and provides measures to offset domestic water supplies through multiple actions. Also see comment 11 above for Sacramento County for a discussion on impacts to groundwater aquifer near the town of Hood.

Surface Water

Comment Summary: California Central Valley Flood Control Association asserts that the Final EIR/EIS obscures and underestimates impacts of the project on the flood control system, as detailed in our prior comments on the Draft EIR/EIS and the RDEIR/SDEIS. (California Central Valley Flood Control Association, comment 3)

Comment Consideration:

This comment includes general comments on the document regarding the project description, and the length and organization of the document. These comments have been made by multiple other commenters, as well as this commenter in response to the Draft EIR/EIS and the RDEIR/SDEIS. Master Response 2 responds to the issue of whether the project description is adequate and whether it meets CEQA and NEPA requirements and allows for adequate environmental analysis. The issue of length and complexity of the EIR/EIS has also been addressed at length in Master Response 38.

The issues of flood flow/channel capacity and ground settlement/liquefaction were raised previously by this commenter in DEIRS 1717 and RECIRC 2654. As responded to previously within the Final EIR/EIS, these issues are addressed in the Chapter 6 (Surface Water) and Chapter 9 (Geology Seismicity), respectively of the Final EIR/EIS. The flood flow analysis presented in Chapter 6 indicates the preferred alternative, 4A, would not result in adverse impacts on flood management. This analysis was based upon maximum monthly flow and maximum reservoir storage results in wet years in the winter months from the CALSIM II model to determine if the operations of the action alternatives would increase overall flood potential in the Sacramento River and Delta watershed under the action alternatives as compared to the No Action Alternative. The results of these model runs indicated that the

overall flood potential would be similar under the action alternatives and the No Action Alternative.

With respect to the surface water elevations in the Sacramento River and Delta waterways in the vicinity and downstream of the proposed intakes, the U.S. Army Corps of Engineers, Central Valley Flood Protection Board, and DWR would require that any construction that would disturb existing levees to be designed in a manner that would not adversely affect existing flood protection. During the design phase, bathymetric surveys would be conducted and multidimensional local numerical models would be used to determine any changes required to the cross-section of the channel and the final design of the intake facilities. Facilities to be constructed along the levees would be designed to provide flood neutrality during construction and operations. Facilities located along the levees, including cofferdams at the intake locations, would be designed to provide continued flood management at the same level of flood protection as the existing levees, or, if applicable, to a higher standard for flood management engineering and permitting requirements if the standards are greater than the existing levee design. The levee design criteria would consider the most recent criteria, including new guidelines for urban and rural levees. The design flood elevation would need to consider sea level rise to reduce impacts. Additionally, DWR would consult with local reclamation districts to ensure that construction activities would not conflict with reclamation district flood protection measures. Facilities construction would include temporary cofferdams, stability analyses, monitoring, and slope remediation. For the excavation of the existing levees, sheet pile wall installation would minimize effects on slope stability during construction.

In response to previously submitted comments by this commenter, analysis was added in the Final EIR/EIS under Impact GEO-5. As described in Chapter 9, during design, the facilityspecific potential for liquefaction would be investigated by a geotechnical engineer. The investigations are an environmental commitment of the BDCP/California WaterFix (see Appendix 3B, Environmental Commitments, AMMs, and CMs). The potential effects of construction vibrations on nearby structures, levees, and utilities would be evaluated using specific piling information (such as pile type, length, spacing, and pile-driving hammer to be used). In areas determined to have a potential for liquefaction, the California-registered civil engineer or California-certified engineering geologist would develop design strategies and construction methods to ensure that pile driving heavy equipment operations do not cause liquefaction which otherwise could damage facilities under construction and surrounding structures, and could threaten the safety of workers at the site. See Chapter 9, Section 9.3.3.2 for additional details on project conformance with flood protection standards and codes, in addition to project commitments and mitigation measures to avoid potential effects.

This comment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/EIS. The Final EIR/EIS complies with CEQA and NEPA.

Terrestrial Biological Resources

Comment Summary: Friends of Stone Lakes National Wildlife Refuge asserts that with the split away from the BDCP, the Tunnels must meet a zero-"take" performance standard for greater

sandhill cranes to avoid running afoul of the crane's status as a California Fully Protected Species. (Friends of Stone Lakes National Wildlife Refuge, comment 3)

Comment Consideration:

The comment questions whether the proposed project has adequately demonstrated that it would not result in any "take" of greater sandhill crane. Although this issue relates to a regulatory prohibition that is different than CEQA's requirement to address potentially significant impacts to a particular environmental resource, the Final EIR/EIS discusses the AMMs that are applied to the alternatives that would avoid take of GSC as a result of the proposed project and alternatives.

Master Response 17, within the Final EIR/EIS, also explains why AMM20 and mitigation measures will ensure no take of greater sandhill crane, as defined by Section 86 of the California Fish and Game Code.

The commenter presents no new environmental information that would change the conclusions in the Final EIR/EIS related to the potential for significant impacts related to GSC, or related to the potential for "take" (as defined by FGC Section 86) of GSC.

This comment does not raise any new environmental issues that weren't raised in the Final EIR/S.

Comment Summary: Friends of Stone Lakes National Wildlife Refuge asserts that the lead agencies' determination that installing flight diverters on existing power lines meets the zero-"take" performance standard is also incorrect and unsupported. (Friends of Stone Lakes National Wildlife Refuge, comment 4)

Comment Consideration:

This comment again questions the adequacy of the Final EIR/EIS in documenting the avoidance of take as it relates to compliance with the California ESA (and not CEQA). The commenter identifies a single study to refute the conclusions of dozens of studies that state diverters are highly effective at reducing avian collisions. The 2007 study cited was not discussed in the Final EIR/EIS; however, the study does not present any new information that would warrant a change in the significance conclusions regarding GSC. The study does not use direct evidence to compare strikes by Greater Sandhill Cranes with and without the use of diverters (in relation to the AMMs associated with the proposed project and alternatives), but rather utilizes behavior observations to support its conclusions. The researchers in the 2007 study did not find a single Sandhill Crane carcass during the study, and found only one Sandhill Crane carcass during the study year, but did not indicate the subspecies (mostly Lessers in the study area) or whether the crane had hit a marked or unmarked line. The study states that Sandhill Cranes were the most behaviorally reactive to transmission lines, supporting the conclusion that they are unlikely to collide with them if they see them, lending support to the effectiveness of diverters. The study also states that the transmission lines' proximity to used habitat, and the relocation of habitat away from transmission lines also reduces likelihood of collisions; that strategy is included in the proposed AMMs, in addition to the use of flight

diverters. The commenter does not provide any new information to reject Final EIR/EIS conclusions that the combination of avoidance measures in AMM20 will result in a less-than-significant impact to the GSC (and avoid of take of GSC).

Furthermore, AMM20 was updated in the Final EIR/EIS, and now allows for one or a combination of minimization and mitigation measures (including undergrounding transmission lines, using natural gas generators in lieu of new transmission lines in high risk zones etc.) to meet the performance standard of no take of greater sandhill crane (as defined by F&G code) associated with new transmission lines. Master Response 17, within the Final EIR/EIS, also explains why AMM20 and mitigation measures will ensure no take of greater sandhill crane, as defined by Section 86 of the California Fish and Game Code.

This comment does not raise any new environmental issues that weren't raised in the Final EIR/S.

Water Quality

Comment Summary: City of Sacramento asserts that the Final EIR/EIS continues to state that there is no potential for Microcystis growth in the Sacramento and American Rivers upstream of the Delta, which is incorrect based on real data collected at the City's E.A. Fairbairn Water Treatment Plant (EAFWTP) and Sacramento River Water Treatment Plant (Sacramento River WTP). (City of Sacramento, comment 8)

Comment Consideration:

The EIR/EIS Microcystis assessment is not flawed as claimed by the comment. Attachments to the comments support the EIR/EIS regarding Microcystis. CITYSAC-8 states: "Historically, there have been no constituents or characteristics consistently present in the raw water that necessitate additional or advanced treatment processes." [Exhibit CITYSAC-8, pg. 2, ln. 10–11] Exhibit CITYSAC-29, pg. 7,11, states that historical operations of the Sacramento River and American River system have maintained hydrodynamic conditions that prevent the formation of stagnant areas that are favorable to cyanobacteria blooms within the rivers. Furthermore, phosphorus levels are generally low, the river does not stratify, and temperatures remain cool except in slower moving eddies and backwater areas [Exhibit CITYSAC-29, pg.7,11]. Thus, conditions in the Sacramento River and American River are rarely conducive to formation of cyanobacteria [Exhibit CITYSAC-29, pg. 11-12]. See Section 4, State Water Board Change Petition Process, Developments after Publication of the Proposed Final Environmental Impact Report, for discussion on State Water Recourses Control Board hearing materials.

The concern raised in this comment regarding the effects of the proposed project on flows is based on comparison to Existing Conditions. Such a comparison includes the effects of not only the alternative, but climate change. To isolate the effects of the alternative, the appropriate baseline for comparison is the No Action Alternative. This is explained in Section 8.3.2.2 and Table 8-63 in Chapter 8, Water Quality. The assessment of project effects was based on comparison to the No Action Alternative. While flows may vary under the project alternatives, the low flows are not expected to be outside of the range that occurs under Existing Conditions or would occur under the No Action Alternative. Thus, any modified reservoir operations under the project alternatives are not expected to promote Microcystis production upstream of the Delta, relative to Existing Conditions and the No Action Alternative (ELT and LLT).

Regarding residence time, the comment is citing DSM2 modeled residence time results for the Delta. The City of Sacramento water intakes are located upstream, and outside of, the DS2M model domain, thus, the modeling results cited in the comment are not relevant.

Commenter previously raised this issue in RECIRC 2562, comment 9, which was responded to within the Final EIR/FEIS. Also see Master Response 14 in Volume 2, Final EIR/EIS, regarding water quality effects.

This comment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/EIS.

Comment Summary: City of Sacramento asserts that another key potential water quality impact to the City's municipal use arising from the California WaterFix Project is an increase in the production of disinfection by-products in the treated water, caused by increased source water temperatures resulting from upstream reservoir operational changes. (City of Sacramento, comment 9)

Comment Consideration:

Regarding temperature changes, this comment incorrectly uses actual historical data to claim that the project would have an adverse effect on river temperature. The historical data do not represent a condition in which the project exists. The temperature modeling that was conducted reflects conditions with (and without) the project to identify impacts. Further, the comment is incorrect in saying the EIR/EIS assumes reservoir operations do not impact water temperature. Temperature modeling was conducted to simulate and evaluate potential effects.

Regarding temperature and THMs, the comment questions the use of a model presented in Master Response 14 to evaluate the potential for increased THMs. While the article cited in Master Response 14 does evaluate three water treatment plants in Paris, the model used in the response is not a site-specific model; it is a general model developed by USEPA (1997). Because prior City comments made claims about increased temperature and THMs, but did not provide a method by which to estimate what those effects would be, the scientific literature was relied upon to estimate the effects of temperature on THM production. Regarding a 4 degree "Celsius" temperature increase, Master Response presents a 4 degree "Fahrenheit" as a hypothetical; modeled increases were much lower as noted in Master Response 14. Finally, the response to comment does not question whether there is a relationship between temperature and THM production. But it also acknowledges that other factors contribute to final THM levels.

This comment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/EIS.
Comment Summary: The City of Stockton notes in its comments on the DEIR/EIS and RDEIR/EIS, a key concern of Stockton was the document's reliance on model results from a location known as "Buckley Cove" to evaluate water quality that DWR has asserted is representative of water quality at the City's drinking water intake. (City of Stockton, comment 10)

Comment Consideration:

The assessment locations in Chapter 8, Water Quality, were chosen such that the modeled water quality changes under the California WaterFix alternatives, relative to baselines, would be representative of water quality changes in the various geographic portions of the Delta as a whole (Chapter 8, Water Quality in Draft EIR/EIS Sections 8.2.2.3 and 8.4.1.3, RDEIR/SDEIS Section 8.3.1.3, and Final EIR/EIS Sections 8.1.2.3 and 8.3.1.3). The assessment was done on a comparative basis (i.e., alternatives as compared to baselines) to understand the relative effect on water quality among the alternatives and geographically across the Delta. This allowed determination of water bodies or reaches of water bodies within the Delta where a given constituent may be most affected by a California WaterFix alternative. Thus, even though water quality in the Delta varies spatially, and locations in the Delta may not have identical water quality to the chosen locations for assessment, given the comparative manner and purposes of the assessment, the effects of the California WaterFix at the locations assessed were considered representative of the effects of the California WaterFix in the various areas of the Delta.

The City of Stockton's diversion of water from the Delta is located on the San Joaquin River near Venice Island. The City's WTP intake location is between the Prisoners Point assessment location, which is a Bay-Delta WQCP compliance location assessed for EC, and the San Joaquin River at Buckley Cove assessment location, which was assessed for all other water quality constituents that were quantitatively modeled. These locations are representative for purposes of assessing the effects of the California WaterFix on water quality at the City of Stockton intake even though the specific water quality itself at Prisoners Point and Buckley Cove is not identical to the water quality at the City's intake location (i.e., it varies somewhat across this reach of river). To be clear, the relative effects of the California WaterFix at these locations on the river's designated beneficial uses of water (including the MUN use) are representative of the relative effects of the California WaterFix on the MUN use at the City's WTP intake. In other words, based on findings from all assessment locations in the Delta, the EIR/EIS made impact findings to beneficial uses designated to water bodies and water body segments, not just to the assessment locations themselves, because the beneficial uses (the cornerstone of the State's water quality standards) are designated by water body and water body segment, not by individual locations or diversion locations.

The topic of assessment location and effects of the California WaterFix at the City of Stockton's diversion location is further addressed in a report prepared to support testimony in Part 1 of the Petition process: Exhibit DWR-652. See Section 4, State Water Board Change Petition Process, Developments after Publication of the Proposed Final Environmental Impact Report, for discussion on State Water Recourses Control Board hearing materials.

Comment Summary: Because the Final EIR/EIS did not evaluate water quality impacts at the location of the Stockton's drinking water intake, Exponent used DWR's model input files and the DSM2 water quality model to obtain model results to describe water quality impacts at Stockton's drinking water intake location. (City of Stockton, comment 11)

Comment Consideration:

The Exponent assessment of chloride impacts at the City of Stockton's drinking water intake is inconsistent with the methodology used for the EIR/EIS assessment. For one, the Exponent assessment compares conditions under the Proposed Project to conditions under a different baseline EBC2(existing biological conditions 2). In assessing impacts of the Proposed Project isolated from effects of climate change and sea level rise, DWR took into account the No Action Alternative, as discussed in the Final EIR/EIS. This approach, which is permitted under CEQA case law (Neighbors for Smart Rail v. Exposition Metro Line Construction Authority (2013) 57 Cal.4th 439. 454), allowed DWR to isolate the effects of climate change and sea level rise from the effects of the proposed project and action alternatives themselves. (See Master Response 1, Environmental Baselines.) Further, the Exponent analysis uses a threshold for chloride of 110 mg/L, which is the City's preferred upper limit for chloride; the state's adopted water quality objective for the Delta at the City's intake location for protection of the municipal and domestic supply beneficial use is the state's drinking water maximum contaminant level, which is 250 mg/L recommended, 500 mg/L as an upper level, and 600 mg/L as a short-term level. The 250 mg/L MCL was used, in part, to make determinations regarding chloride impacts in the EIR/EIS, as this is the state's adopted objective as described in 8.1.3.4, Water Quality, of the Final EIR/EIS.

This comment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/EIS.

Comment Summary: The City of Stockton asserts that the Final EIR/EIS 's response to Stockton's comments expressing concern about impacts to its wastewater discharge are inadequate regarding impacts to Stockton's wastewater discharge. (City of Stockton, comment 21)

Comment Consideration:

Generally, changes in receiving water conditions could affect an NPDES discharger if that discharger's permit has effluent limitations that incorporate dilution credit and a mixing zone that allows for achieving water quality criteria. The effect would be on the effluent limitation value and would depend on the specific constituents for which the discharger has dilution credit. The extent of effect on a discharger would depend on the amount of dilution credit available versus what is needed by that discharger to sufficiently dilute the discharge to meet water quality at the edge of the mixing zone. The two factors that affect dilution credit are ambient dilution flows and ambient constituent concentrations for which the dilution credit has been granted (i.e., assimilative capacity). Regarding flow, Appendix 5A, Section C of the Final EIR/EIS presents modeling results for flow at Vernalis (section C.62, beginning at page 5A-C1836). Table C-62-6 in Appendix 5A, Section C shows that there would be very little to no

change in San Joaquin River flow at Vernalis relative to the No Action Alternative. Additionally, as stated in Chapter 6, Surface Water, the average of highest flows simulated (flows with probability of exceedance of 10% or less) under Alternative 4A would remain similar (or show less than 1% change with respect to the channel capacity: 52,000 cfs) as compared to the flows under Existing Conditions. Hence, the basis for the statement that flows at Vernalis would be similar. Regarding water quality, the Final EIR/EIS concluded that the California WaterFix would have a less than significant impact to water quality in the region of the Delta where the City's wastewater discharge is located, including the San Joaquin River upstream of the Delta, which is the basis for determining available assimilative capacity for dilution credit. Also see Master Response 14, in Volume 2, Final EIR/EIS, regarding water quality impacts.

Comment Summary: South Delta Water Agency asserts that the FEIR/S fails to analyze how project impacts to southern Delta channel water EC affects agricultural users of that water. (South Delta Water Agency, comment 3)

Comment Consideration:

This comment asks for greater level of detail for the EC analysis than what was provided in the Final EIR/EIS, and claims that independent analysis shows effects on Delta water users. The comment suggests that the analysis of effects should have been done with "historic" EC as the baseline.

Despite commenter's expert's difference of opinion on certain assumptions used in the modeling, the modeling and assumptions within the modeling relied upon by the lead agencies is considered appropriate to support the lead agencies' analysis of environmental impacts associated with the Proposed Project. As stated in Appendix 5A, Section B.2, these assumptions were selected by the DWR management team for the EIR/EIS in coordination with the Bureau of Reclamation, Fish and Wildlife Service, and National Oceanic and Atmospheric Administration National Marine Fisheries Service. The assumptions were selected to satisfy CEQA and NEPA requirements. The basis for these assumptions is described in Appendix 3D of the EIR/EIS. The modeling assumptions presented by the commenter would result in a different project than the one selected for analysis by the lead agencies.

As has been explained in the Final EIR/EIS and past responses to comments from this commenter (RECIRC 2646-12), the difference between modeled EC for the alternatives and historical or existing conditions EC captures the effects of the alternatives along with other factors (e.g., climate change/sea level rise). Thus, in order to isolate the effects of climate change and sea level rise from those of the proposed project and its alternatives, DWR took into account the No Action Alternative, as discussed in the Final EIR/EIS. (See Master Response 1, Environmental Baselines.) Regarding the use of EC objectives, the basis for that approach is those are the thresholds at which the state has previously determined. Through adoption of those objectives, the AGR beneficial uses would be protected.

This comment does not raise any substantive new environmental information or analysis that would result in a new significant environmental impact.

Water Supply

Comment Summary: Contra Costa County Water Agency asserts that the proposed project increases exports during many dry months when the Delta ecosystem is most vulnerable. (Contra Costa County Water Agency, ATT 1)

Comment Consideration:

Figure 5 referenced by the commenter, does not disclose the months when these conditions occur. The SWP and CVP are within their water rights to export stored water releases as long as they meet the existing and proposed Delta regulatory requirements. The proposed operations criteria for the Alternative 4A include increased Old and Middle River restrictions that would constrain the south Delta exports in a manner similar to, or more stringent than, the current restrictions. Also, the proposed criteria include significant restrictions on the north Delta diversion in the way of the bypass flow criteria and the sweeping velocity requirements, which would constrain the exports at the north Delta diversion under low flow conditions. These intake-specific export restrictions would sufficiently restrict the Delta exports while protecting the Delta fisheries and habitat. Further, Alternative 4A will continue to meet the Delta outflow requirements under the existing regulations. The Final EIR/EIS and the BA sufficiently analyzed and disclosed the effects of the proposed Alternative 4A operations criteria.

The impact analysis was based upon evaluation of surface water conditions, including Delta outflow and Delta exports, for all water year types, as presented in Appendix 5A, Section C, of the Final EIR/EIS. For Alternative 4A, the proposed project, the model results presented in Appendix 5A, Section C, indicated that Total Delta Exports only approach 15,000 cfs during Wet water years. In Dry water years when Delta outflow declines below 7,500 cfs, the Total Delta Export ranges from 6,400 to 9,300 cfs; and in Critical water years when Delta outflow declines below 7,500 cfs, the Total Delta Export is less than 5,000 cfs.

This comment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/EIS.

Comment Summary: Sacramento Regional County Sanitation District (Regional San) asserts that the Final EIR/EIS should recognize Regional San's rights to its recycled wastewater. (Sacramento Regional County Sanitation District, comment 7)

Comment Consideration:

This comment is a request that the Final EIR/EIS clearly state that DWR or Reclamation will not rely on Regional San discharges for SWP/CVP obligations. Sac Regional discharge would be part of the DSA70 return flows in CalSim II, which are assumed to flow into the Delta upstream of the proposed north Delta intakes, under both NAA as well as California WaterFix Alternatives. As the changes in Sac Regional discharge could affect the Delta inflow under the NAA and the California WaterFix Alternatives in the same way, the incremental effects found for California WaterFix alternatives compared to the NAA and Existing Conditions are not affected by whether Sac Regional discharge changes. Also see Master Response 25, in Volume 2, Final EIR/EIS, regarding upstream reservoir effects.

This comment does not raise any substantive new environmental information or analysis that would result in a new significant environmental impact.

Comment Summary: San Juan Water District notes in the comment letters and materials submitted by the North State Water Alliance and the American River Water Agencies, the CALSIM II modeling performed by MBK Engineers shows that the dry year impacts to American River water supplies would be more severe and occur more frequently than the results obtained under the modified models that the lead agencies developed for this specific project (the "Proponents' Revised Modeling"). (San Juan Water District, comment 1)

Comment Consideration:

Unlike the CEQA Existing Conditions baseline, the No Action Alternative (NAA) includes climate change and sea level rise assumptions, as do all of the action alternatives. For this reason, DWR, as CEQA lead agency, exercised its discretion, as allowed by CEQA case law (Neighbors for Smart Rail v. Exposition Metro Line Construction Authority (2013) 57 Cal.4th 439. 454), to account for future conditions under the NAA in assessing the significance of impacts under CEOA. (See also Master Response 1, Environmental Baselines.) The projected changes associated with sea level rise and climate change would result in "dead pool" conditions in SWP and CVP reservoirs upstream of the Delta even without the action alternatives, and thus would not be "effects" of the alternatives. The "dead pool" conditions presented in the CALSIM II model results in the EIR/EIS are developed from calculated monthly average reservoir volumes. Because the model only calculates and reports SWP and CVP water operations at an average monthly basis, the model cannot simulate changes that occur on a weekly basis by water users and SWP and CVP operations. In addition, the model cannot make decisions that occur in real-time, such as drought operations during the ongoing drought. Instead the model includes average operating criteria for all dry periods, and does not reflect specific changes. The dead pool conditions occur in the No Action Alternative as compared to the Existing Conditions because the model includes changes in precipitation without making changes in water diversion patterns. The EIR/EIS analysis considers changes between the frequency of dead pool conditions under the alternatives and the No Action Alternative (both with the same climate change assumptions) to determine if the changes are adverse or beneficial. See Master Response 47, Drought and EIR/EIS Modeling, Volume 2, Final EIR/EIS, regarding the sufficiency of the modeling approach used for evaluation of the alternatives in capturing the drought-related effects. Despite commenter's expert's difference of opinion on certain assumptions used in the modeling, the modeling and assumptions within the modeling relied upon by the lead agencies is considered appropriate to support the lead agencies' analysis of environmental impacts associated with the Proposed Project.

This comment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/S.

Comment Summary: Solano County asserts that the Final EIR/EIS is inadequate because it presents modeling data for a number of different versions of the preferred alternative (Alternative 4A), but not the current version of the Project. (Solano County, comment 43)

Comment Consideration:

Commenter claims that the Delta outflow under Alternative 4A H3+ scenario does not fall within H3 and H4 scenarios. This is incorrect. Changes in long-term average Delta outflow under Alternative 4A (ELT) as compared to the No Action Alternative (ELT) and Existing Conditions are shown in Figures 5-37 through 5-39 and Tables 5-10 through 5-12. As shown in Figure 5F.4-27, the incremental changes in Delta exports under H3+ compared to the No Action Alternative are found to be within the H3 and H4 scenarios. Similarly Delta outflow results fall within the range of outflow changes expected under H3 and H4 compared to the No Action Alternative as shown in figure 5F.4-22, Final EIR/EIS. Similarly, the incremental changes in comparison to Existing Conditions would be the same, except for the added impacts from sea-level rise and climate change, as indicated by the comparison of Alternative 4A H3+ to Existing Conditions in Figures 5-37 through 5-29 and Tables 5-8 through 5-12. The Final EIR/EIS sufficiently analyzes and discloses the effects due to expected changes in Delta flows under Alternative 4A H3, H4 and H3+ scenarios. Also see Master Response 28, Volume 2, Final EIR/EIS, regarding operations.

This comment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/EIS.

Comment Summary: Solano County asserts that the modeling results presented in the Final EIR/EIS are not adequate to support a final determination by the lead agencies on a preferred Project alternative. (Solano County, comment 46)

Comment Consideration:

The commenter states the assumptions of Alternatives 1 – 9 presented in the Final EIR/EIS. Chapter 3 and Appendix 5A of the Final EIR/EIS lists the complete assumptions for the Existing Conditions, No Action Alternative and Alternatives 1 – 9.

The commenter is correct in that the Final EIR/EIS modeling was based on the 2010 version of the CalSim II, which was the latest available version at the initiation of the BDCP DEIR/EIS modeling, and continued forward in the RDEIR/SDEIS and the Final EIR/EIS for maintaining comparability with the baselines. Changing models in the middle of a series of model runs would have introduced inconsistencies, albeit relatively minor ones, into the ongoing analyses. The effects of the assumed approach of computing export-inflow ratio under some of the Alternatives were analyzed and disclosed sufficiently in the Final EIR/EIS. Similarly the effects of Alternatives 1 – 9 in comparison to the No Action Alternative and the Existing Conditions were sufficiently analyzed and disclosed in the Final EIR/EIS.

The commenter claims that the lead agencies questioned validity of the 2010 version of CalSim II used in the Final EIR/EIS. DWR does not make this claim, and in fact the impact analysis presented in the Final EIR/EIS was based on the modeling conducted using the 2010 version of

the CalSim II. Final EIR/EIS also included Appendix 5G, which shows that the incremental changes under Alternative 4A H3+ scenario when compared to the No Action Alternative remain similar with both 2010 and 2015 versions of the CalSim II proving that the modeling results based on the 2010 version of CalSim II were perfectly valid to be used for evaluating various Final EIR/EIS Alternatives. Although modeling results in comparison to Existing Conditions were not provided in Appendix 5G, the incremental changes would be similar with both versions of CalSim II, when compared to the respective versions of the Existing Condition CalSim II model, as well.

According to the Appendix 3D of the Final EIR/EIS: "In addition to relevant, well-defined, plans and projects that would likely occur by the year 2025 and 2060, in the absence of the project, the No Action Alternative for the EIR/EIS entails programs, projects, and policies included in Existing Conditions assumptions."

This comment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/EIS.

Comment Summary: South Delta Water Agency asserts DWR and USBR expressly admitted that the operations used in their modeling analyses would not reflect actual operation under certain conditions. (South Delta Water Agency, comment 4)

Comment Consideration:

This comment requests analysis of the effects of Temporary Urgency Change Petitions (TUCPs) on actual operations and concludes the analysis in the Final EIR/EIS is inadequate because California WaterFix operations do not assume 20% of the years would be operated under relaxed TUCP conditions. The commenter raised this issue in its comments on the RDEIR/SDEIS (RECIRC 2646-13).

The EIR/EIS and Biological Assessment are based upon a wide range of hydrologic conditions over an 82-year long hydrologic period with extended wet periods and dry/critical dry periods. The analyses were not conducted to evaluate operations during short-term emergency situations, such as during the recent drought. During the recent drought when TUCPs were submitted to the SWRCB, separate NEPA and CEQA analyses and separate ESA consultations were conducted and submitted by DWR and Reclamation to the SWRCB. The same procedure would occur if future TUCPs were submitted during future emergency situations. Therefore, this EIR/EIS and the associated Biological Assessment only addressed non-emergency operations of the SWP and CVP. See Master Response 47, Drought and EIR/EIS Modeling, regarding the sufficiency of the modeling approach used for evaluation of the alternatives in capturing the drought-related effects.

This comment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/EIS.

Comment Summary: American River Water Agencies assert that information available in the electronic modeling files that support the Final EIR/EIS show that implementation of the

California WaterFix could cause significant drawdowns of Folsom Reservoir storage that are not depicted anywhere in the Final EIR/EIS. (American River Water Agencies, comment 5)

Comment Consideration:

This commenter's issues insofar as the model used for the analysis (CALSIM II) have been addressed multiple times in response to previously-made comments on the Draft EIR/EIS as well as the RDEIR/SDEIS. As discussed in the Final EIR/EIS, the CALSIM II model is a monthly model that does not reflect the allow for flexibility that operators, reacting to real-time conditions, employ in managing the CVP/SWP system in the operational rules during extreme events, including responding to low storage volumes in Folsom Lake during consecutive drought years. The CALSIM II model operations do analyze a range of conditions based upon a repeat of historical hydrology that includes consecutive drought years that occurred in the 1920s, 1970s, and 1980s/1990s. The model results are presented in exceedance curves and in water year tables in Appendix 5A, Section C of the Final EIR/EIS.

Despite commenter's expert's difference of opinion on certain assumptions used in the modeling, the modeling and assumptions within the modeling relied upon by the lead agencies reflect their own expertise and is considered appropriate to support the lead agencies' analysis of environmental impacts associated with the Proposed Project. As stated in Appendix 5A, Section B.2, these assumptions were selected by the DWR management team for the EIR/EIS in coordination with the Bureau of Reclamation, Fish and Wildlife Service, and National Oceanic and Atmospheric Administration National Marine Fisheries Service. The assumptions were selected to satisfy CEQA and NEPA requirements. The basis for these assumptions is described in Appendix 3D of the EIR/EIS. The modeling assumptions presented by the commenter would result in a different project than the one selected for analysis by the lead agencies.

Commenter previously voiced concerns regarding Folsom Reservoir operations in Comments RECIRC 2588-6 and 2588-8. The lead agencies responded to these comments within the Final EIR/EIS. The Final EIR/EIS recognizes that there are ongoing and future studies to address the need for flexibility in reoperation of upstream reservoirs in the American River watershed and Folsom Lake related to balancing the need to maintain available volume for flood management with the projected changes in snowfall and rainfall occurrence in the future with climate change. As is consistent with CEQA and NEPA, these ongoing and future studies will require separate engineering and environmental documentation, as well as regulatory approval from the U.S. Army Corps of Engineers and State Water Resources Control Board; therefore, inclusion of potential outcomes of these studies would be considered to be too speculative to be included in the No Action Alternative or any of the action alternatives. For purposes of a comparative analysis, the CALSIM model used the same assumed reservoir operations rules for the No Action Alternative or all of the action alternatives; therefore, the comparison between action alternatives and the No Action Alternative result in changes related to the alternative implementation only. This focus on the No Action future condition as a factor in assessing the significance of impacts under CEQA is authorized by CEQA case law. (See Neighbors for Smart Rail v. Exposition Metro Line Construction Authority (2013) 57 Cal.4th 439. 454; see also Master Response 1, Environmental Baselines.) The analysis provided

by the commenter was reviewed, and it indicates that the two occurrences of reduction in Folsom Lake storage out of the 984 months simulated in the model were caused by a CALSIM II logic decision in a single-month based on the mathematical logic in the model; such an outcome is not necessarily reflective of daily operational decisions that occurs in real-time operations.

It also should be recognized that the frequency of low storage elevations in Folsom Lake increases from 3 out of 82 years under the Existing Conditions (CEQA baseline) to 6 times out of 82 years for the No Action Alternative (ELT) and in 9 times out of 82 years for the No Action Alternative (LLT). This occurs due to the sea level rise and climate change assumptions for the No Action Alternative (ELT and LLT), including the assumed reduction in snow pack with an increase in rainfall volume, and an additional 177,000 acre-feet/year of water use by senior water rights and municipal water users in the American River watershed as compared to the assumptions for the Existing Conditions (which are based on 2005 CALSIM II model assumptions).

This comment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/EIS. The Final EIR/EIS complies with both CEQA and NEPA.

Comment Summary: The behavior pattern by state and federal water project operators exhibit an overall management strategy first articulated in a DWR drought report from May 1976. (Environmental Water Caucus, comment 39)

Comment Consideration:

This is a comment on how SWP/CVP operations occur. The hydrologic analysis in the EIR/EIS considered operations during drought periods, including conditions similar to the 1928-1934, 1976-1977, and 1987-1992 droughts. The CALSIM II model was operated in a manner to meet senior water rights and conditions required by permits issued by the State Water Resources Control Board, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and State Department of Fish and Wildlife prior to delivery of SWP and CVP water contract amounts. All of these permits were either initiated or modified following the 1976-1977 drought to address environmental conditions that had not been identified or analyzed in May 1976, including the Biological Opinion issued by the National Marine Fisheries Service, which includes minimum storage carryover requirements in some CVP reservoirs to support cold water criteria in the rivers downstream of the reservoirs.

This comment does not raise any substantive new environmental information or analysis that was not previously addressed in the Final EIR/EIS.

Comment Summary: North State Water Alliance asserts that relying on faulty and inadequate modeling for its sole analysis of the project's water supply impacts, the Final EIR/EIS understates those impacts and fails to fulfill the disclosure obligations imposed by CEQA and NEPA. (North State Water Alliance, comment 22)

Comment Consideration:

This section contains the commenter's view of potential insufficiencies in modeling and analysis in the Final EIR/S.

It appears that this comment was based on the MBK January 2014 review of BDCP modeling. BDCP EIR/EIS modeling of Alternative 4 H1 through H4 was based on a No Action Alternative model developed in 2010. Models always evolve as the understanding of the system and operations improves and the assumptions are better defined. MBK's independent modeling of the No Action Alternative included different assumptions than the BDCP EIR/EIS No Action Alternative, which was the basis for their independent modeling of Alternative 4. Furthermore, MBK's independent modeling of the Alternative 4 included different assumptions than the BDCP EIR/EIS Alternative 4 H1 through H4. Some of the differences in Alternative 4 assumptions include May – Oct north Delta diversion bypass flow operations, Delta Cross Channel gate operations, Old and Middle River flow and south Delta export operations, and discretionary summer export operations. Different assumptions in the BDCP EIR/EIS. See Section 4, State Water Board Change Petition Process, Developments after Publication of the Proposed Final Environmental Impact Report for a discussion on the MBK modeling.

Despite commenter's expert's difference of opinion on certain assumptions used in the modeling, the modeling and assumptions within the modeling relied upon by the lead agencies reflect their own expertise and is considered appropriate to support the lead agencies' analysis of environmental impacts associated with the Proposed Project.

This comment does not raise any substantive new environmental information or analysis that would result in a new significant environmental impact.

Comment Summary: North State Water Alliance asserts that the California WaterFix Final EIR/EIS Model changes reservoir balancing criteria so that less stored water is conveyed from NOD reservoirs to San Luis Reservoir during summer months. (North State Water Alliance, ATT4)

Comment Consideration:

Contrary to the proposed assumptions for the California WaterFix described in the Final EIR/EIS and the Biological Assessment (BA), the commenter incorrectly claims that the upstream operating criteria will change under the California WaterFix. As described in the BA and the Final EIR/EIS, even with the California WaterFix, the upstream CVP/SWP reservoirs would be operated to meet the existing regulatory criteria. California WaterFix does not propose any changes to the upstream operational criteria with operator's statements are misleading and confuse upstream operational criteria with operator's discretionary decision about balancing north and south storage. Balancing of north and south storage reflects the CVP-SWP operators' tolerance for risk. More upstream storage allows the operators to manage the system better and minimizes overall risk. The Final EIR/EIS and BA California WaterFix modeling depicts same level of risk tolerance between the No action Alternative and the California WaterFix Alternatives.

The Final EIR/EIS and BA California WaterFix modeling balances the reservoirs north and south of the Delta, recognizing the operational flexibility offered by the California WaterFix relative to the No Action Alternative. Final EIR/EIS and BA modeling recognizes California WaterFix's operational flexibility to export surplus water in winter and spring and reduces reliance on the stored water releases for the south-of-Delta exports in late-summer and fall, unlike the No Action Alternative. The California WaterFix operations modeled in the Final EIR/EIS and the BA represent the upstream storage flexibility that can be achieved with California WaterFix.

This topic is further addressed in the SWRCB California WaterFix part 1 rebuttal hearing exhibit DWR-86. See Section 4, State Water Board Change Petition Process, Developments after Publication of the Proposed Final Environmental Impact Report, for discussion on State Water Recourses Control Board hearing materials.

Despite commenter's expert's difference of opinion on certain assumptions used in the modeling, the modeling and assumptions within the modeling relied upon by the lead agencies is considered appropriate to support the lead agencies' analysis of environmental impacts associated with the Proposed Project. As stated in Appendix 5A, Section B.2, these assumptions were selected by the DWR management team for the EIR/EIS in coordination with the Bureau of Reclamation, Fish and Wildlife Service, and National Oceanic and Atmospheric Administration National Marine Fisheries Service. The assumptions were selected to satisfy CEQA and NEPA requirements. The basis for these assumptions is described in Appendix 3D of the EIR/EIS. The modeling assumptions presented by the commenter would result in a different project than the one selected for analysis by the lead agencies. See Master Response 25, Volume 2, Final EIR/EIS, regarding upstream reservoir effects.

Comment Summary: North State Water Alliance asserts that as stated in Master response 28, page 1-262, Line 7-22 (quoted below), DWR and USBR performed a "Boundary Analysis" as a means to attempt to represent a potential range of operations. (North State Water Alliance, ATT4)

Comment Consideration:

As described in SWRCB California WaterFix part 1 rebuttal hearing exhibit DWR-86, the commenter misunderstood the purpose of the boundary analysis performed by DWR and USBR. The purpose of the boundary analysis is to demonstrate to the State Water Board that the California WaterFix offers enough flexibility to operate CVP-SWP without impacting other legal water users under a broad range of operations criteria that may occur through adaptive management. The purpose of the boundary analysis was not to perform a tradeoff analysis or to present hypothetical extreme possibilities of CVP-SWP operations with the California WaterFix, as suggested by the commenter. See Section 4, State Water Board Change Petition Process, Developments after Publication of the Proposed Final Environmental Impact Report, for discussion on State Water Recourses Control Board hearing materials.

The boundary analysis included operational scenarios with varying level of Delta export restrictions and/or Delta outflow requirements in addition to the proposed North Delta

Diversion. The variations covered the initial operational range represented by H3 and H4 scenarios, and two additional scenarios Boundary 1 and Boundary 2, which are a reasonable representation of potential future changes resulting from the adaptive management. See Master Response 33, Volume 2, Final EIR/EIS, regarding adaptive management.

Contrary to the commenter's claim, the boundary analysis modeling assumed consistent discretionary decisions in the model to depict same level of flexibility for the upstream carryover storage conditions across the scenarios.

Comment Summary: North State Water Alliance asserts that the analysis for the California WaterFix Final EIR/EIS was performed in a manner that attempts to decouple the proposed project (tunnels) from integrated operations of the CVP and SWP. (North State Water Alliance, ATT4)

Comment Consideration:

The Final EIR/EIS California WaterFix modeling recognizes the flexibility offered by the proposed north Delta diversion in managing the CVP-SWP operations. Contrary to the commenter's claim, FINAL EIR/EIS California WaterFix modeling fully integrates the north Delta diversion with CVP-SWP. The commenter speculates that the CVP-SWP upstream storage would be used more aggressively to benefit south of Delta contractors. However, the CVP-SWP operators would have same set of goals and constraints (such as the RPAs) as today as far as operating upstream storage. California WaterFix provides operational flexibility to better manage upstream storage while relying on surplus water for exports, unlike the No Action Alternative.

As described in SWRCB California WaterFix part 1 rebuttal hearing exhibits DWR-86 and DOI-33, the independent modeling referenced in this comment did not use standard systematic approach that is commonly used in a comparative planning analysis. Instead the independent modeling relied upon unreasonable discretionary assumptions with unrealistic foresight, and flawed modeling approaches that included unusual amount of manual tweaking of inputs, dissimilarly for the California WaterFix and the No Action Alternative simulations. This resulted in an unfair and biased results for California WaterFix in comparison with the No Action Alternative.

See Section 4, State Water Board Change Petition Process, Developments after Publication of the Proposed Final Environmental Impact Report, for discussion on State Water Recourses Control Board hearing materials.

3.2 Comments Received after the Close of the Federal Register Notice Period

As previously discussed in Section 3.1 above, on December 30, 2016, Reclamation, in coordination with DWR, issued a NOA (see 81 Federal Register 251 (30 December 2016) pp. 96485-96486), as required by the Council on Environmental Quality's (CEQ's) NEPA regulations (see 40 CFR Sections 1506.9 and 1506.10) stating that the Bay Delta Conservation Plan/California WaterFix Final Environmental Impact Report/Environmental Impact Statement

(EIR/EIS) was made available to the public on December 22, 2016. DWR utilized the notice as an additional method for furthering the goals of public outreach. Several commenters requested an extension to the 30-day Federal Register notice period and were referred to the signed joint letter from Reclamation and DWR dated January 25, 2017 (USBR/DWR denial of Extension requests to Federal Register Notice Period). Because Reclamation and DWR believe sufficient opportunity has already been provided in the proposed project's environmental review process, because DWR has gone beyond the CEQA noticing requirements for a Final EIR, and because it is in the public interest in having the agencies proceed in an orderly fashion to the final steps in CEQA and NEPA decision-making, Reclamation did not extend the federal register notice period under NEPA beyond January 30, 2017. Under CEQA, there is no requirement that DWR respond to comments received after issuance of the Final EIR/EIS. As stated previously, the end of the Federal Register notice period was intended by DWR to close the period that DWR would consider any grounds for noncompliance with CEQA, CA Public Resources Code Section 21177(a).

In June of 2017, the State announced its goal of releasing a Notice of Determination on the Project, California WaterFix. Shortly after this time, while DWR was nearing completion in preparation of the Notice of Determination and project approval, DWR received several comment letters and attachments totaling more than 10,000 pages. This was considerably after the close of the Federal Register notice period, in June and July of 2017. DWR, in an effort to be inclusive, attempted to consider comments received during this time and present comment letter consideration in a manner similar to the consideration process described in Section 3.1. However, the consideration of these late comments does not indicate DWR's waiver of the fact that these comment letters are outside of the appropriate period for DWR to consider any grounds for noncompliance with CEQA.

In an effort to finalize the decision documents for certification, DWR stopped considering any comment letters received approximately 24 hours prior to certification.

Comment consideration tables for comment letters and attachments received after the close of the Federal Register notice period are presented in Table 3-3, to the extent feasible given the time constraints. No comments or attachments received raised significant new environmental information that triggers recirculation under Public Resources Code section 21092.1 and CEQA Guidelines section 15088.5.

Many of the comment letters and attachments received were from organizations participating in the State Water Resources Control Board's water rights hearing for the California WaterFix Petition for a Change in Point of Diversion, which is a separate process. The vast majority of materials received were merely direct copies of rebuttal, sur-rebuttal and transcripts presented at the water rights hearing and in many cases commenters did not call attention to relevant information within the attached materials. Section 4 below discusses the State Water Resources Control Board's water rights hearing process for the California WaterFix Petition for a Change in Point of Diversion as it relates to the Final EIR/EIS.

Comment letters were also received during this time period that related to the release of the Final Biological Opinions for California WaterFix by the federal fish and wildlife agencies. For additional detail on the Final Biological Opinions as they relate to the Final EIR/EIS please refer to Section 5 below.

The following organizations (governmental and non-governmental) submitted comments considerably after the Federal Register notice period. Note that letters received from member of the public are also presented in Table 3-3, to the extent feasible given the time constraints.

Governmental and Non-Governmental Organizations

American River Water AgenciesCalifornia Water ResearchCity of BrentwoodCity of SacramentoCity of SacramentoCity of StocktonDelta Flood Control GroupEast Bay Municipal Utility DistrictNorth Delta Water AgencyNorth State Water AllianceSacramento CountySave the California Delta AllianceSacramento Valley Water UsersTehama-Colusa Canal Authority

3.3 Other Relevant Information after Publication of the Proposed Final EIR/EIS

This subsection lists potentially relevant projects/concepts that have happened or have been proposed since December 22, 2016 when the Final EIR/EIS was posted through just prior to certification in July 2017. Although they have happened or are going to in the future, they are not relevant, or are no longer relevant, to the certification to the Final EIR. DWR has considered all projects/concepts listed below and has assessed that they do not affect any conclusions made in the Final EIR, the Findings and Statement of Overriding Considerations, or the approval of the project. Any relevant information pertaining to the State Water Board Change Point of Diversion Hearing and the Endangered Species Act Consultations can be found below in Section 4 and 5, respectively.

Public Law No: 114-322 Water Infrastructure Improvements for the Nation (WIIN) Act, Subtitle J – California Water

This bill went into effect late 2016. Section 4001 specifies that the Secretary of the Interior and Secretary of Commerce shall provide the maximum quantity of water supplies practicable to Central Valley Project (CVP) agricultural, municipal and industrial contractors, water service or

repayment contractors, water rights settlement contractors, exchange contractors, refuge contractors, and State Water Project contractors, by approving, in accordance with applicable Federal and State laws (including regulations), operations or temporary projects to provide additional water supplies as quickly as possible, based on available information. This directive that two federal cabinet Secretaries provide to various CVP contractors the maximum quantities of CVP water that are "practicable" should not, as a practical matter, materially affect exports under the State Water Project and CVP under the California WaterFix, as the vague statutory command does not alter existing regulatory constraints under the Endangered Species Act, the Clean Water Act, the California Endangered Species Act, or the Porter-Cologne Water Quality Control Act. None of those statutory schemes were altered by the new federal legislation. Nor were existing Biological Opinions or the Water Quality Control Plan For The Sacramento River And San Joaquin River Basins directly affected. In short, the new legislation should not change anticipated operations and creates no need to revisit modeling assumptions that are described in the Final EIR/EIS for the proposed project. The State and Federal Water Projects will continue to abide by regulations set forth by the most current restrictions.

Federal Administration Change

President Trump took office in January 2017, allowing him to choose who would fill his Executive Cabinet that would steer the nation under his direction. Newly appointed Secretary of the Interior and Secretary of Commerce, Ryan Zinke and Wilbur Ross will head these departments, in which many regulatory agencies fall under (*i.e.*, USBR, NMFS, USFWS). Although this shift in authority has taken place under the new administration, it will not change the federal administration's approach to the California WaterFix, as reflected by the U.S. Bureau of Reclamation having no change in its approach.

Oroville Dam Auxiliary Spillway Damaged

After a series of winter storms, the auxiliary spillway of the Oroville Dam was used to keep up with rising reservoir levels. After the auxiliary spillway suffered erosion damage, the emergency spillway was triggered to release more water for flood safety concerns. The damage caused has affected flood control measures, as well as the Feather River downstream of the spillway. Repairing the Oroville auxiliary spillway is now one of the Department's top priorities, it does not change the necessity of WaterFix and the objectives it aims to meet.

2016/2017 record rainfall

Enduring years of drought conditions, the California landscape was unable to keep up with the vast amount of precipitation that it received during the 2016/2017 winter. A series of storms caused by a phenomenon known as a pineapple express brought much-needed rain, but also caused major structural damage and flooding in certain parts of the state. Modeling assumptions and results that are described in the Final EIR/EIS will not be affected by the substantial rainfall that the State received during this most recent winter. The various models used to predict environmental impacts of the California WaterFix and various other action alternatives all use hydrological records that account for occasional very wet years, such as the winter of 2016/2017.

New trawl data capturing an abundance of Delta Smelt (100+)

As part of USFWS' Delta Juvenile Fish Monitoring Program, the Enhanced Delta Smelt Monitoring Program has caught 141 Delta Smelt. Although the Delta Smelt population is in decline, these efforts have shown an abundance that has not been previously seen in recent years by other efforts from USFWS and CDFW. This increase in catch data of Delta Smelt will not change any baseline assumptions or impact conclusions regarding fisheries impacts that are described in Chapter 11 of the Final EIR/EIS.

SWRCB adoption of Climate Change resolutions

In early March 2017, the SWRCB adopted a resolution requiring a proactive approach to climate change in all Board actions, including drinking water regulation, water quality protection, and financial assistance. This action builds on a resolution adopted by the Board in 2007. Although the SWRCB is taking a more proactive approach to address climate change, this will not affect any information in Chapter 29 of the Final EIR/EIS.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) empowers local agencies to adopt groundwater management plans that are tailored to the resources and needs of their communities. The act requires, by June 30, 2017, the formation of locally-controlled groundwater sustainability agencies (GSAs) in the State's high- and medium-priority groundwater basins and subbasins. On February 21, 2017, local agencies forming GSAs were required to submit all applicable information to DWR using the SGMA Portal – GSA Formation Notification System. Also, local agencies were required to submit an Alternative (to a Groundwater Sustainability Plan) to DWR by January 1, 2017 and will be required to do so every five years thereafter. With drought conditions becoming an ongoing issue that the State must adapt to, it will not change the necessity of the California Waterfix to provide a more reliable water supply and protecting, restoring, and enhancing the Delta ecosystem. If, over time, the adoption of Groundwater Sustainability Plans causes affected regions to reduce their use of groundwater, such a change could increase the demand for SWP and CVP exports from the Delta. Because increased exports would only be possible to the extent that they would not be foreclosed by the physical and regulatory constraints in effect at the time, it is by no means clear that increased exports would be permissible, and any effects that might result therefrom are therefore remote and speculative at this time.

Amendments to the Delta Plan by the Delta Stewardship Council

The Delta Plan adopted by the Council in May 2013 anticipated the need for periodic reviews and updates in response to changing circumstances and conditions in the Delta unrelated to the requirement in Water Code section 85300(c) that the Council review the entire Delta Plan no less than once every five years. Recently, two public workshops were conducted to gather comments on a Delta Plan draft amendment concerning conveyance, storage, and operations. DWR will fully comply with the Delta Reform Act, and it will continue to monitor future Delta Plan amendments. DWR may determine that California WaterFix is a covered action consistent with the Delta Plan and regulations, and in such event, would file a certification of consistency with the Council. As the Delta Plan evolves, this will not affect the way in which DWR would file a consistency determination.

Central Valley Flood Management Planning Update

The 2017 Central Valley Flood Protection Plan (CVFPP) Update was released for public comment on December 30, 2016. In mid-2017, it will be submitted to the Central Valley Flood Protection Board for adoption. The CVFPP is descriptive, not decisional; it is not a funding or permitting decision for specific projects. The 2017 Update includes recommendations on investments and policies to support comprehensive flood risk management actions locally, regionally, and system-wide, rather than promoting specific projects. As described in Appendix 6A of the Final EIR/EIS, WaterFix does not include a commitment to improve the current levee system except where the project explicitly includes levees in the project construction. Any modifications to Delta levees and the flood control system, as a result of constructing the project, would be fully mitigated.

Delta Independent Science Board's (Delta ISB) review of the Final EIR/EIS

The Delta ISB, separate from the Delta Stewardship Council, conducted a review of the WaterFix Final EIR/EIS. The Final version of the review was released to the public on June 19, 2017.

The review focuses on scientific information presented in the Final EIR/EIS, not whether the Final EIR/EIS satisfied the requirements of CEQA or NEPA. Much of the review discusses perceived missing content that is outside the scope of the CEQA/NEPA process. The review also includes commentary on the CEQA/NEPA process as a whole and not specifically the California WaterFix Final EIR/EIS. Included below is a summary of the six main sections discussed in the ISB review. No information in the ISB's Draft review raised significant new environmental information that triggers recirculation under Public Resources Code section 21092.1 and CEQA Guidelines section 15088.5.

- Adaptive management
 - The Delta ISB stated that '[a]lthough the treatment of adaptive management and monitoring in the Final version is improved over earlier drafts, it remains weak on details, particularly in relation to the extensive and detailed coverage of other topics in the Final version." Although an adaptive management program is not required under CEQA or NEPA, DWR welcomes the ISB's input on the continuing Adaptive Management and Monitoring Program (AMMP)¹ that is being implemented through a multi-agency effort to combine the California WaterFix, State Water Project and CVP AMMP needs in a comprehensive, integrated program. As such, DWR and Reclamation have disclosed the progress of the AMMP and its intended objectives

¹ Note that CA WaterFix Biological Opinions and draft 2081(b) ITP include an updated description of the Adaptive Management Program (AMP), which further expands on the implementation structure, agency roles and responsibilities, and decision-making processes. Nevertheless, the AMMP in the Final EIR/EIS and the AMP in the Biological Opinions/ draft 2081(b) ITP are both consistent with the overarching goals of using the best available science and information to minimize effects to species, while considering effects to water supply reliability. See Section 5.3 below for more information on the AMP.

and content at the time of the writing of the Final EIR/EIS. A summary of the AMMP is provided in Master Response 33 of this Final EIR/EIS and response to ISB's letter 2546, comment 61 is provided in the individual responses to comments.

- Informative summaries and comparisons
 - The Delta ISB stated "the Final EIR/EIS resembles its predecessors in failing to communicate clearly the principal findings and uncertainties of an enormous report." The Final EIR/EIS provides additional summary comparison of alternatives effects at the beginning of each resource chapter. The alternatives comparisons focus on some of the more important resource effects of the alternatives to give the reader a snapshot of the detailed results provided in the impact discussion for each alternative. For each alternative comparison summary table, the impact value is provided, including color coding indicating the relative level of significance of the impact before mitigation is applied, as well as significance conclusions of each impact assuming implementation of recommended mitigation measures. The alternative summary comparisons are provided in addition to the impact summary table and text provided in the Executive Summary. The Final EIR/EIS also provides information about some of the most important resource topics in Volume II, Master Responses.
- Levee and earthquake analysis
 - The Delta ISB stated that, "[d]espite excellence in its [added] Appendix 6A, the Final 0 EIR/EIS still falls short in assessing impacts to Delta levees, and it has also become out of date on seismic threats to the levees." Additional seismicity references raised by the commenter were reviewed in light of the analysis contained in the Geology and Seismicity chapter of the Final EIR/EIS. While this information is more recent in terms of seismicity and ground motion attenuation data in the Plan Area, the information contained within these studies would not substantively change the Final EIR/EIS seismicity impact analysis. In particular, the references raised by the commenter largely pertain to the fact that the assumed amount of ground motion attenuation from shaking sources toward the Plan Area may be less than that used in previous studies, at least with respect to faults in the eastern North Bay (e.g., the Rodgers Creek and Green Valley Faults), due to differences in crustal characteristics. Consequently, previous ground motion predictions may have overestimated the peak ground acceleration and peak ground velocity values that may occur in the Delta, at least for some faults. However, because of differences in crustal characteristics throughout the region, the amount of ground motion attenuation from other seismic sources in the region may remain valid, such that there is a substantial earthquake ground shaking hazard in the Plan Area. The analysis already assumes that the potential for seismically induced groundshaking could damage conveyance facilities, and as a result, requires that safety and facility construction measures be employed for conveyance facilities as detailed in Chapter 9, Geology and Seismicity. The additional information in these references would not alter any of the conclusions within the analysis in the Final EIR/EIS; nor would it

result in any new significant seismicity impacts, substantially more severe impacts, or require new or different mitigation measures.

- Potential uncertainties including SGMA
 - The Delta ISB stated that "[r]eductions in groundwater overdraft as part of the SGMA will likely increase demand for water from the Delta, the primary and historical source of supplemental water for the southern Central Valley, the state's primary overdraft area. Uncertainties in the interaction of SGMA implementation with Delta alternatives are likely to significantly affect the relative implementation, water supply, and environmental performance of alternatives." If, over time, the adoption of Groundwater Sustainability Plans causes affected regions to reduce their use of groundwater, such a change could increase the demand for SWP and CVP exports from the Delta. Because increased exports would only be possible to the extent that they would not be foreclosed by the physical and regulatory constraints in effect at the time, it is by no means clear that increased exports would be permissible, and any effects that might result therefrom are therefore remote and speculative at this time.
- San Joaquin water reliability
 - The Delta ISB requested a discussion of the environmental effects of water use south of the Delta. Such an analysis is outside the scope of the Final EIR/EIS and is too speculative as to analyze under CEQA/NEPA. The analysis of potential future independent land use decisions such as crops planted, fertilizer and pesticides used and agricultural runoff are each regulated by the agencies and counties where the independent actions were to take place if they did.
- Restoration and mitigation
 - The Delta ISB recommended that "field experimentation to restore wetlands, testing alternative methods in space and over time. An adaptive restoration approach can reduce uncertainty and explain why outcomes differ." For the purposes of CEQA/NEPA, the Final EIR/EIS identifies acreages of mitigation required to offset project impacts. The specific nature of restoration to be undertaken as mitigation (*i.e.*, mitigation banks, design, experimentation, etc.) cannot be determined at this time but will be subsequently determined in consultation with the pertinent regulatory agencies. As appropriate, project-level implementation of restoration actions would be subject to additional environmental review. During restoration design and implementation the Delta Stewardship Council Science Program and Independent Science Board are welcome to provide input and recommendations to be considered in development.

Central Valley Regional Water Quality Control Board posted the Fiscal Year 2016-2017 Delta Program Fact Sheet

The fact sheet summarizes the fiscal year 2016-2017 priority activities of the Delta Water Quality Program. The program's goals are to coordinate with the State Water Resources

Control Board and the San Francisco Bay Regional Water Quality Control Board about planning and permits that affect Delta water quality and to implement the 2014 Delta Strategic Work Plan. None of the priority activities call into question the analysis included in the BDCP/California WaterFix EIR/EIS.

State Water Resources Control Board (SWRCB) Update of the Bay-Delta Water Quality Control Plan

The State Water Resources Control Board (State Water Board) is responsible for developing and modifying the Bay-Delta Water Quality Control Plan which establishes water quality control measures needed to provide reasonable protection of beneficial uses of water in the Bay-Delta Watershed. The State Water Board is in the process of developing and implementing updates to the Bay-Delta Plan and flow objectives for priority tributaries to the Delta to protect beneficial uses in the Bay-Delta watershed. Phase 1 of this work involves updating San Joaquin River flow and southern Delta water quality requirements included in the Bay-Delta Plan. Phase 2 involves other comprehensive changes to the Bay-Delta Plan to protect beneficial uses not addressed in Phase 1 (Delta outflows, Sacramento River inflows, Suisun Marsh salinity, Delta Cross Channel Gate closure, export limits, reverse flows). Phase 3 involves changes to water rights and other measures to implement changes to the Bay-Delta Plan from Phases 1 and 2. Phase 4 involves developing and implementing flow objectives for priority Delta tributaries outside of the Bay-Delta Plan updates. This update does not affect any water quality impacts addressed in the Final EIR/EIS. In fact, to the extent that, as anticipated, the State Water Board will require water users other than DWR and Reclamation to contribute additional water to Delta outflows, the net effect of the planning process will be beneficial to Delta fisheries. DWR will comply with any and all regulations set by the State Water Board.

Re-initiation of Consultation of the Long-Term Operations of the CVP and SWP BiOps

Currently, DWR and Reclamation have reinitiated consultation with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries (NMFS) regarding the 2008 and 2009 Biological Opinions that were issued for the long-term operations of the Central Valley Project and State Water Project. This process will not affect anything that is addressed in the Final EIR/EIS. WaterFix has undergone its own Section 7 process and its own biological opinions have been issued by NMFS and USFWS. Operation of the two water projects will still comply with the existing biological opinions until the 2008 and 2009 BiOps are amended or when WaterFix is approved, built, and operated based on the new biological opinions. Historically, USFWS and NMFS have reinitiated system-wide Section 7 consultations from time to time, and Reclamation and DWR have always responded by modifying their operations as necessary to maintain compliance with endangered species laws.

Section 106 Programmatic Agreement for the California WaterFix has been signed by the State Historic Preservation Office

As of March 21, 2017, the Programmatic Agreement between USACE and State Historic Preservation Office (SHPO) has been signed and fully executed for the California WaterFix. Section 106 compliance is necessary for the construction of the new North Delta Diversions and conveyance facilities of the project under the National Historic Preservation Act (NHPA). SHPO advises and assists Federal and State agencies in carrying out their historic preservation responsibilities in cooperation with the Advisory Council on Historic Preservation (ACHP). The language within the Programmatic Agreement is consistent with the process and conclusions in the Final EIR/EIS, specifically Chapter 18 *Cultural Resources*. DWR will comply with any and all of its responsibilities and stipulations laid out in the Programmatic Agreement as an invited signatory to the Programmatic Agreement. The Programmatic Historic Properties Treatment Plan was being drafted as of writing this document.

Additional Details of Project Design

As explained in Master Response 2, *Project- and Program-Level Analysis*, neither CEQA nor NEPA requires lead agencies to wait to commence (or to complete) environmental review until proposed projects or actions have reached advanced stages of design and engineering. Thus, the CEQA Guidelines command that that "[t]he description of the project . . . should not supply extensive detail beyond that needed for evaluation and review of the environmental impact." (State CEQA Guidelines Section 15142, subd. (a).) Courts have even recognized the danger of an EIR including too much detail: "engineered drawings may well supply 'extensive detail beyond that needed for evaluation and review of the environmental impact' in violation of Guidelines section 15124." (*Dry Creek Citizens Coalition v. County of Tulare* (1999) 70 Cal.App.4th 20, 36.) Indeed, if lead agencies were required to hold off on undertaking environmental review until project design and engineering had reached advanced stages, the projects at issue would likely gain irreversible political or economic momentum towards approval and completion even before environmental review started, as project proponents would be very hesitant to abandon their projects after investing large sums of money in advanced engineering and design, regardless of their environmental effects.

Under NEPA's "rule of reason," an EIS must contain "a reasonably thorough discussion of the significant aspects of the probable environmental consequences." (*State of Cal. v. Block* (9th Cir. 1982) 690 F.2d 753, 761; *Salmon River Concerned Citizens v. Robertson* (9th Cir. 1994) 32 F.3d 1346, 1356.) This standard, however, requires a "pragmatic judgment" as to whether the form and content of an EIS "fosters informed decision making and informed public participation." (*State of Cal. v. Block* (9th Cir. 1982) 690 F.2d 753, 761; *Churchill County v. Norton* (9th Cir. 2001) 276 F.3d 1060, 1071.)

Here, as mentioned in Master Response 5, *BDCP*, at the time of preparation of the Draft BDCP (*i.e.*, in 2013), the water conveyance facility design was approximately ten percent complete, which is a level of design typical of infrastructure projects at the public draft stage of the environmental review process.

Although a ten percent design is sufficient for purposes of environmental review, it remains possible that, as design, engineering, and permitting processes proceed in the future, additional refinements in design or engineering could affect the extent to which, and how, the Project will affect various environmental resources. Although such refinements would typically be expected to result in *reduced* environmental effects, it is also possible that already-identified environmental effects could become worse. To the extent that design changes are developed in response to permitting requirements (*e.g.*, the need for 404 permits from the United States Army Corps of Engineers), such changes are likely to be environmentally beneficial (*e.g.*,

reduced effects on wetlands). It is possible, though, that changes made to reduce environmental effects of one kind could worsen environmental effects of another kind.

In any event, both CEQA and NEPA anticipate that proposed projects or major federal actions can evolve over time, and each regulatory scheme includes special rules governing such situations. CEQA and the CEQA Guidelines require the preparation of subsequent or supplemental EIRs where project changes or changed circumstances contribute to worsened environmental effects. (State CEQA Guidelines Sections 15162 & 15163.) Where the original environmental document for a project is an EIR, an addendum generally may suffice in the absence of new significant environmental effects or substantial increases in the severity of previously-identified significant effects. (State CEQA Guidelines Section 15164.)

Under the NEPA regulations, similarly, a supplement to a final EIS is required if a federal agency "makes substantial changes in the proposed action that are relevant to environmental concerns" or "[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." (40 CFR § 1502.9[c][1].)

Here, should the Project be approved but then be modified in the future in a manner affecting the extent of its environmental effects, the lead agencies will comply with applicable provisions of the CEQA Guidelines and NEPA regulations, as determined at the time in light of the nature of the changes and the extent of the new effects.

4.0 State Water Board Change Petition Process

This section is a discussion of the review and assessment of comments received after the close of the Final EIR/EIS record that were related to the State Water Resources Control Board's (State Water Board's or SWRCB's) water rights hearing for the California WaterFix Petition for a Change in Point of Diversion (CPOD). As discussed above, DWR has prepared this document to identify post Final EIR/EIS developments. Although information presented to the SWRCB after publication of the proposed Final EIR/EIS is included within this document, it is not considered significant new information requiring recirculation.

For instance, no new information was included that would result in: 1) A new significant environmental impact resulting from the project or from a new mitigation measure proposed to be implemented. (See *Laurel Heights Improvement Association v. Regents of University of California* (*Laurel Heights II*) (1993) 6 Cal.4th 1112, 1129; see also *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 447.) 2) A substantial increase in the severity of an environmental impact unless mitigation measures are adopted that reduce the impact to a level of insignificance; and/or 3) A feasible project alternative or mitigation measure considerably different from others previously analyzed were added that would clearly lessen the environmental impacts of the project but be unacceptable to the project proponent.

Additionally, many of the comments received dispute the Final EIR/EIS's analyses or conclusions. Mere disagreement with such analyses or conclusions, even if supported by expert evidence, does not trigger the recirculation requirement. (See *Cadiz Land Co. v. Rail Cycle* (2000) 83 Cal.App.4th 74, 97.)

All information included in this Final EIR/EIS merely clarifies, or amplifies or makes insignificant modifications to the EIR/EIS. (See *Laurel Heights II, supra*, 6 Cal.4th at pp. 1129-1130; See also CEQA Guidelines, § 15088.5.)

Assessment of Comments Received on the Proposed Final EIR/EIS that Include Information Provided During the California WaterFix Water Rights Hearing on Change in Point Of Diversion

I. INTRODUCTION

The CA Department of Water Resources' (DWR) and the U.S. Bureau of Reclamation's (Reclamation) expert witness testimony and exhibits on the petitioned project, California WaterFix Alternative 4A, presented to the State Water Board during Part 1 of the CPOD hearing demonstrate that the petitioned project will protect beneficial uses and will not result in impacts to other legal users of water. In order to assess the potential overlap of information presented during Part 1 of the SWRCB CPOD hearing with the assessment of California WaterFix potential to cause a direct or indirect physical effect on the environment within the context of preparing the Final EIR/EIS; and in considering the comments received on the proposed Final EIR/EIS that specifically called out issues raised in the SWRCB CPOD hearing, DWR has reviewed and considered the following and this information is incorporated into the administrative record for the preparation of this Final EIR/EIS:

- DWR and Reclamation direct testimony and exhibits to support its case-inchief for Part 1 of the CPOD hearing
- The transcripts of direct and cross examination of all DWR and Reclamation witnesses to support its case-in-chief for Part 1 of the CPOD hearing
- The transcripts of DWR and Reclamation's cross examine of protestant witnesses during the protestants' case-in-chief for Part 1 of the CPOD hearing
- DWR and Reclamation direct testimony and exhibits to support its rebuttal portion for Part 1 of the CPOD hearing
- The transcripts of direct and cross examination of all DWR and Reclamation witnesses to support its rebuttal portion for Part 1 of the CPOD hearing
- The transcripts of DWR and Reclamation's cross examine of protestant witnesses during the protestants' rebuttal portion for Part 1 of the CPOD hearing
- DWR and Reclamation direct testimony and exhibits to support its surrebuttal portion for Part 1 of the CPOD hearing
- The transcripts of direct and cross examination of all DWR and Reclamation witnesses to support its sur-rebuttal portion for Part 1 of the CPOD hearing
- The transcripts of DWR and Reclamation's cross examine of protestant witnesses during the protestants' sur-rebuttal portion for Part 1 of the CPOD hearing

Many of the comments on the Final EIR/EIS submitted in January 2017 and June and July 2017 were from parties who participated as protestants in the SWRB CPOD hearings and as part of their submittal to DWR for consideration in completion of the CEQA process, included specific testimony submitted during either the cases in chief, rebuttal, or sur-rebuttal portions of Part 1 of the CPOD hearing.

The tables of comments prepared for this document (see Attachment 2 and 3) include an assessment of each comment that included reference to or attached SWRCB CPOD hearing testimony or other hearing exhibits and whether the comment or attachment addresses:

- A. issues within the California WaterFix environmental impact documents,
- B. issues presented during the State Water Board water rights hearing for the CPOD,
- C. issues that are not properly within the environmental document, and
- D. statements that are unsubstantiated and therefore cannot be addressed.

Many of the issues raised by these specific comments were raised previously on the Draft EIR/EIS and the RDEIR/SDEIS and are responded to in the Final EIR/EIS. Other issues raised are addressed specifically by DWR's and Reclamation's rebuttal testimony submitted in March 2017 and sur-rebuttal testimony submitted in June 2017. As discussed below and in the Attachment 2 and 3, the issues raised by these specific comments do not raise any new significant impacts nor new impacts outside those assessed in the EIR/EIS or supporting documents from the State Water Board CPOD hearing that are incorporated herein. The expert witness testimony and supporting exhibits are premised upon modeling conducted for the EIR/EIS, the Biological Assessment prepared in compliance with Section 7 of the ESA, and the CPOD water rights hearing. A summary of the issues raised regarding the information that supports both the preparation of the EIR/EIS as well as DWR's and Reclamation's hearing testimony and exhibits submitted by DWR and Reclamation in the CPOD hearing relevant to these issues.

II. MODELING

There are several modeling runs specifically developed for the water rights hearing that support the analyses of the expert witnesses presented by DWR and Reclamation. These modeling runs are based upon variants of the project description within the scenarios assessed in the Final EIR/EIS and tailored to demonstrate that the Preferred Alternative, Alternative 4A, does not cause injury to legal users of water. The models presented are CalSim II (2010), CalSim II (2015), DSM2, HEC5Q and CVHM-D. The appendices 5A through 5G and 7A of the Final EIR/EIS present information on these models.

CalSim II, for the no action alternative and for the California WaterFix scenarios is based on 82 years of historical hydrology and incorporates effects of Climate change. All simulations, including the No Action Alternative, encompass a wide range of water supply conditions including stressed Central Valley and State Water Project operating conditions. As a result, Existing obligations on the CVP-SWP system (water demands, biological opinions and other regulatory requirements) in combination with climate change and sea level rise could result in operational conditions that rely upon real-time decision making. Under stressed operating

conditions, operators will likely consider all options legally available to them in order to balance critical water needs.

Because the models operate with fixed rules even in circumstances where real-time decision making plays an important role in actual operations, in some months, modeled unavailability of the flow to meet the salinity standards in the Delta when modeled upstream storage is at deadpool conditions was a factor for the modeled exceedances of the standards. In such cases any salinity standard exceedances are reflections of the standard system operations for a given scenario simulated in the CalSim II model. For the California WaterFix scenarios, it has been demonstrated that the upstream storage conditions simulated are similar to the No Action Alternative. With or without California WaterFix, stressed operating conditions result in real-time decision making in order to effectively maximize and balance protection of beneficial uses and water rights, which are circumstances that cannot be modeled.

A. Flow Modeling in CalSim II

CalSim II, developed by DWR, is the model used to simulate SWP/CVP operations. CalSim II was used extensively for preparation of the Final EIR/EIS, Biological Assessment, and within the water rights hearing materials both by DWR and Reclamation, and also by other parties in the CPOD hearing who hired the engineering consulting firm MBK Engineers. The specific scenarios modeled are listed here:

No Action Alternative (NAA) Alternative 4A, operational scenario H3 (4A-H3) Alternative 4A, operational scenario H4 (4A-H4) Alternative 4A, operational scenario Boundary 1 (4A-B1) Alternative 4A, operational scenario Boundary 2 (4A-B2) Alternative 4A, operational scenario H3+ (4A-H3+ or BA scenario)

The CalSim II modeling inputs, assumptions and operations criteria for each scenario, NAA and Alternative 4A-H3, 4A-H4, 4A-B1 and 4A-B2, are detailed and compared within an exhibit submitted by DWR marked as DWR-515 (Modeling Assumptions Table), which has been accepted into evidence.

The criteria associated with Alternative 4A-H3+, or the BA scenario, is described within the Biological Assessment available on the California WaterFix website and on the State Water Board water rights hearing website for California WaterFix and marked as SWRCB-104.

The consulting firm MBK developed its own scenarios with different assumptions than utilized by DWR experts and ran CalSim II to produce results, which other parties to the water rights hearing presented. These scenarios, although not thoroughly documented, were discussed at length by MBK and addressed by DWR through the course of cross-examination and within the materials submitted by DWR and Reclamation for rebuttal. Based on this, MBK's use of the CALSIM II model was shown to have violated many common modeling practices. The rebuttal discussions were marked as DWR-86 and DWR-86-Errata (Testimony of Armin Munevar), DWR-79 and DWR-79, DWR-79-Errata (Testimony of Parviz Nader-Tehrani), DWR-78 (Testimony of John Leahigh), DOI-33-Errata and DOI-37 (Testimony of Nancy Parker), and DOI-36 (Testimony of Ron Milligan). Despite MBK's difference of opinion on certain assumptions used in the CALSIM II modeling, the modeling and assumptions within the modeling relied upon by DWR and Reclamation reflect their own expertise, as supported by the record, and is considered appropriate to support the analysis of environmental impacts associated with the Proposed Project.

B. Delta Water Quality Modeling in DSM2

Delta Simulation Model 2 (DSM2) was developed by DWR to be used as a tool to recreate historic flow conditions, forecast future conditions and evaluate various planning alternatives in the Sacramento-San Joaquin Delta. DSM2 is also used as a forecasting tool to evaluate short and long term effects of specified changes in the Delta. DSM2 was used extensively within the California WaterFix Final EIR/EIS, Biological Assessment, and water rights hearing materials by the DWR and Reclamation. Other parties did not attempt to modify or rerun the DSM2 model. The specific scenarios modeled are identical to those used in CalSim II and listed above. There are also variations of the modeling scenarios listed above referred to as "sensitivity runs" that were conducted to isolate or test various aspects of other parties' testimony.

In order to test and rebut testimony from the South Delta Water Agency and the Central Delta Water Agency, DWR ran a sensitivity run that isolated the effects of the structure known as the Head of Old River Gate. This structure is proposed to cross the channel of Old River at its initial split from the San Joaquin River just down river from Vernalis. The results of the sensitivity run clearly show that effects to water quality within the south Delta region are a result of the operation of the Head of Old River Gate and not attributable to the operation of the new intake structures proposed for the Sacramento River. A thorough discussion of these results can be found within the rebuttal testimony and exhibits submitted as DWR-79, DWR-79-Errata and DWR-932 (Testimony of Parviz Nader-Tehrani) and the exhibits referenced within.

To rebut testimony claiming impacts to Delta water quality and water levels from California WaterFix operations, DSM2 model runs were used to isolate the effects of modeling criteria for Fall X2. DSM2 modeling runs comparing the operational scenario Boundary 1, which does not include Fall X2 criteria, with the No Action Alternative (NAA), which includes Fall X2, demonstrated that results showing effects on water quality near the City of Antioch intake are mostly attributed to the absence of Fall X2 in Boundary 1. A similar analysis was used to show that, where modeling showed large reductions in water levels downstream of the California WaterFix North Delta Diversions (in the comparison of Boundary 1 relative to the NAA), the results were again due to Fall X2. Through the use of DSM2 finger-printing analysis, it was demonstrated that large changes in proportion of San Joaquin River and Sacramento River mostly occur during high flow periods, and are not expected to cause degradation in water quality near the City of Antioch. A thorough discussion of these results can be found within the rebuttal testimony submitted as DWR-79 and referenced exhibits.

Furthermore, DSM2 results were presented for the location of the drinking water diversion point for the City of Stockton. These results are contained within the modeling results produced by DSM2 for all the environmental documents, the Biological Assessment, and the water rights hearing. The rebuttal materials, however, present this information for the first time as part of a specific analysis. The analysis confirmed that the drinking water intake location for the City of Stockton is within the results for locations presented at earlier times and believed to be representative of the Stockton location. Thus, this additional work produced no new impacts that are outside what was assessed by the environmental documents. This analysis can also be found within testimony and exhibits submitted as DWR-81 (Testimony of Michael Bryan) and the exhibits referenced within.

Water quality effects that may impact water treatment operations on the American and Sacramento Rivers are also assessed within the testimony and exhibits submitted as DWR-82, DWR-930 and the exhibits referenced within. There are no effects from California WaterFix that would impact water treatment operations on the American or Sacramento Rivers.

C. Groundwater Modeling in the Delta using CVHM-D

Groundwater modeling (CVHM-D) was thoroughly utilized in the California WaterFix Final EIR/EIS and water rights hearing materials by the DWR and Reclamation to assess changes in groundwater elevations in the Delta. Additional written analysis of the model results was produced by DWR and Reclamation for the water rights hearing. This additional analysis indicated that groundwater recharge will not be affected to the extent that it will disrupt the use of groundwater wells within the vicinity of the California WaterFix intake structures, pipeline alignment, or more broadly within the groundwater basin underlying the southern portion of Sacramento County. This analysis is contained within the testimony and exhibits submitted as DWR-218 (Gwen Buchholz Groundwater Impact Analysis) and DWR-80 (Testimony of Gwen Buchholz) and the exhibits referenced within.

III. CALIFORNIA WATERFIX OPERATIONS

Concerns were expressed during the CPOD hearing regarding future operations of the California WaterFix ability to meet existing protections under the Bay Delta Water Quality Control Plan, while not injuring other legal users of water in the Delta. DWR and Reclamation provided evidence that the SWP and CVP project operators routinely assess the available water supply, the controlling regulatory requirements, and forecasts of precipitation and runoff to operate project facilities to satisfy regulatory and contractual obligations. Testimony submitted in the California WaterFix water rights hearing of project operations demonstrated an outstanding compliance record and that the California WaterFix North Delta Diversions would add flexibility to operations with the expectation of the same or better compliance. Operational testimony and exhibits with this information have been submitted as DWR-4 errata, DWR-61, and DWR-78 (Power Point Presentation and Testimony of John Leahigh) and the exhibits referenced within.

Concerns were also expressed over the accuracy of the DWR and Reclamation modeling to support the operations related to the capture of water supply in stressed conditions and the reliance upon real time decision making by the operators. As was presented by DWR and Reclamation during the hearing, operators routinely make real time decisions, based on a complicated set of factors, in order to maintain compliance with regulatory standards and contractual obligations. Testimony submitted in the California WaterFix water rights hearing clearly establishes that stressed water supply conditions will not change this fundamental aspect of SWP operations.

IV. EFFECTS ON AGRICULTURAL PRODUCTION

Many Delta interests filed comments asserting that operation of California WaterFix would cause future damage to crop productivity, allow for soil salinity build-up, and create associated economic losses due to reductions in agricultural production. These assertions are based upon studies submitted by the protestants that was shown through cross examination of their witnesses as well as DWR and Reclamation rebuttal testimony, to exclude key information as to the location and history of the fields used to produce the results; calculate the water quality necessary to achieve a productive soil salinity without correcting for known influences of high groundwater commonly found within the Delta; and overestimate the efficiency of irrigation methods used upon the fields within the study. The resulting data is therefore suspect and not an accurate depiction of the impacts of Delta water quality on agricultural production. A comprehensive discussion as to why these assertions are unfounded and a thorough critique of the biased studies these concerns are premised upon is contained within the testimony and exhibits submitted as DWR-85 (Testimony of Joel Kimmelshue) and DWR-933 (Testimony of Joel Kimmelshue) and supporting exhibits referenced within.

Comments concerning the effect of the California WaterFix upon agricultural economics are addressed within the testimony and exhibits submitted as DWR-84 (Testimony of Christopher Thornberg), which demonstrate that the analyses of harm to the Delta economy due to salinity impacts on crop yields, changes to lower value crops, and negative impact on infrastructure services are not supported by the record.

V. ENGINEERING DESIGN AND CONSTRUCTION EFFECTS

Comments during the SWRCB CPOD hearing included engineering testimony and exhibits regarding engineering design and construction of California WaterFix facilities and issues related to vibration during construction, impacts to levee stability, impacts to historic structures, the feasibility of constructing large tunnels, the amount of seepage and leakage associated with a low-pressure tunnel design in combination with a single-pass tunnel liner, groundwater impacts during construction, temporary effects to existing water diversions disrupted during construction, and the possibility of impacting other infrastructure within the Delta. Each of these aspects are addressed within the testimony and exhibits submitted as DWR-2 errata, DWR2A, 2B, and 2C, DWR-57, DWR-6 errata, and DWR-75 (Power Point Presentations and Testimony of John Bednarski)and within the Final EIR/EIS responses to comments.

VI. WATER QUALITY EFFECTS RELATED TO MICROCYSTIS

Concerns were expressed during the CPOD hearing regarding future operations of the California WaterFix and potential water quality impacts related to microcystis. Water quality testimony and exhibits submitted by DWR and Reclamation to the State Water Board during the course of the water rights hearing address the state of science regarding Microcystis and other cyanobacteria. This testimony captures the understanding of the most current research and places it in context with well-known aspects of cyanobacteria life history. Concerns raised by other parties in the water rights hearing focused primarily on the residence time aspects related to creating potential conditions for a microcystis isues. However, as shown in the DWR and Reclamation testimony, it is only a portion of the information understood to influence cyanobacteria life history. The testimony and exhibits of Dr. Michael Bryan (DWR-81 and exhibits reference within) and the oral testimony of Dr. Ellen Preece describe the known

thresholds of water velocity tolerance for Microcystis and demonstrate that the California WaterFix will not create circumstances that increase the frequency of Microcystis blooms.

5.0 Endangered Species Compliance

This section describes the differences (analytical approach and mitigation) between the Final EIR/EIS and the NMFS and USFWS Biological Opinions (BiOP) and the CDFW draft 2081(b) Incidental Take Permit (ITP) application for the California WaterFix (subsections 5.1 and 5.2). In addition, this section describes how updated analyses and information presented in the BiOPs and draft 2081(b) documents do not change the impact determinations for listed species analyzed in the Final EIR/EIS. Lastly, subsection 5.3 describes the California WaterFix Aquatic Science Peer Review Process, which provided an independent panel review of the analytical approach and Adaptive Management Program included in the BiOPs and 2081(b) document.

CEQA requires a lead agency to recirculate an EIR only when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review but before certification. (CEQA Guidelines, § 15088.5, subd. (a).) No new information was included in this section that would result in: (1) A new significant environmental impact resulting from the project or from a new mitigation measure proposed to be implemented; (2) A substantial increase in the severity of an environmental impact unless mitigation measures are adopted that reduce the impact to a level of insignificance; and/or (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed were added that would clearly lessen the environmental impacts of the project but be unacceptable to the project proponent. (CEQA Guidelines, § 15088.5, subd. (a).) All information included in the Final EIR merely clarifies, amplifies, or makes insignificant modifications to the EIR.

5.1 ESA Section 7 Compliance and Biological Opinions

In 2006, state and federal agencies started pursuing an ambitious and comprehensive conservation plan under Section 10 of the Endangered Species Act (ESA) and California's Natural Community Conservation Planning Act. The approach included new water conveyance facilities and sought to improve reliability of water delivery and contribute to the recovery of listed species under a single regulatory package. A draft Bay Delta Conservation Plan (BDCP) and draft EIR/EIS were released for a public comment period that began in December 2013 and closed in July 2014. While the draft EIR/EIS was out for public review, several significant changes were announced by the Brown Administration and its federal partners.

Based on these project changes and in consideration of comments received on the draft EIR/EIS, state and federal agencies announced in April 2015 a change in their approach to seeking a permit for a project to improve, protect, and maintain ecosystem health, water quality, and water supplies. Rather than pursue the project as a Habitat Conservation Plan (HCP), under Section 10 of the ESA, and a Natural Community Conservation Plan (NCCP), under the state's Natural Community Conservation Planning Act, the state and federal agencies chose to study additional alternatives to achieve the dual goals through implementation of new water conveyance facilities that would be built in compliance with Section 7 of the ESA and Section 2081(b) of the California ESA. As the state permitting agency for CESA, CDFW must ensure

issuance of the 2081(b) permit will not jeopardize the continued existence of state-listed species and potential impacts of incidental take are minimized and fully mitigated. Similarly, a federal agency that authorizes, funds, or carries out an action must ensure the action is not likely to jeopardize the continued existence of any federally endangered or threatened species or result in the destruction or adverse modification of species habitat. The non-HCP/non-NCCP alternatives (first presented in the RDEIR/SDEIS), including the preferred alternative, 4A (which is analyzed in the California WaterFix Biological Assessment and BiOPs/2081(b) analyses), were developed to achieve project goals and objectives, focusing on the conveyance facility improvements necessary for the SWP and CVP to address increased demands upon and risks to water supply reliability needs in conjunction with ecosystem improvements to significantly reduce reverse flows and reduce direct impacts on fish species associated with the existing south Delta intakes.

In January 2016, DWR and Reclamation released a draft Biological Assessment, which included a species-by-species analysis and proposed mitigation to offset and avoid potential project impacts. In August 2016, DWR and Reclamation submitted a revised Biological Assessment to USFWS and NMFS to initiate formal consultation under Section 7 of the ESA and begin the process of obtaining incidental take authorization for federally-listed species. The Biological Assessment and 2081(b) application included revisions based on agency input and recommendations from Phase 1A of the Delta Science Program's Aquatic Science Peer Review Panel (see Section 5.3 below) on the draft Biological Assessment and 2081(b) analyses. Consistent with the changed approach, in October 2016, DWR submitted a 2081(b) application to CDFW to address incidental take of state-listed species for CESA compliance. The incidental take analysis included in the 2081(b) application analyzes potential project impacts and provides mitigation necessary to ensure project impacts are fully mitigated. In January 2017, NMFS, USFWS, and CDFW submitted draft California WaterFix Biological Opinion and 2081(b) analyses to the Delta Science Program's Aquatic Science Peer Review Panel. The Aquatic Science Peer Review Panel reviewed the BiOP and 2081(b) documents and provided recommendations to improve the impact analyses and mitigation approaches. Their analysis can be found in the Phase 2A and 2B Final Reports published in March 2017. In June 2017, USFWS and NMFS issued final Biological Opinions on construction and operations of the California WaterFix, which includes project commitments/updates based on recommendations from the Aquatic Science Peer Review and DWR/USBR consultation with NMFS, USFWS, and CDFW.

1.1.1. Project Updates

During the development of the Biological Opinions, and 2081(b) analysis, DWR and USBR have been working closely with NMFS, USFWS, and CDFW to ensure project effects are fully evaluated and potential impacts are minimized and avoided and to avoid jeopardizing the continued existence of state and federally listed species, consistent with ESA Section 7 and CESA 2081(b) guidelines. As a result, several modifications have been made to the project description², including several construction and operation-related updates, to further minimize species impacts and provide more flexibility to adjust operations based on environmental conditions. The following discusses these project updates, which are included in the California WaterFix Biological Opinions and draft 2081(b) ITP proposed action and, where applicable, describes how these changes do not affect the analyses or impact determinations in the Final EIR/EIS.

Construction

Each of the construction- and restoration-related changes are evaluated below to determine if the change could result in 1) a significant new environmental impact, 2) a substantial increase in severity of an impact, or 3) a new mitigation measure not disclosed in the Final EIR/EIS that DWR declines to adopt. Overall, these changes will have no effect on the overall construction schedule, are within the assumptions made for the duration of the project, and are consistent with the assumptions made in the applicable analyses. Therefore, these modifications do not affect the impact determinations in the Final EIR/EIS and no additional analysis or mitigation is required.

Pile Driving

The construction assumptions and requirements for in-water pile driving included in the California WaterFix BiOp proposed action differ slightly from those assumed in Chapter 3, Alternatives and Appendix 3C, Construction Assumptions for Water Conveyance Facilities of the BDCP/California WaterFix Final EIR/EIS. Assumptions for in-water pile driving are included for the North Delta Diversions (NDD), Barge Landing Sites, Clifton Court Forebay, and Head of Old River Gate. Pile driving at these locations will require use of bubble curtains or other sound attenuating devises, revised work windows, and acoustic monitoring for in-water pile driving that occurs outside of work windows. The following table summarizes the work window changes from those assumed in the Final EIR/EIS.

Facility	Final EIR/EIS Alternative 4A	BiOp/2081(b) ITP Proposed
		Action
North Delta Diversions	June 1 – October 31	June 15 – September 15 (pile
		driving)
Barge Landing Sites	August 1 – October 31	July 1 – August 31
Clifton Court Forebay	July 1 – November 30	July 1 – October 31
Head of Old River Gate	August 1 – November 30	August 1 – October 31

In-Water Work Window Assumptions

² This is referred to in the Biological Assessment as the "Proposed Action" which is referred to in this document as either the proposed project, Alternative 4A, or California WaterFix. Consistent with Section 7, the Biological Assessment is not an alternatives-based analysis and therefore it does not address potential updates related to other alternatives considered in the Final EIR/EIS.

These project changes represent minor adjustments to the allowable construction timing, monitoring requirements, and sound reducing devices/approaches that are intended to reduce effects on listed-fish species and other organisms potentially affected by underwater construction sound. These changes do not create any new impacts, more severe impacts, or the need for new mitigation measures that have not already been disclosed in the Final EIR/EIS because the work window modifications would not affect any other resources and are provided to further reduce effects on fish and other aquatic organisms during project construction.

Barge Traffic

Under Alternative 4A, barges would be used to transport construction materials for the water conveyance facilities. Temporary barge landings would be established on Venice, Bacon, Victoria, Bouldin, and Mandeville Islands, and at Clifton Court Forebay. These landings would be established at locations adjacent to construction work areas along the conveyance alignments for the delivery of construction materials. These facilities would be sized to accommodate various deliveries (*e.g.*, tunnel segments, batched concrete, major equipment).

A pier would be built within the worksite footprint of the intake or tunnel for these activities. The barge unloading facility at each location is assumed to be used for the duration of the construction of the intake or tunnel (for approximately 5–6 years). The barge facilities would be used year-round.

Measures to avoid or minimize effects on aquatic species and habitat related to barge operations include establishing specific protocols for the operation of all project-related vessels at the construction and/or barge landing sites. AMM7 also includes monitoring protocols to verify compliance with the plan and procedures for contingency plans. Measures in AMM7 will be included in a Barge Operations Plan.

The proposed action proposes conditions that would restrict the frequency with which barges could be used to transport materials to the construction sites that are not included in the Final EIR/EIS. From June 1 through October 31 (5-months) barge traffic would not be restricted. From November 1 through February (4-months), barge traffic would not be allowed with the exception of trips between Stockton and Bouldin Island. Finally, from March 1 through May 31 (3 months), barge traffic would be restricted to moving critical heavy construction equipment. The proposed action requires that plans be developed for the surface transportation (truck and/or rail) of materials to construction sites.

The assessment of impacts on transportation included in the Final EIR/EIS identified significant/adverse impacts on the capacity of specified roadway segments (Impact TRANS-1), damage to roadways (Impact TRANS-2), and roadway safety (Impact TRANS-3). Impact TRANS-1 was described as significant and unavoidable, as the mitigation necessary to render the impact less than significant requires agreements that cannot go forward absent the cooperation of third parties, which cannot be assured. The text goes on to state, though, that "[i]f, however, all improvements required to avoid significant impacts prove to be feasible and any necessary agreements are completed before the project's contribution to the effect is made,

impacts would be less than significant." (Final EIR/EIS, p. 19-358.) The Final EIR/EIS reached the same conclusions with respect to Impacts TRANS-2 and TRAN-3. (*Id.*, pp. 19-359, 19-360.)

Limiting the use of barges to times specified in the proposed action could result in the need to transport additional material to construction sites over regional and delta roadways. If additional truck trips are necessary, those trips would increase the severity and duration of construction-related impacts on roadway capacities, damage to roadways, and safety; however, this additional amount of traffic would not be a substantial increase and would be reduced to a not adverse/less-than significant level by implementing mitigation measures to reduce these effects, if those measures prove to be feasible due to cooperation by third parties. Without such cooperation, the impacts would be significant and unavoidable, as previously disclosed in the proposed Final EIR/EIS released in December 2016. In short, the increase in truck traffic expected with this barge transportation change would not require disclosure of a new significant impact and no additional mitigation measures would be needed to reduce these additional potential truck traffic effects.

The assessment of impacts on air quality included in the Final EIR/EIS identified significant/ adverse impacts through the generation of criteria pollutants, including NOx in the SMAOMD (Impact AQ-1), ROG and NOx in the BAAQMD (Impact AQ-3), and ROG, NOx, and PM10 in the SIVAPCD (Impact AO-4); however, mitigation is available to reduce impacts to a not adverse/less than significant level. Because each of these measures requires the use of offsets to avoid any net increase in air pollutants over and above the applicable CEQA significance thresholds, each measure will be sufficient to avoid any net increase in air pollution due to increased truck traffic. Substituting surface transportation for barges could result in an increase of criteria pollutants within each air quality management district. Some of the effects for criteria pollutants and particulate matter in YSAQMD and SJVAQMD were determined to be not adverse/less than significant for Alternative 4A in the Final EIR/EIS. Due to the stringent mitigation requirements mentioned above, potential increases in surface transportation would not increase the severity of these impacts after mitigation. Overall, potential increases in truck traffic emissions would not create new significant impacts or require additional mitigation measures not already disclosed in the Final EIR/EIS. The current mitigation approach would be applicable to changes in truck traffic emissions estimates. Any additional air pollution would be offset pursuant to previously-proposed mitigation measures.

The Final EIR/EIS also identified significant health hazard impacts from generation of particulate matter within the SMAQMD (Impact AQ-9) and identified mitigation (Mitigation Measure AQ-9) to reduce that impact to a less than significant level. Implementation of that measure, which by its own terms requires the elimination of all emissions in excess of significance thresholds for sensitive air pollution receptors, would also be expected to reduce the impact of additional roadway traffic on particulate matter to a less than significant level. Under Alternative 4A, health hazard impacts from generation of particulate matter in the SMAQMD was considered less than significant with mitigation. In the event increased truck traffic would increase particulate matter under the conditions stipulated in the proposed action, the same mitigation would be available to reduce the impact to a less than significant level. Potential increase in truck traffic may, therefore, result in an increase in truck traffic emissions estimates but would not create new significant impacts or require additional mitigation

measures not already disclosed in the Final EIR/EIS. The current mitigation approach would be applicable to changes in truck traffic emissions estimates.

Dredging

The proposed action indicates that dredging at Clifton Court Forebay and proposed barge landing sites would be restricted to pile driving work windows, as described above; and dredging of the north Clifton Court Forebay will occur after fish recovery requirements are completed. The Final EIR/EIS evaluates the effects of in-water conveyance facility construction, including possible dredging activities, in Chapter 11, Fish and Aquatic Resources and Chapter 8, Water Quality. Construction effects on listed fish species is considered not adverse/less than significant with the protective measures included for Alternative 4A. Restricting dredging to pile driving work windows and requiring fish recovery in north Clifton Court Forebay would further reduce effects of in-water construction activities on listed fish species and would not create new significant impacts that have not already been disclosed in the Final EIR/EIS because these additional restrictions do not create new construction activities or conditions that would result in impacts to other resources discussed in the Final EIR/EIS.

Mitigation Measures

Commitment to Reasonable and Prudent Alternatives (RPAs)

The proposed action further refines the restoration mitigation measures analyzed in the Final EIR/EIS. The proposed action reiterates commitments to certain non-operational habitat and related actions that are part of the NMFS 2009 BiOp RPAs, including improving adult salmonid and sturgeon passage through the Yolo Bypass – including the Fremont Weir – by modifying or removing barriers (NMFS 2009 RPA Action I.7); increasing juvenile salmonid access to the Yolo Bypass and improving adult fish passage by constructing an operable gated structure in the Fremont Weir (NMFS 2009 RPA Action I.6.1); establishing an additional population of winterrun Chinook salmon and identifying the benefits and risks of reintroduction for spring-run Chinook salmon and steelhead in the McCloud River and/or upper Sacramento River (NMFS 2009 RPA Action NF 4); increasing the overall through-Delta survival of salmonids by reducing juvenile salmon entry into the interior Delta (NMFS 2009 RPA Action IV.1.3); and improving instream flow releases and safe fish passage to prime salmon and steelhead habitat on Battle Creek for winter-run Chinook salmon, spring-run Chinook salmon, and Central Valley steelhead (NMFS 2009 RPA Action I.2.6). The proposed action also includes certain agreed-to funding for the benefit of spring run Chinook salmon and winter run Chinook salmon and steelhead in the Sacramento River watershed. The funding agreements do not alter the analysis in the Final EIR/EIS. The BiOp RPA measures listed here are considered qualitatively under the cumulative impacts analysis in the Final EIR/EIS; and this agreement to ensure implementation of these RPAs does not alter the Final EIR/EIS analysis or result in new significant impacts or more severe impacts that are not already disclosed in the Final EIR/EIS because these actions are intended to improve conditions for listed fish species.

VELB mitigation

Mitigation for Valley elderberry longhorn beetle (VELB) was adjusted downwards in the proposed action compared to the mitigation in the Final EIR/EIS due to removal of compensation for direct effects from restoration. The decrease in the number of plantings required as compensation for effects on VELB habitat does not alter the analysis or conclusions within the Final EIR/EIS.

Delta smelt mitigation

In consultation with CDFW and USFWS staff, restoration of nearly 1,828 acres of habitat suitable for delta smelt is proposed. Approximately 75 acres is intended to offset construction impacts on delta smelt and their habitat, and approximately 1,750 acres are intended to offset potential impaired delta smelt access to shallow water habitat in the vicinity and upstream of the NDDs. Restoration will be performed at a site(s) in the vicinity of Sherman Island, Cache Slough, or the north Delta to be approved by USFWS. This proposed restoration increase is greater than the mitigation acreage assumed in the Final EIR/EIS Alternative 4A analysis.

Assessment of the Proposed Action updates to Mitigation Measures/Environmental Commitments

Terrestrial Biological Resources

As discussed in Chapter 12, Terrestrial Biological Resources, construction of tidal habitat has the potential to result in impacts on several terrestrial species by eliminating potential habitat, impacting occupied habitat, and potential increased exposure to selenium. However, even with the proposed action's increased tidal habitat restoration, protection, and enhancement, the Resource Restoration and Performance Principles, Avoidance and Minimization Measures, and Environmental Commitments 7 (Riparian Natural Community Restoration) and 8 (Grassland Natural Community) would reduce these effects in a similar manner as described for Alternative 4A. As shown in Errata to the Final EIR/EIS as published in late 2016, and as set forth in the Final Mitigation Monitoring and Reporting Program, these two environmental commitments have been modified to require increased acreages of riparian natural community restoration and grassland restoration in order to account for, and mitigate for, the additional acreages that would be altered to create additional habitat suitable for delta smelt.

The need for 1,533 acres of additional Delta smelt habitat has increased the extent of the proposed project's impacts on natural communities and habitat for a variety of species. This additional mitigation acreage, which would consist of tidal natural communities restoration, is likely to be sited in the same conservation zones noted in Chapter 12 (*i.e.*, Cache Slough and the West Delta). Discussions with the manager of the EcoRestore program (pers. comm. Gardner Jones, DWR, 6/20/2017) indicate that those sites are comprised of roughly equal proportions of pasture (grassland natural community) and managed wetlands (managed wetlands natural community), sometimes with small areas of riparian vegetation (riparian natural community); specifically, for a combination of restoration sites totaling 1,533 acres, riparian natural community impacts would not be expected to exceed 20 acres. Due to uncertainty regarding where the Delta smelt habitat would be sited, it is assumed that up to 2/3 of the restoration (*i.e.*, 1,022 acres) could affect grassland natural community, and that up to 2/3 of the restoration (*i.e.*, 1,022 acres) could affect managed wetland natural community. Accordingly, the environmental commitments (summarized in Table 3-9 of the Final EIR/EIS) have been revised

to accommodate the changed impact acreage. Environmental Commitment 4, Tidal Natural Communities Restoration, has been increased from up to 295 acres, to up to 1,828 acres per the USFWS Biological Opinion. Environmental Commitment 7, Riparian Natural Community Restoration, has been increased from up to 251 acres, to up to 271 acres. Environmental Commitment 8, Grassland Natural Community, has been increased from up to 1,070 acres, to up to 2,092 acres.

Five species would have the potential to be significantly affected by the increase in Delta smelt habitat: greater sandhill crane, California black rail, giant garter snake, Swainson's hawk, and tricolored blackbird. The greater sandhill crane, giant garter snake, Swainson's hawk, and tricolored blackbird may forage in grasslands, Swainson's hawk nests in riparian trees, and tricolored blackbird may also forage or nest in riparian areas. The California black rail potentially uses the managed wetlands that would be removed by the proposed Delta smelt habitat; however, their primary habitat is tidal wetlands, which would be created by the proposed tidal wetland creation.

All other wildlife species would not experience a substantial change in acreage impacts to their habitat, relative to the impacts evaluated for Alternative 4A, when considered in the context of the increased acreage in the environmental commitments for riparian and grassland natural communities. The descriptions of less-than-significant impacts to those species under Alternative 4A, presented in Chapter 12, remain accurate, as explained below.

With regard to greater sandhill crane, the portions of the increase in Delta smelt habitat occurring in riparian or grassland natural communities (up to 1,042 acres) would not be sited in areas used as foraging or roosting habitat by the crane because, as detailed in Chapter 3, Section 3.3.2.2, any potential greater sandhill crane habitat will be avoided through the process of refining and finalizing the mitigation requirements imposed via ESA and CESA. This process will include site-specific confirmation of species habitat acreages for those species covered under authorizations issued by the United States Fish and Wildlife Service and the California Department of Fish and Wildlife and additional avoidance measures included in the proposed project will ensure no actions considered "take" as defined by the CA Fish and Game Code will occur. In consideration of these factors, the description of less-than-significant impacts to this species under Alternative 4A, presented in Chapter 12, remains accurate.

With regard to California black rail, the portions of the increase in Delta smelt habitat occurring in managed wetland natural community (up to 1,022 acres) could be sited in areas used as foraging or nesting habitat by the rail; moreover, the Tidal Natural Communities Restoration proposed for the Delta smelt would serve as nesting and foraging habitat for the rail. As detailed in Chapter 3, Section 3.3.2.2, however, potential impacts to such habitat areas will be avoided through the process of refining and finalizing the mitigation requirements imposed via ESA and CESA. This process will include site-specific confirmation of species habitat acreages for those species covered under authorizations issued by the United States Fish and Wildlife Service and the California Department of Fish and Wildlife. Should such refinements entail unexpected impacts, it is possible that supplemental review documents may be necessary under CEQA or NEPA. Any such need is very unlikely, however, as state law prohibits the "take" of this avian species. Impacts to California black rail would be mitigated in order to avoid any incidental take of this fully protected species. In consideration of these factors, the description of less-than-
significant impacts to this species under Alternative 4A, presented in Chapter 12, remains accurate.

With regard to giant garter snake, the portions of the increase in Delta smelt habitat occurring in managed wetland natural community (up to 1,022 acres) or grassland natural community (up to 1,022 acres) could be sited in areas used, respectively, as aquatic or upland habitat by giant garter snakes. As detailed in Chapter 3, Section 3.3.2.2, however, the potential for such impacts will be assessed in detail in the final ESA and CESA documentation prepared for the proposed habitat site(s). Should such refinements entail unexpected impacts, it is possible that supplemental review documents may be necessary under CEQA or NEPA. Any such need is very unlikely, however. Under CESA, impacts to giant garter snake must be fully mitigated in order to avoid any incidental take of this species, in accordance with the requirements of CESA pertaining to issuance of an ITP under FGC Section 2081(b); and impacts to both the snake and its habitat must also be mitigated consistent with ESA requirements. That mitigation will likely be provided under the same terms of giant garter snake mitigation as set forth in the USFWS Biological Opinion for the California WaterFix (USFWS 2017) and in the proposed ITP for the California WaterFix. Those documents detail measures to minimize incidental take of giant garter snakes, and mitigate for the loss of both aquatic and upland habitat by protection or restoration in perpetuity of a larger area of equivalent habitat. Specifically, mitigation is provided at a ratio of 2 acres protected or restored for every 1 acre impacted, if the mitigation is sited in a high-priority conservation area for the species; and at a ratio of 3:1 if mitigation is not sited in such an area. In consideration of these factors, the description of less-than-significant impacts to this species under Alternative 4A, presented in Chapter 12, remains accurate.

With regard to Swainson's hawk, the portions of the increase in Delta smelt habitat occurring in riparian or grassland natural communities (up to 1,042 acres) could be sited in areas used as nesting (riparian natural community) or foraging (grassland natural community) habitat by the hawk. As detailed in Chapter 3, Section 3.3.2.2, however, the potential for such impacts will be assessed in detail in the final CESA documentation prepared for the proposed habitat site(s). Should such refinements entail unexpected impacts, it is possible that supplemental review documents may be necessary under CEQA or NEPA. Any such need is very unlikely, however. Impacts to Swainson's hawk must be fully mitigated in order to avoid any incidental take of this species, in accordance with the requirements of CESA pertaining to issuance of an ITP under FGC Section 2081(b). That mitigation would likely be provided under the same terms of Swainson's hawk mitigation as set forth in the proposed ITP for the California WaterFix, which details measures to minimize incidental take of the hawk, mitigates loss of foraging habitat by protection in perpetuity of an equal area of foraging habitat, and mitigates loss of riparian nesting habitat by restoration of an equal area of riparian nesting habitat. In consideration of these factors, the description of less-than-significant impacts to this species under Alternative 4A, presented in Chapter 12, remains accurate.

With regard to tricolored blackbird, the area of increased Delta smelt habitat (1,533 acres) could be sited in areas used as foraging or nesting habitat by the blackbird. (The grassland and riparian areas could serve as foraging or nesting habitat, and the managed wetland areas could serve as foraging habitat.) As detailed in Chapter 3, Section 3.3.2.2, such impacts would be assessed in detail in the final CESA documentation prepared for the proposed habitat site(s). Should such refinements entail unexpected impacts, it is possible that supplemental review documents may be necessary under CEQA or NEPA. Any such need is very unlikely, however.

Under CESA, impacts to tricolored blackbird must be fully mitigated in order to avoid any incidental take of this species, in accordance with the requirements of CESA pertaining to issuance of an ITP under FGC Section 2081(b). That mitigation will likely be provided under the same terms of tricolored blackbird mitigation as set forth in the proposed ITP for the California WaterFix, which details measures to minimize incidental take of the blackbird, mitigates loss of foraging habitat by protection in perpetuity of an equal area of foraging habitat, mitigates loss of roosting habitat by protection in perpetuity of twice the acreage of roosting habitat, and mitigates loss of breeding habitat by protection in perpetuity of thrice the acreage of breeding habitat. In consideration of these factors, the description of less-than-significant impacts to this species under Alternative 4A, presented in Chapter 12, remains accurate.

Agricultural Resources

Although the need for 1,533 acres of additional delta smelt habitat, 1,022 acres of grassland natural community, and 20 acres of riparian natural community has increased the extent of the proposed project's impacts on agricultural lands, the increased acreage does *not* translate into a *substantial* increase in the severity of any previously-identified impacts, such that recirculation would be required. The impacts to agricultural resources due to facility construction and operation (AG-1), as well those resulting from the creation of restored habitat (AG-3) and the effects on agricultural lands due to seepage (AG-2), already involved very large acreages and were significant and unavoidable before the increased level of impact due to the need for more delta smelt habitat, grassland and riparian natural community; and these impacts will remain significant and unavoidable with the new acreage. When considered against this backdrop, the additional acres of converted agricultural lands does *not* entail a substantial increase in the adversely affected acreage, as explained below.

As the Final EIR/EIS explains with respect to Impact AG-1 for Alternative 4A:

Construction of physical structures associated with the water conveyance facility proposed under this alternative would occupy Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones, directly precluding agricultural use for the duration of construction. Temporary and short-term construction of facilities would convert approximately 1,495 acres of Important Farmland and 1,132 acres of land subject to Williamson Act contracts or in Farmland Security Zones to other uses. Physical structures would also permanently convert approximately 3,909 acres of Important Farmland and 2,035 acres of land subject to Williamson Act contracts or in Farmland Security Zones to other uses.

(Final EIR/EIS, p. 14-191.)

Thus, the construction and operation of the physical structures associated with Alternative 4A (Impact AG-1) would result in the conversion of approximately 5,404 acres of Important Farmland (1,495 from construction and 3,909 from long-term operation). In addition, these same activities would result in the conversion of 3,167 acres subject to Williamson Act contracts (1,132 from construction and 2,035 from operations).

The Final EIR/EIS also explains that Impact AG-3 for Alternative 4A, which involves the conversion of agricultural land to restored habitat pursuant to various environmental commitments, will result in adverse impacts to very large acreages of agricultural lands:

This alternative would restore up to 15,836 acres under Environmental Commitments 3, 4, 6–11, 15, and 16. Additionally, up to 4.6 linear miles of channel margin habitat would be enhanced. Implementation of restoration activities and other conservation actions could result in conversion of a substantial amount of Important Farmland and conflict with land subject to Williamson Act contracts or in Farmland Security Zones, resulting in a significant impact on agricultural resources in the study area.

(Final EIR/EIS, p. 14-196.)

Although this quoted discussion does not specifically state what portion of the 15,386 acres to be restored is currently devoted to agriculture, a very large majority of that land likely falls in that category. The Final EIR/EIS describes the impact as significant and unavoidable. (Final EIR/EIS, p. 14-197.)

Finally, Alternative 4A will also result in seepage from the operation of forebays and from the disruption of drainage and irrigation facilities during construction of water conveyance facilities (AG-2). The conveyance alignment would further adversely affect agriculture by crossing or interfering with approximately 43 miles of agricultural delivery canals and drainage ditches. (Final EIR/EIS, p. 14-192.)

All of these significant impacts are subject to mitigation, which will reduce their severity, though not to a less than significant level. The increased acreage of impacted agricultural land resulting from additional restoration will trigger increased mitigation efforts, particularly under Mitigation Measure AG-1 (Develop an Agricultural Lands Stewardship Plan (ALSP) to Maintain Agricultural Productivity and Mitigate for Loss of Important Farmland and Land Subject to Williamson Act Contracts or in Farmland Security Zones) and Mitigation Measure GW-5 (Agricultural Lands Seepage Minimization). These measures will reduce the severity of these new impacts by implementing activities such as:

- siting features to encourage continued agricultural production;
- monitoring seepage effects;
- avoiding, relocating or replacing agricultural infrastructure in support of continued agricultural activities;
- engaging counties, owners/operators, and other stakeholders in developing optional agricultural stewardship approaches; and/or
- preserving agricultural land through offsite easements or other agricultural land conservation interests.

Given that many of these options would not appear to apply to shoreline land converted to delta smelt habitat, the most likely mitigation strategy will be to preserve like amounts of affected land through the use of offsite easements or other agricultural land conservation interests. This would occur on a one-to-one basis. (See Final EIR/EIS, p. 14-45.)

In summary, even without the additional delta smelt habitat agreed upon by DWR after consultation with USFWS and CDFW, and the additional acreage of grassland natural community and riparian natural community needed to mitigate the added delta smelt habitat, the construction and operation of facilities under Alternative 4A would have converted 5,404

acres of Important Farmland and 3,167 acres subject to Williamson Act contracts. Habitat restoration pursuant to Environmental Commitments 3, 4, 6–11, 15, and 16 would have required the conversion of the vast amounts of agricultural land as part of the restoration of up to 15,836 acres and the creation of up to 4.6 linear miles of channel margin habitat. Additionally, seepage from the operation of forebays and from the disruption of drainage and irrigation facilities during construction of water conveyance facilities would have further adversely affected agriculture by crossing or interfering with approximately 43 miles of agricultural delivery canals and drainage ditches. Viewed in this broad context, in which total agricultural acreage losses could run to substantially more than 20,000 acres, the addition of another 1,533 acres of delta smelt habitat, 20 acres for riparian natural community, and 1,022 acres of grasslands, which may cause additional impacts to agricultural land does not represent a "substantial increase in the severity" of these previously identified effects.

Notably, moreover, even this increased level of impact on agricultural lands is relatively modest compared with the level of impacts on such lands that could occur under many other alternatives addressed in the Final EIR/EIS. For example, Alternative 4, from which Alternative 4A was derived, was projected to lead to the permanent conversion of 87,000 acres of land, much of which would be attributable to large-scale, long-term restoration activities associated with that alternative, and much of which would have been agricultural lands. (See Final EIR/EIS, Alternative 4, Impact AG-1 and Impact AG-3.) This level of impact would occur under several other alternatives from the Draft EIR/EIS, many of contemplated approximately the same amount of habitat restoration as Alternative 4. (See, *e.g.*, Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 7, etc.) It is indisputable, then, that the increased level of impact associated with Alternative 4A as modified by the June 2017 USFWS Biological Opinion is well within the range of impacts described within the broad range of alternatives addressed in the Final EIR/EIS.

In sum, the relatively modest increase in the severity of the originally-identified impact does not require recirculation, as the new information regarding the somewhat heightened level of impact has not "deprive[d] the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement." (State CEQA Guidelines Section 15088.5[a].) The underlying impact for Alternative 4A was discussed in the publicly-circulated RDEIR/SDEIS, the additional acreage associated with the increased need for delta smelt habitat has not triggered any new or different mitigation, and the new level of impact for Alternative 4A is considerably smaller than levels of impacts that would occur under numerous other alternatives included in the Final EIR/EIS.

Implementation of tidal wetland restoration would increase the exchange of tidal water in restoration areas which could affect the salinity of irrigation water. However, this impact (Impact AG-2) was already concluded to be significant and unavoidable previously, and an increase in delta smelt habitat would not alter this conclusion. Implementation of Mitigation Measures AG-1, GW-1 (if site-specific geotechnical conditions result in localized groundwater elevation reductions), GW-5, and WQ-11 (including Mitigation Measure WQ-11e) will reduce the severity of these impacts by implementing activities such as the ones described in the bullets above. Implementation of Mitigation Measure WQ-11 (including Mitigation Measure WQ-11e) would be expected to reduce the water quality effects on agricultural resources to a less-than-significant level, despite the increased acreage. However, the impact related to

conversion of Important Farmland would remain significant and unavoidable after implementation of these measures due to currently unknown factors that create uncertainty, as outlined above.

Public Health

As described in Chapter 3, *Description of Alternatives*, Alternative 4A would restore up to 15,836 acres of habitat under Environmental Commitments 3, 4, and 7–10. Implementation of portions of Environmental Commitments 4 and 7 would involve protecting and restoring aquatic habitat that could potentially increase suitable mosquito habitat within the study area. The increase in acreage of delta smelt habitat and riparian natural community under the proposed action would increase aquatic habitat by 1,535 acres.

Construction of the water conveyance facilities under Alternative 4A would involve construction and operation of three intakes (Intakes 2, 3, and 5); six sedimentation basins; 12 solids lagoons; a 243-acre intermediate forebay with a water surface area of 37 acres, a 131-acre inundation (emergency overflow) area adjacent to the intermediate forebay on Glannvale Tract, and an expanded Clifton Court Forebay. The Clifton Court Forebay would be expanded by approximately 590 acres; the north cell of the expanded Clifton Court Forebay would have a surface area of approximately 806 acres at maximum operation level, and the south cell would have surface area of approximately 1,691 acres.

When considered against this backdrop of water surface area being created as a result of the water conveyance facilities as well as the acres of aquatic habitat already analyzed under Alternative 4A, the construction of these additional acres of restoration does *not* entail a substantial increase in potential for increasing vector-borne diseases. Additionally, habitat creation would generally be sited away from densely populated areas, and management plans under Environmental Commitment 11 *Natural Communities Enhancement and Management*, would be performed in consultation with the appropriate Mosquito Vector Control Districts to ensure MMPs are implemented to reduce mosquito breeding. Additionally, BMPs from the guidelines outlined in Appendix 3B, *Environmental Commitments, AMMs, and CMs*, would be incorporated into Alternative 4A and executed to maintain proper water circulation and flooding during appropriate times of the year (*e.g.*, fall) to prevent stagnant water and habitat for mosquitoes.

Restoration of aquatic habitat has the potential for other impacts as well, such as exposing recreationists to pathogens, or mobilizing contaminants that may bioaccumulate. While specific locations of restoration areas have not yet been established, most low-lying land suitable for restoration is unsuitable for livestock. Therefore, it is likely that the majority of land to be converted to wetlands, including this additional acreage under the proposed action, would be crop-based agriculture or fallow/idle land. Any potential increase in pathogens associated with the proposed habitat restoration and enhancement would be localized and within the vicinity of the actual restoration. This localized increase is not expected to be of sufficient magnitude and duration to result in adverse effects on recreationists because these areas would generally not support livestock and most areas would not have public access.

Habitat restoration also has the potential for mobilizing contaminants sequestered in sediments of the newly inundated floodplains and marshes. The mobilization depends on the presence of the constituent and the biogeochemical behavior of the constituent to determine whether it

could re-enter the water column or be reintroduced into the food chain. Habitat restoration under Alternative 4A, including the additional acreage under the proposed action, may occur on lands in the Delta formerly used for irrigated agriculture. The proposed habitat restoration has the potential to increase water residence times and increase accumulation of organic sediments that are known to enhance methylmercury bioaccumulation in biota in the vicinity of the restored habitat areas. Environmental Commitment 12, which requires development of sitespecific mercury management plans as restoration actions are implemented, would guide the design of restoration sites. Bioaccumulation of pesticides and/or methylmercury in the tidal and nontidal restoration areas are not expected to substantially affect public health because of the localized nature of pesticide bioaccumulation, and because current OEHHA standards would continue to be implemented for the consumption of fish with increased body burdens of mercury. Environmental Commitment 12, Methylmercury Management, would be implemented to reduce methylmercury production in restored habitats. There would not be any change to public health impacts from the additional delta smelt habitat or riparian natural community acreage.

Transportation

The Final EIR/EIS disclosed the impacts on transportation within the study attributable to construction and operation of Alternative 4A. The BiOps' terms and conditions would increase construction-related traffic on surface roadways by limiting the use of barges while increasing the amount of delta smelt habitat restoration, and consequently creating the need for additional acres of grassland and riparian natural habitat to be restored as well.

Reducing the use of barges would result in an increase in the number of truck trips to transport materials and equipment to construction sites. As discussed in Final EIR/EIS Chapter 19 Transportation, construction-related traffic would result in a significant impact on level-ofservice and on various roadway segments. Substituting surface transportation for barges is expected exacerbate congestion on roadways within the study area and lead to increased damage of roadway surfaces. Measures to reduce these impacts, but not to a less than significant level, are described in the Final EIR/EIS and include developing a roadway management plan, limiting construction related traffic to avoid higher use periods, and repairing damage.

Increasing the amount of acreage required for the restoration actions outlined in the BiOps would also result in an increase in the number of construction-related trips within the study area. The increase in construction-related trips would adversely affect level-of-service on some roadways as well as damage roadway surfaces. As noted above, these impacts were considered significant in the Final EIR/EIS, and measures will be implemented to reduce these adverse effects but not to a less than significant level absent cooperation from third parties from whom agreements would be needed, which cannot be guaranteed. Although considered significant, the relative contribution to roadway congestion made by these trips would be small when compared to the amount of traffic already being generated by construction of the water conveyance facilities.

Air Quality

Construction of an increased amount of habitat restoration under Alternative 4A would result in increased criteria pollutant and greenhouse gas emissions from operating construction equipment. Emissions associated with habitat restoration is estimated for Alternative 4A in the Final EIR/EIS in Chapter 22, Air Quality and Greenhouse Gas Emissions., under Impacts AQ – 24, 25, 26 and 27. These impacts address emissions effects related to criteria pollutants, particulate matter, odors and greenhouse gas emissions. An increase in construction-related emissions and odors from additional the additional habitat restoration proposed for Alternative 4A would not substantially change the emissions estimates reported in the Final EIR/EIS because of the magnitudes of emissions already estimated compared to the potential emissions increases from tidal, riparian and grassland habitat construction. None of the significance conclusions would change and all of the mitigation measures proposed to reduce significant effects would be applicable to the increased emissions estimates.

Noise

The need for an additional 1,533 acres of delta smelt habitat, 1,022 acres of grassland natural community, and 20 acres of riparian natural community would generate additional increases in ambient noise levels from restoration and enhancement activities that require heavy-duty equipment and construction vehicles. The effect would vary according to the type of construction equipment and techniques used in construction of the specific Environmental Commitment, the location and timing of the actions called for in the Environmental Commitment, and the noise environment at the time of implementation. This impact (NOI-4) was previously identified as being significant and unavoidable, even with application of Mitigation Measures NOI-1a and NOI-1b. With the additional restoration acreages, this would continue to be the case. However, the increased acreage does not translate into a *substantial* increase in the severity of any previously-identified impacts, such that recirculation would be required. The impacts from noise due to facility construction (NOI-1) already affect a significant number of receptors, and were significant and unavoidable before the increased level of impact due to the need for more delta smelt habitat, grassland and riparian natural community; and these impacts will remain significant and unavoidable with the new acreage. When considered against this backdrop, the construction of these additional acres of restoration does *not* entail a substantial increase in impacted receptors.

All of these significant impacts are subject to mitigation, which will reduce their severity, though not to a less than significant level. The increased noise impacts resulting from additional restoration will trigger increased mitigation efforts, particularly under Mitigation Measure NOI-1a and NOI-1b, which require noise-reducing construction practices and development of a complaint/response tracking program, would reduce noise impacts on sensitive land uses.

Noise levels during implementation of Environmental Commitments 4, 7, and 8, are expected to vary according to the type of construction equipment and techniques used, but may exceed the daytime noise threshold within 1,200 feet of an active restoration work area and the nighttime threshold within 2,800 feet. The impact of exposing receptors to noise increases above established thresholds would be significant. However, it is not anticipated that feasible measures will be available in all situations to reduce construction noise to levels below the applicable thresholds.

In summary, even without the additional delta smelt habitat agreed by DWR after consultation with USFWS and CDFW, and the additional acreage of grassland natural community and riparian natural community needed to mitigate the added delta smelt habitat, the construction of facilities under Alternative 4A would exceed daytime and nighttime noise thresholds for a significant number of sensitive receptors. Habitat restoration pursuant to Environmental Commitments 3, 4, 6–11, 15, and 16 would also require restoration of up to 15,836 acres and the creation of up to 4.6 linear miles of channel margin habitat, all of which would have noise impacts. This impact would continue to be significant and unavoidable, but even with the additional up to 2,577 acres of restoration, in light of the existing amount of construction that would occur for the water conveyance facilities and the already analyzed restoration activities, this additional amount of restoration would not present a "substantial increase in the severity" of these previously identified noise effects.

Groundwater

As described in Chapter 7, Groundwater, tidal habitat restoration could result in groundwater impacts. Implementation of EC 4 could result in increased frequency of inundation of areas associated with the proposed tidal habitat, which would result in increased groundwater recharge. Such increased recharge could result in groundwater level rises in some areas. More frequent inundation would also increase seepage. Even with the increased acreage of tidal habitat restoration, this impact would be reduced to a less-than-significant level with the implementation of Mitigation Measure GW-5 by identifying areas where seepage conditions have worsened and installing additional subsurface drainage measures, as needed.

This could result in changed agricultural production in certain areas due to altered groundwater levels. Additionally, construction activities and the permanent footprints associated with land acquired for habitat restoration or enhancement could create a significant impact on agriculture by converting Important Farmland to other uses through changes to groundwater elevation and seepage or disruption of drainage and irrigation facilities. As noted earlier, however, impacts to agricultural lands have previously been recognized as significant and unavoidable. And the increased acreage of impacts due to potential changes in groundwater levels would not cause a substantial increase in the severity of these impacts. As also noted earlier, total agricultural acreage losses could run to substantially more than 20,000 acres.

Any impacts related to increased inundation frequency in restoration areas on groundwater quality would remain the same. The flooding of large areas with saline or brackish water would result in significant impacts on groundwater quality beneath or adjacent to flooded areas. It would not be possible to completely avoid this effect. However, if water supply wells in the vicinity of these areas are not useable because of water quality issues, Mitigation Measure GW-7 is available to address this effect, but the impact would remain significant and unavoidable. Although the need for 1,533 acres of additional delta smelt habitat and 20 additional acres of riparian natural community will increase the extent of the proposed project's impacts on groundwater quality, the increased acreage does *not* translate into a *substantial* increase in the severity of any previously-identified impacts, such that recirculation would be required.

Water Quality

The construction-related effects of the proposed action described in the Biological Opinions and draft 2081(b) ITP on water quality would be the same as those described for Alternative 4A, which were determined to be less than significant. The amount of tidal habitat restoration under the proposed action would be somewhat greater than that described for Alternative 4A. However, the new tidal habitat restoration area effects on water quality are expected to be generally the same as those described for Alternative 4A. The amount of new habitat to be created would be small compared to the areal extent of existing tidal habitat and tidal volume of the Delta, such that it would not be expected to significantly alter the various source waters' contribution of water quality constituents/parameters of concern (ammonia, boron, bromide, chloride, DO, EC, DOC, pathogens, pesticides, phosphorus, trace metals, TSS, selenium and *Microcystis*) at Delta assessment locations, relative to that projected for Alternative 4A. The increased restoration acreages may in some cases have a beneficial effect on certain water quality constituents, due to a reduction in discharges of agricultural field drainage, which can have elevated boron, chloride, and EC concentrations. Additionally, there could be additional reduction in pesticide use throughout the Delta due to slightly greater conversion of agricultural land to natural landscapes. The potential for increases in methylmercury concentrations in the Delta and uncertainties related to site specific restoration conditions remain, and therefore, this impact continues to be significant and unavoidable despite Environmental Commitment 12. Thus the effects of proposed action would be consistent with the Final EIR/EIS findings for Alternative 4A.

Fish and Aquatic Resources

Construction of tidal habitat under Alternative 4A could result in short-term effects on fish from construction of coffer dams, pile driving and shoreline construction needed for tidal and riparian restoration, but would be localized, sporadic, and of low magnitude; such effects would be avoided by limiting the frequency, duration, and spatial extent of in-water work and with implementation of environmental commitments (see Appendix 3B, Environmental Commitments, AMMs, and CMs) as well as relevant mitigation measures (Mitigation Measures AQUA-1a and AQUA-1b).

The increases in tidal habitat to 1,828 acres and riparian habitat to 271 acres, as described above, during ESA consultation would slightly increase the potential construction impacts on listed and other fish species as described in Impact AOUA-7 for Delta smelt and in Impacts AQUA-25, 43, 61, 79, 97, 115, 135, 151, 169, 187, and 205 for other listed and non-listed fish species. The potential effects to fish species from increased restoration construction would be similar to the analyses provided for Alternative 4A, because the assumed construction methods for these habitat types would be similar to those described for Alternative 4A and all of the construction effects would be reduced as described under Alternative 4A. Therefore, the potential impact of increased habitat restoration activities under the proposed action would be less than significant because this increased restoration acreage would not substantially reduce fish habitat, restrict their range, or interfere with their movement. The effect of restoration construction activities on the bioavailability of contaminants is expected to be minimal, as the effects would likely be localized, sporadic, and of low magnitude. No additional impacts on listed or non-listed fish species would be expected related to increases in grasslands habitat restoration because the potential restoration areas would not directly or indirectly effect fish or their habitat.

Land Use

Implementing the provisions of the BiOps would require restoration of aquatic habitat in addition to that discussed in the Final EIR/EIS. As indicated in Final EIR/EIS Chapter 13, Land Use, construction and operation of the water conveyance facilities may result in incompatibilities with land use designations and conflicts with existing land use designations. Increasing the amount of land restored to meet the conditions required by the BiOps could result in an increase in conflicts with existing land use designations and potential incompatible land uses. These effects were fully addressed in the Final EIR/EIS and the amount of additional lands that would be restored is not expected to substantially increase incompatible land uses. It is also noted that the restoration sites would be located away from Delta communities and as such would not be expected to result in a potential incompatible land use adjacent to these communities.

The BiOps also require that the use of barges for construction purposes would be restricted to avoid impacts on aquatic species and that surface transportation would be used transport materials to construction sites at higher levels than discussed in the Final EIR/EIS. The impacts of using surface transportation on land uses within the study was addressed in the Final EIR/EIS. The document concluded that impacts on adjacent land uses would be significant and unavoidable but proposed measures to reduce these impacts.

Socioeconomics

As described in Chapter 16, Socioeconomics, construction and operation of Alternative 4A could result in changes in employment, income, property tax revenues, and community character. Implementing the requirements of the proposed action may result in additional impacts on these socioeconomic characteristics. Chapter 16 was primarily a NEPA chapter, as CEQA is not concerned with social or economic effects except to the extent that they are linked to reasonably foreseeable effects on the physical environment. Thus, recirculation could not be required under CEQA even in the face of totally new economic or social effects or substantial increases in the severity of any previously-disclosed economic or social effects.

Losses in agricultural-related employment and income may be slightly greater than reported for Alternative 4A because additional agricultural land would be converted to meet the restoration/mitigation requirements stipulated in the BiOps. This change is not expected to be substantially larger than the losses reported in the Final EIR/EIS because the additional lands required for these measures would be small in comparison to the total acreage of agricultural land converted under Alternative 4A. In addition, these losses may be partially offset by employment opportunities associated with implementing the restoration requirements. This is not a CEQA issue, in any event.

Property tax revenues within the study area could decrease as a result of the additional purchase of private lands required for restoration purposes. The loss of property tax revenues would not substantially change the losses estimated in the Final EIR/EIS as the increase in private lands purchased would be small compared to the acreage affected by the entire project. In addition, the project proponents have committed to offsetting property tax revenues generated by lands required for the proposed project. This is not a CEQA issue, in any event.

The requirements stipulated in the BiOps are not expected to result in additional adverse changes to the character of communities with the study area. The additional changes in land uses would be located primarily on agricultural lands and would not directly affect communities within the study area.

Recreation

Implementing the provisions of the BiOps would require restoration of aquatic habitat in addition to that discussed in the Final EIR/EIS and the substitution of surface transportation for barges to haul materials to construction sites. These change could affect recreation opportunities occurring within the study area in addition to those described Final EIR/EIS Chapter 15 Recreation.

Restoration of additional aquatic habitat as required by the BiOps could result in an adverse impact on recreation opportunities occurring within or adjacent to the areas being restored. The potential impacts on recreation were addressed in the Final EIR/EIS as the loss recreation opportunities and experiences (Impacts REC-2, REC-2, and REC-9). The restoration of additional lands is not expected to change these impact conclusions because the additional land to be restored is small in comparison to the entire construction footprint. In addition, Impact REC-2 recognizes that the effect of the proposed project on recreation opportunities would be considered significant and unavoidable but could be partially addressed by implementing mitigation. This mitigation could also be applied to help reduce the additional impact on recreation that may occur when terms and conditions of the BiOps are implemented.

The BiOps also require that the use of barges for construction purposes be restricted to avoid impacts on aquatic species. Final EIR/EIS Impact REC-3 disclosed the adverse impact construction of the proposed project, including use of barges, could have on boating opportunities within the study area. The substitution of surface transportation for barges could result in a reduction in the intensity and duration of the impact on recreational navigation; however, this impact is expected to remain significant and unavoidable.

Aesthetics

The increased need for tidal aquatic, riparian and grassland habitat associated with Alternative 4A would require additional modification of land and cover types in aquatic environments, adjacent to rivers and sloughs and in terrestrial areas. This habitat restoration could result in changes in views from public or high traffic areas in the Delta that could have direct and indirect effects on the Delta aesthetic environment. These effects related to habitat restoration actions have already been addressed in Chapter 17, Aesthetics and Visual Resources, Impact AES-6, which discloses that significant impacts in some locations would occur before and after mitigation measures are applied because of the magnitude of restoration actions and there potential visibility to public viewing areas. The effect of increasing habitat restoration to some degree under Alternative 4A would not substantially increase the severity of these impact and would not change the conclusion that significant and unavoidable impacts could result from construction actions. All of the mitigation measures identified under Impact AES-6 could potentially be applied to the additional habitat restoration areas to reduce these effects as much as possible.

Cultural

The increased need for tidal aquatic, riparian and grassland habitat associated with Alternative 4A would result in additional ground disturbance that could potentially affect or disturb additional archaeological and historic properties. These types of cultural resources effects have already been disclosed in Chapter 18, Cultural Resources of the Final EIR/EIS; and although additional habitat restoration could create additional effects on resources, it is not expected that the magnitude of effects would increase substantially based on the moderate changes in restoration proposed.

These effects are already disclosed in Impact CUL-7 and are considered significant and unavoidable because of the magnitude of the project to affect known and unknown resources. Mitigation Measure CUL-7 is provided to reduce effects of restoration action on archaeological and historic properties as much as possible.

Construction of water conveyance facilities under Alternative 4A would already have an impact on 10,865 acres with a high potential for buried archaeological sites. When considered against this backdrop of disturbed acreage as a result of the water conveyance facilities as well as the acres of restoration already analyzed under Alternative 4A, the construction of these additional acres of restoration does *not* entail a substantial increase in potential for increasing impacts to cultural resources.

Surface Water

The assessment of restoration-related impacts on surface water included in Chapter 6 of the Final EIR/EIS identified less than significant/not adverse impacts under Alternative 4A. The surface water evaluation analyzes changes in existing drainage patterns, surface runoff, and risk to people or structures due to increased flooding as a result of restoration activities. Potential effects as a result of alternations to existing drainage, runoff, stream courses, and flood flow conditions would be avoided due to project requirements to comply with USACE, CVFPB, and DWR regulations to ensure habitat restoration projects are flood neutral. In addition, Mitigation Measures SW-4 and SW-8 would further offset effects to less than significant/not adverse levels.

While the footprint of the additional habitat restoration included in the proposed action is greater than what is analyzed for Alternative 4A in the Final EIR/EIS, the increase in acreage would not substantially increase the severity of impacts identified in the Final EIR/EIS. Consistent with the Chapter 6 analysis, DWR will be required to comply with USACE, CVFPB, and DWR regulations to ensure flood neutrality, in addition to implementing the mitigation measures described above. As a result, impacts of the proposed action would be consistent with the findings (*i.e.*, not adverse/less than significant) in the Final EIR/EIS.

Energy

The assessment of construction- and restoration related-impacts on energy included in Chapter 21 of the Final EIR/EIS identified less than significant/not adverse impacts under Alternative 4A. The project would be constructed and operated in compliance with regulations related to energy resources enforced by Federal Energy Regulatory Commission (FERC) and other federal

agencies. The project would not conflict with the Warren-Alquist Act or State CEQA Guidelines, Appendix F, Energy Conservation. Similarly, the additional restoration included in the proposed action would also need to comply with the regulations stated above. As a result, impacts of the proposed action would be consistent with the findings (*i.e.*, not adverse/less than significant) in the Final EIR/EIS.

Minerals

The sample Initial Study Checklist found in Appendix G to the CEQA Guidelines impliedly treats the loss of access to mineral resources as a kind of environmental effect subject to CEQA. Lead agencies thus typically assume that such lost access can be an environmental effect that is sometimes significant. This approach reflects the policy set forth in the Surface Mining and Reclamation Act (SMARA) (Cal. Pub. Resources Code, § 2710-2796.) That statutory scheme is intended to preserve access to valuable mineral resources so that they can be exploited when needed for the state economy. The real underlying effects here could just as easily have been considered to be purely economic in character. The capture and use of minerals, after all, entails adverse environmental consequences. Even so, the EIR/EIS addresses the topic of loss of access to mineral under both NEPA and CEQA.

The assessment of potential restoration-related effects to minerals included in Chapter 26 of the Final EIS/EIS identified both less than significant/not adverse and significant and unavoidable impacts under Alternative 4A, depending on the specific impact.

Less Than Significant/Not Adverse Impacts

Impacts related to the potential loss of availability of known aggregate resources and locally important aggregate resource sites (e.g., mines) were determined to be less than significant/not adverse after mitigation (for impacts to locally important aggregate sites). Restoration activities would have the potential to affect important aggregate resource sites and reduce the availability of important aggregate resources. Mitigation Measure MIN-11 would address impacts to important aggregate resource sites by considering mitigation strategies, such as avoiding the affected sites and choosing areas that will not impact such mines, directly or indirectly, or downsizing the area to be restored and thereby reducing impacts to the affected mines to less than significant. DWR may also choose to purchase the permitted aggregate volume from mines affected by restoration for construction use to ensure available aggregate will not be lost due to construction of restoration sites. Regarding the potential loss of availability of known aggregate resources, the amount of aggregate resources needed for restoration activities would be used over a period of years and would be expected to be within the available resources of the study area and adjacent aggregate resource study areas discussed in Section 26.1.2.1, Aggregate Resources, and identified in Table 26-1. There would be no depletion (loss of availability) of regional aggregate supplies substantial enough to cause remaining supplies to be inadequate for future development or to require development of new aggregate sources to meet future demand.

While the footprint of the additional habitat restoration included in the proposed action is greater than what is analyzed for Alternative 4A in the Final EIR/EIS, the increase in

acreage is not expected to substantially increase the severity of impacts identified in the Final EIR/EIS. Consistent with the Chapter 26 analysis, DWR would implement Mitigation Measure MIN-11 to reduce impacts to locally important aggregate resource sites to a less than significant/not adverse level. For the same reasons described above, the potential loss of availability of known aggregate resources would result in less than significant/not adverse effects due to no substantial depletion (loss of availability) of regional aggregate supplies which would cause remaining supplies to be inadequate for future development or to require development of new aggregate sources to meet future demand. As a result, impacts of the additional habitat restoration would be consistent with the findings (i.e., not adverse/less than significant) in the Final EIR/EIS. Notably, moreover, even this heightened use of aggregate resources (from additional habitat restoration) is relatively small compared with the level of aggregate resource use that could occur under many other alternatives addressed in the Final EIR/EIS. For example, Alternative 4, from which Alternative 4A was derived, includes 65,000 acres of tidal restoration, which would require substantially more aggregate resources compared to the proposed action. Note that impacts under Alternative 4 are considered less than significant/not adverse as well (See Final EIR/EIS, pp. 26-85 and 26-86). This level of impact would occur under several other alternatives from the Draft EIR/EIS, many of contemplated approximately the same amount of habitat restoration as Alternative 4. (See Table 3-4 in Chapter 3 of the Final of the EIR/EIS). It is indisputable, then, that the increased level of impact associated with Alternative 4A as modified by the June 2017 USFWS Biological Opinion is well within the range of impacts described within the broad range of alternatives addressed in the Final EIR/EIS.

Significant and Unavoidable Impacts

Impacts related to the potential loss of availability and extraction potential from natural gas fields associated with restoration activities under Alternative 4A were determined to be significant and unavoidable/adverse in the Final EIR/EIS. Because locations for the restoration actions have not been determined, the extent of the effect of implementing restoration actions on locally important natural gas wells cannot be precisely determined. It is anticipated that restoration actions expected under Alternative 4A would result in adverse effects on locally important natural gas wells and although the additional restoration proposed as a result of the Section 7 process would increase the acreage than what was analyzed in the proposed Final EIR/EIS, it is not expected to cause a substantial increase in the severity of this impact. Natural gas wells located in areas that would be permanently inundated could remain productive with the use of protective cages or platforms although not in instances where it would not be cost effective. It is possible that any producing wells in proposed permanent inundation areas would need to be abandoned because modifications to these wells would not be feasible. Approximately 233 wells are located in the ROAs where restoration could occur; however, given the relatively small acreage of tidal and nontidal habitat restoration proposed under Alternative 4A compared to the large extent of ROAs, it is not expected that a large number of wells would be affected and increasing the restoration acreage would not change this conclusion. Natural gas wells in areas that would remain uplands could remain operational and unaffected if they are avoided when restoration activities are implemented and access to the gas well can be maintained. Maintaining access to an oil or gas well is defined by the California Department

of Conservation as (1) maintaining rig access to the well, and (2) not building over, or in close proximity to, the well (California Department of Conservation, Division of Oil, Gas, and Geothermal Resources 2007). Mitigation Measures MIN-5 and MIN-6 would be available to reduce these impacts, though not to less than significant/not adverse levels due to uncertainty as to whether the mitigation can assure that all or a substantial portion of a county's existing natural gas wells will remain accessible after implementation of Alternative 4A.

Notably, even this increased potential to preclude the use of certain natural gas wells is relatively small compared with the level of interference that could occur under many other alternatives addressed in the Final EIR/EIS. For example, Alternative 4, from which Alternative 4A was derived, includes 65,000 acres of tidal restoration, which would likely create access issues for many more natural gas wells (depending on the location of restoration sites) than would occur under the proposed action even as modified by the 2017 USFWS Biological Opinion. This level of impact would occur under several other alternatives from the Draft EIR/EIS, many of contemplated approximately the same amount of habitat restoration as Alternative 4. (See Table 3-4 in Chapter 3 of the Final of the EIR/EIS). It is indisputable, then, that the increased level of impact associated with Alternative 4A as modified by the June 2017 USFWS Biological Opinion is well within the range of impacts described within the broad range of alternatives addressed in the Final EIR/EIS.

Geology and Seismicity

The assessment of restoration-related impacts on geology and seismic effects included in Chapter 9 of the Final EIR/EIS identified less than significant/not adverse impacts under Alternative 4A. The geology and seismicity evaluation analyzed loss of property, personal injury, or death resulting from structural failure caused by rupture of a known earthquake fault, strong seismic shaking, seismic-related ground failure, slope instability, and seiche or tsunami at Restoration Opportunity Areas (ROAs).

While the footprint of the additional habitat restoration included in the proposed action is greater than what is analyzed for Alternative 4A in the Final EIR/EIS, the increase in acreage is not expected to substantially increase the severity of impacts identified in the Final EIR/EIS. Consistent with the Chapter 9 analysis and project commitments, DWR would ensure that the geotechnical design recommendations are included in the design of project features and construction specifications to minimize the potential effects from seismic events, slope instability, ground failure, and the presence of adverse soil conditions. DWR would also ensure that the design specifications are properly executed during implementation. Conformance to these and other applicable design specifications and standards would ensure that the hazards associated with seismic shaking and fault rupture, slope instability, ground failure, and tsunamis/seiches would not jeopardize the integrity of levees and other features at the ROAs, and would not create an increased likelihood of loss of property, personal injury or death of individuals in the ROAs. Because of the project commitments and requirements described

above, impacts of the additional habitat restoration would be consistent with the findings (*i.e.,* not adverse/less than significant) in the Final EIR/EIS.

Soils

The assessment of restoration–related impacts on soils included in Chapter 10 of the Final EIS/EIS identified both less than significant/not adverse and significant and unavoidable impacts under Alternative 4A, depending on the specific impact.

Less Than Significant/Not Adverse Impacts

Property loss, personal injury, or death impacts related to soil erosion, ground subsidence and soil instability, and compressive or expansive soils were determined to be less than significant/not adverse for Alternative 4A due to project commitments to design and construct the facilities according to state and federal design standards and guidelines. Geotechnical studies would be conducted at all the ROAs to identify the types of soil stabilization that should be implemented to ensure that levees, berms, and other features are constructed to withstand subsidence and settlement and to conform to applicable state and federal standards. The site-specific studies and testing would identify specific areas where soil properties, including soil compressibility, may require special consideration during construction of specific features within ROAs (see Appendix 3B, Environmental Commitments, AMMs, and CMs). Conformity with USACE, CBC, and other design standards for construction on expansive, corrosive and/or compressible soils would prevent adverse effects associated with construction on top of such soils. With respect to erosion, DWR would be required to obtain coverage under the General Permit for Construction and Land Disturbance Activities, necessitating the preparation of a site-specific stormwater pollution prevention plan (SWPPP) and an erosion control plan. Proper implementation of the requisite SWPPP, site-specific best management practices (BMPs), and compliance with the General Permit would ensure that accelerated water and wind erosion as a result of implementing environmental commitments would not have adverse or significant effects. Implementation of the additional habitat restoration included in the proposed action would not substantially increase the severity of impacts identified in the Final EIR/EIS due to the same project commitments and requirements described above. As a result, impacts of the proposed action would be consistent with the findings (*i.e.*, not adverse/less than significant) in the Final EIR/EIS.

Significant and Unavoidable Impacts

Impacts related to loss of topsoil associated with restoration activities under Alternative 4A were determined to be significant and unavoidable/adverse in the Final EIR/EIS as a result of excavation, overcovering, and inundation (to create aquatic habitat areas) of topsoil over extensive areas, thereby resulting in a substantial loss of topsoil. Mitigation Measures SOILS-2a and SOILS-2b would be available to reduce these impacts, though not to less than significant/not adverse levels because topsoil would still be permanently lost over extensive areas.

The proposed action includes an additional 1,533 acres of tidal habitat restoration, which is expected to result in similar, though somewhat worsened, effects to topsoil as described

above. However, viewed in context, in light of the already very large extent of topsoil loss estimated in the Final EIR/EIS for construction and restoration activities (*i.e.*, roughly 8,590 acres), an additional 1,533 acres of tidal habitat restoration would not substantially increase the severity of the impacts identified in the Final EIR/EIS. Importantly, the original impact was significant and unavoidable, and the new impact still fits that description, though the amount of affected acreage has increased somewhat. In addition, Mitigation Measures SOILS-2a and SOILS-2b would be available to reduce the severity of these impacts, though not to less than significant/not adverse levels. In light of these considerations, impacts of the proposed action would be consistent with the findings in the Final EIR/EIS. Notably, moreover, even this heightened level of top soil loss is relatively small compared with the level of top soil loss that could occur under many other alternatives addressed in the Final EIR/EIS. For example, Alternative 4, from which Alternative 4A was derived, was projected to lead to a minimum of 77,600 acres of top soil loss, much of it attributable to large-scale, long-term restoration activities associated with that alternative. (See Final EIR/EIS, pp. 10-107) This level of impact would occur under several other alternatives from the Draft EIR/EIS, many of contemplated approximately the same amount of habitat restoration as Alternative 4. (See Table 3-4 in Chapter 3 of the Final of the EIR/EIS) It is indisputable, then, that the increased level of impact associated with Alternative 4A as modified by the June 2017 USFWS Biological Opinion is well within the range of impacts described within the broad range of alternatives addressed in the Final EIR/EIS.

In short, the relatively modest increase in the severity of the originally-identified impact does not require recirculation, as the new information regarding the somewhat heightened level of impact has not "deprive[d] the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement." (State CEQA Guidelines Section 15088.5[a].) The underlying impact for Alternative 4A was discussed in the publicly-circulated RDEIR/SDEIS, the additional acreage associated with the increased need for delta smelt habitat has not triggered any new or different mitigation, and the new level of impact for Alternative 4A is considerably smaller than levels of impacts that would occur under numerous other alternatives included in the Final EIR/EIS.

Hazards and Hazardous Materials

The assessment of potential increased risk of hazards due to restoration activities included in Chapter 24 of the Final EIS/EIS identified both less than significant/not adverse and significant and unavoidable impacts under Alternative 4A, depending on the specific impact.

Less Than Significant/Not Adverse Impacts

It was determined effects related to the potential creation of a substantial hazard to the public or the environment through the release of hazardous materials or by other means as a result of restoration actions would be less than significant/not adverse. Habitat restoration under Alternative 4A could result in multiple potentially hazardous effects related to the release of or exposure to hazardous materials or other hazards, including increased production, mobilization, and bioavailability of methylmercury; release of existing contaminants (*e.g.*, pesticides in agricultural land); air safety hazards; and wildfires.

However, these effects would be reduced to less than significant/not adverse levels by implementing Mitigation Measures HAZ-1a, HAZ-1b, UT-6a, UT-6c, and TRANS-1a and other environmental commitments described in Appendix 3B, *Environmental Commitments, AMMs, and CMs*.

Implementation of the additional habitat restoration included in the proposed action would not substantially increase the severity of impacts identified in the Final EIR/EIS due to the same mitigation requirements and project commitments described above. While the potential for impacts would be somewhat greater due to the increase in habitat restoration activities, implementation of the measures described above would ensure no substantial hazards to the public or the environment would occur. As a result, impacts of the proposed action would be consistent with the findings (*i.e.*, not adverse/less than significant) in the Final EIR/EIS.

Significant and Unavoidable Impacts

Chapter 24 indicates potential effects due to increased bird-aircraft strikes as a result of restoration activities under Alternative 4A are significant and unavoidable/adverse. Mitigation Measure HAZ-8 could reduce the severity of this impact by minimizing bird strike hazards, but this impact would not be reduced to a less-than-significant level because of the inherent uncertainty related to bird strike risks for these future projects. The proposed action includes an additional habitat restoration, which is expected to result in similar, though somewhat worsened, effects related to bird-aircraft strikes. However, viewed in context, in light of the already very large extent of habitat restoration analyzed in the Final EIR/EIS (*i.e.*, up to 15,836 acres), an additional habitat restoration would not substantially increase the severity of the impacts identified in the Final EIR/EIS. Importantly, the original impact was significant and unavoidable, and the new impact still fits that description, though the amount of affected acreage has increased somewhat. In addition, Mitigation Measure HAZ-8 would be available to reduce the severity of these impacts, though not to less than significant/not adverse levels. In light of these considerations, impacts of the proposed action would be consistent with the findings in the Final EIR/EIS.

Notably, moreover, even this increased level of impacts on hazards and hazardous materials is relatively modest compared with the level of impacts related to hazards and hazardous materials that could occur under many other alternatives addressed in the Final EIR/EIS. For example, Alternative 4, from which Alternative 4A was derived, included substantially increased large-scale, long-term restoration, which would be projected to lead to greater potential for impacts related to hazards and hazardous materials, especially as related to bird-aircraft strikes. (See Final EIR/EIS, Chapter 24, pp. 24-174.) These levels of impacts would occur under several other alternatives from the Draft EIR/EIS, many of contemplated approximately the same amount of habitat restoration as Alternative 4. (See, Table 3-4, Chapter 3 of the Final EIR/EIS.) It is indisputable, then, that the increased level of impact associated with Alternative 4A as modified by the June 2017 USFWS Biological Opinion is well within the range of impacts described within the broad range of alternatives addressed in the Final EIR/EIS.

The relatively modest increase in the severity of the originally-identified impacts do not require recirculation, as the new information regarding the somewhat heightened level of impact has not "deprive[d] the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement." (State CEQA Guidelines Section 15088.5[a].) The underlying impact for Alternative 4A was discussed in the publicly-circulated RDEIR/SDEIS, and the additional acreage associated with the increased need for delta smelt habitat has not triggered any new or different mitigation.

Paleontological Resources

The assessment of restoration- related impacts on paleontological resources (Paleo-2) included in Chapter 27 of the Final EIR/EIS identified a significant impact from ground disturbing activities; however, Mitigation Measures (Mitigation Measures PALEO-1b and PALEO-1d for all shallow ground-disturbing activities and Mitigation Measures PALEO-1a through PALEO-1d for all deeper ground-disturbing activities) are available to reduce that impact to less than significant/not adverse.

Ground-disturbing activities associated with tidal marsh restoration range from relatively shallow, localized excavation to deep or extensive excavation. Two types of activities involve deeper excavation:

Modify existing land elevations through grading and filling or subsidence reversal. Relocate existing roads and utilities to support construction and post-construction activities at the restoration site or services to adjacent lands protected by levees.

Sensitive Pleistocene deposits occur at the surface or in the shallow subsurface in all the Restoration Opportunity Areas (ROAs), except the South Delta ROA (Figures 27-2 and 3-1). Shallow, localized excavation in areas where sensitive units occur at the surface could disturb paleontological resources in these units. Deeper or extensive excavation could disturb sensitive units in all of the ROAs.

While the footprint of the additional habitat restoration included in the proposed action is greater than what is analyzed for Alternative 4A in the Final EIR/EIS, the increase in acreage would not substantially increase the severity of impacts identified in the Final EIR/EIS. DWR would implement Mitigation Measures PALEO-1b and PALEO-1d for all shallow ground-disturbing activities, and Mitigation Measures PALEO-1a through PALEO-1d for all deeper ground-disturbing activities to ensure that unique or significant paleontological resources in the alternative footprint are systematically identified, documented, avoided or protected from damage where feasible, or recovered and curated so they remain available for scientific study and would reduce these impacts to a less-than-significant level. The increase in habitat restoration would, therefore, increase the amount of ground disturbance but would not create new significant impacts or require additional mitigation measures not already disclosed in the Final EIR/EIS. The current mitigation approach would be applicable to the additional habitat restoration as well. Because of the Mitigation measures described above, impacts of the additional habitat restoration would be consistent with the findings (*i.e.*, not adverse/less than significant) in the Final EIR/EIS.

Notably, moreover, even this increased level of impact on paleontological resources is relatively modest compared with the level of impacts related to ground disturbing activities that could occur under many other alternatives addressed in the Final EIR/EIS. For example, Alternative 4, from which Alternative 4A was derived, included substantially increased large-scale, long-term restoration, which would be projected to lead to greater potential for impacts related ground disturbing activities (See Final EIR/EIS, Chapter 27, pp. 27-68.) This level of impact would occur under several other alternatives from the Draft EIR/EIS, many of which contemplated approximately the same amount of habitat restoration as Alternative 4. (See, Table 3-4, Chapter 3 of the Final EIR/EIS.) It is indisputable, then, that the increased level of impact associated with Alternative 4A as modified by the June 2017 USFWS Biological Opinion is well within the range of impacts described within the broad range of alternatives addressed in the Final EIR/EIS. The relatively modest increase in the severity of the originally-identified impact does not require recirculation, as the new information regarding the somewhat heightened level of impact has not "deprive[d] the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement." (State CEOA Guidelines Section 15088.5[a].) The underlying impact for Alternative 4A was discussed in the publicly-circulated RDEIR/SDEIS, the additional acreage associated with the increased need for delta smelt habitat has not triggered any new or different mitigation, and the new level of impact for Alternative 4A is considerably smaller than levels of impacts that would occur under numerous other alternatives included in the Final EIR/EIS.

Public Services

The assessment of restoration-related impacts on public services and utilities included in Chapter 20 of the Final EIR/EIS identified significant and unavoidable/adverse impacts under Alternative 4A, specifically related to potential relocation of utility infrastructure. The impact related to utility infrastructure is due to the fact that locations have not been determined, nor have construction details been settled on for restoration activities. The Chapter 20 evaluation analyzes impacts to public services, water and waste water, solid waste, and electricity and natural gas as a result of restoration activities. Potential effects would be minimized by implementing various environmental commitments described in Appendix 3B, Environmental Commitments, AMMs, and CMs. In addition, implementation of the restoration components is not likely to require alteration or construction of new government facilities due to increased need for public services and utilities. Implementation of Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of impacts related to potential relocation of utility infrastructure, though not to less than significant/not adverse levels. If, however, coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the impact would be less-than-significant.

The proposed action includes additional habitat restoration, which is expected to result in similar, though somewhat worsened, effects to public services. However, viewed in context, in light of the impacts discussed in the Final EIR/EIS for construction and restoration activities,

the additional habitat restoration under the proposed project would not substantially increase the severity of the impacts identified in the Final EIR/EIS. Importantly, the original impact was significant and unavoidable, and the new impact still fits that description, though the amount of acreage has increased somewhat. In addition, Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of these impacts, though not to less than significant/not adverse levels. In light of these considerations, impacts of the proposed action would be consistent with the findings in the Final EIR/EIS.

Notably, moreover, even this increased level of impact on public services, as it relates to relocation of utility infrastructure, is relatively modest compared with the level of impacts that could occur under many other alternatives addressed in the Final EIR/EIS. For example, Alternative 4, from which Alternative 4A was derived, included substantially increased large-scale, long-term restoration, which would be projected to lead to greater potential for relocation of utility infrastructure. (See Final EIR/EIS, Chapter 20, pp. 20-133.) This level of impact would occur under several other alternatives from the Draft EIR/EIS, many of the alternatives contemplated approximately the same amount of habitat restoration as Alternative 4. (See, Table 3-4, Chapter 3 of the Final EIR/EIS.) It is indisputable, then, that the increased level of impact associated with Alternative 4A as modified by the June 2017 USFWS Biological Opinion is well within the range of impacts described within the broad range of alternatives addressed in the Final EIR/EIS.

In summary, the relatively modest increase in the severity of the originally-identified impact does not require recirculation, as the new information regarding the somewhat heightened level of impact has not "deprive[d] the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement." (State CEQA Guidelines Section 15088.5[a].) The underlying impact for Alternative 4A was discussed in the publicly-circulated RDEIR/SDEIS, and the additional acreage associated with the increased need for delta smelt habitat has not triggered any new or different mitigation.

Operations³

Overview of changes in the Proposed Action Modeling Assumptions

Operations criteria for the California WaterFix Biological Opinions and draft 2081(b) ITP proposed action were developed based on the feedback from the fishery agencies on the ESA Section 7 Biological Assessment and the draft 2081(b) permit application. The proposed action includes an increase in the Delta outflow requirements in the spring months and a change in the

³ Note that the following operations section does not assess effects for every resource area analyzed in the Final EIR/EIS, but rather evaluates changes in key hydrological parameters, as well resource areas directly related to operations and hydrological conditions. Nevertheless, other resource areas which may be indirectly affected by changes in operations (*e.g.*, recreation on upstream reservoirs and in the Delta) would see similar conditions under the proposed action, relative to Alternative 4A, due to the over similarity in hydrological conditions under both scenarios (see analysis below).

south Delta export constraints in the fall months compared to the Final EIR/EIS Alternative 4A project description. Other than these two changes, modeling assumptions for Alternative 4A remained unchanged.

Changes to spring outflow requirement: In the Final EIR/S and in the BA, operational criteria included a spring outflow requirement, which required maintaining the March through May average Delta outflow that would have resulted because of export restrictions under the 2008 and 2009 biological opinions, in the absence of the California WaterFix. In the modeling included in the Final EIR/EIS and the BA, this requirement was achieved via constraining the total Delta exports in April and May per the 2009 NMFS BiOp San Joaquin River Inflow-Export Ratio (SIR i-e) constraint. For the proposed action modeling, in addition to the above restriction, an additional outflow requirement was added for March. The outflow requirement is dependent upon the hydrologic conditions in March (eight river index), as shown in the table below. Delta exports are curtailed to no less than 1500 cfs, if needed to meet the March outflow requirement. In addition, for April and May, the SJR i-e ratio constraint was removed if the Delta outflow was higher than 44,500 cfs.⁴ Changes to south Delta export constraints: In the Final EIR/EIS and in the BA, operational criteria included additional Old and Middle River (OMR) flow requirements and south Delta export restrictions during October and November. For the proposed action, these OMR flow requirements and the south Delta export restrictions were removed.

Proposed Action Modeling

A sensitivity simulation was modeled for the proposed action using CalSim II. Key CVP-SWP operations results are presented in the Figures 1- 26. Each figure compares CalSim II results for

⁴ It should be noted CDFW revised the proposed spring outflow criteria to more implementable and assessable criteria. The revised spring outflow criteria from the CDFW includes Delta outflow targets for March, April and May. The outflow targets are dependent on the forecasted hydrologic conditions (50% forecast of the 8 River Index (8RI)), for each of the three months. CDFW's spring outflow criteria is expected to result in similar outflow conditions as the 2081(b) application criteria, given that the two sets of criteria are targeting a similar level of Delta outflow during March through May and, export curtailments would be the primary mechanism to achieve the outflow targets. Therefore, the revised spring outflow criteria from CDFW is not expected to result in any new effects beyond those disclosed in the Final EIR/EIS.

the No Action Alternative⁵, the Final EIR/EIS Alternative 4A⁶ and the proposed action. As shown in the figures, the proposed action results for the CVP-SWP operations remain similar to Alternative 4A, with a few minor changes.

Upstream storage: Figures 1 through 8 compare the end of May and end of September storage conditions in Trinity Lake, Shasta Lake, Lake Oroville and Folsom Lake for the proposed action with the No Action Alternative and the Alternative 4A. As shown in the figures, the storage conditions under the proposed action are similar to Alternative 4A, and therefore, result in similar incremental changes as Alternative 4A compared to the No Action Alternative.

Delta exports: Annual Delta export changes under the proposed action compared to the No Action Alternative are similar to Alternative 4A under all water year types, as shown in the Figure 9. The proportion of the Delta exports at the north Delta diversion intakes under the proposed action are similar to Alternative 4A while the south Delta exports are slightly higher as shown in the Figures 10 through 12.

CVP-SWP Deliveries: Annual CVP and SWP deliveries under the proposed action are similar to or higher than the No Action Alternative, consistent with Alternative 4A, as shown in Figures 13 through 16.

River flows: Monthly average flows for different water year types are presented at key locations for Trinity, Sacramento, Feather, American and San Joaquin Rivers in Figures 17 through 24. River flows under the proposed action show negligible changes compared to

⁵ The following sections on operations, water quality, and fish species discuss project effects relative to future baseline conditions (i.e., No Action Alternative (NAA)), rather than the Existing Conditions (EC) baseline used in the FEIR/EIS CEQA analyses. As described in Master Response 1, FEIR/EIS, although the FEIR/EIS baselines have been labeled as the CEQA and NEPA baselines, respectively, the CEQA analysis presented in the resource chapters frequently mentions the NEPA baseline in order to fully explain the results based on the CEQA baseline. Such an approach is authorized by CEQA case law, which allows CEQA lead agencies to take future conditions, such as occur under a No Project (No Action) Alternative, into account when assessing the significance of impacts under CEQA. (See Neighbors for Smart Rail v. Exposition Metro Line Construction Authority (2013) 57 Cal.4th 439. 454; see also Master Response 1, Environmental Baselines.) Under NEPA, the effects of sea level rise and climate change (e.g., altered precipitation patterns resulting in more rain and less snow than at present) are evident both in the future condition and in the effects of the action alternatives. Under CEQA, in contrast, the absence of sea level rise and climate change in Existing Conditions results in model-generated impact conclusions that include the impacts of sea level rise and climate change in addition to the effects of the action alternatives. As a consequence, a CEOA analysis that reported these conclusions without qualification and explanation would either overstate the true effects of the action alternatives or would misleadingly suggest significant effects that are largely or exclusively attributable to sea level rise and climate change, and not to the action alternatives themselves. For these reasons, potential project effects described below are made relative to the NAA baseline to allow for a more "apples to apples" comparison in that the results of both the project and NAA include the same future assumptions (e.g., sea level rise, climate change). Furthermore, the Biological Opinions/draft 2081(b) ITP analyze project effects against a future NAA baseline and not existing conditions, which makes the FEIR/EIS NEPA analyses (*i.e.*, comparisons against the NAA) more appropriate when comparing to the Biological Opinion/ draft 2081(b) ITP effects analyses. Nevertheless, this analytical approach does not affect, nor would it change, the FEIR/EIS CEQA analysis and conclusions because the CEQA determinations are largely driven by the NEPA analyses, particularly in the aquatic resource chapters. ⁶ No Action Alternative and Alternative 4A results used in this analysis are the NAA and the PA scenarios from the CWF Biological Assessment, respectively; these results were presented in the Final EIR/EIS Appendix 5G.

Alternative 4A, indicating that the incremental changes in flows compared to the No Action Alternative would remain similar under both cases.

OMR flow: As shown in Figure 25, Old and Middle River flows under the proposed action are nearly identical to the Alternative 4A in all months except October and March. The OMR flows in October under the proposed action are slightly more negative compared to the Alternative 4A, while slightly more positive during March. These are expected changes because of the changes in the OMR and spring outflow criteria. Even with these changes the OMR flows under the proposed action are predominantly less negative or more positive than the No Action Alternative, consistent with Alternative 4A.

Delta outflow: Figure 26 compares the monthly average Delta outflow results for the proposed action to the No Action Alternative and Alternative 4A. Similar to the OMR flows, Delta outflow results differ between the two scenarios in October and March. October outflow is slightly lower under the proposed action while the outflow is higher in March, compared to Alternative 4A. However, October outflow under the proposed action remains similar to the No Action Alternative. Delta outflow remains nearly identical in other months under the two scenarios in all water year types.

Proposed Action Impact Assessment

Based on the results from the sensitivity simulation, proposed action impacts were assessed for water supply, surface water, fish and aquatic resources, and groundwater resources. The incremental changes under the proposed action compared to the No Action Alternative are assessed below.

Water Supply: For water supply, consistent with Alternative 4A, the proposed action would not impact water operation of existing SWP or CVP facilities during construction of the water conveyance facilities. As summarized above, SWP and CVP deliveries modeled under the proposed action remain similar or higher compared to the No Action Alternative, consistent with the Final EIR/EIS Alternative 4A. Given that the proposed action includes identical facilities, and similarity in the export operations compared to Alternative 4A, the findings on water transfers effects for Alternative 4A are applicable to the proposed action. Therefore, the water supply impact conclusions for the proposed action are expected to remain consistent with Alternative 4A.

Surface Water: For surface water resources in the Final EIR/EIS, changes in reservoir storage, river channel flows, and the potential for floods was assessed along with the expected changes in OMR flows. As summarized above, the end of May and end of September reservoir storage conditions for the proposed action remained similar to the Alternative 4A. Therefore, it is expected that the effects of the proposed action on storage in Shasta Lake, Folsom Lake, and Lake Oroville would be similar to those under the No Action Alternative, consistent with Alternative 4A. The summary of flow changes at key river locations indicates that the proposed action is similar to Alternative 4A on a long-term average basis and in the wet years, when high flows occur. Therefore, the proposed action would not result in an increase in potential risk for flood management compared to the No

Action Alternative, consistent with Alternative 4A. The results summarized above indicate that OMR reverse flow conditions under the proposed action would be reduced or remain similar in fall, winter and spring months compared to the No Action Alternative, consistent with Alternative 4A. Surface water analyses for Alternative 4A in the Final EIR/EIS also assessed the potential for increasing flood risk due to the conveyance facilities and their construction. Given that the conveyance facilities under the proposed action remain identical to Alternative 4A, the conclusions and the mitigation measures for impacts SW-4 through SW-9 identified in the Final EIR/EIS for Alternative 4A are applicable to the proposed action.

Groundwater: Final EIR/EIS included an analysis of the Alternative 4A conveyance facilities and operations on the groundwater resources. Given that the proposed action includes identical facilities as Alternative 4A, all the groundwater resource impact conclusions are expected to remain consistent with Alternative 4A. For impact GW-8, the effect of changes in the CVP-SWP export operations on the potential to alter the south-of-Delta groundwater conditions was analyzed. As summarized above, Delta exports and south-of-Delta CVP deliveries under the proposed action will remain similar or higher than the No Action Alternative, consistent with Alternative 4A. Therefore, increases in south-of-Delta surface water deliveries attributable to project operations from the implementation of the proposed action are anticipated to result in a corresponding decrease in groundwater use in the export service areas compared to the No Action Alternative.

Fish and Aquatic Resources: The Final EIR/EIS fish and aquatic resource analysis evaluates potential impacts to fish species as a result of operations under Alternative 4A. The Final EIR/EIS analyses are largely based on foundational hydrological models (*e.g.*, CALSIM and DSM2) and outputs, which are then used directly to make impact determinations or indirectly by feeding modeled hydrological variables into secondary models for further analysis (see Section 11.3.2.2, Final EIR/EIS, for more information on the modeling used in the fish and aquatic resources chapter). Therefore, a comparison of key hydrological variables between the proposed action and Alternative 4A can be used to determine if operational criteria changes under the proposed action would lead to additional impacts over what have been identified for Final EIR/EIS Alternative 4A.

As described in the sensitivity analysis above, Delta outflow (generally indicative of Delta habitat conditions for some species), OMR flows (indicative of south Delta hydrodynamic conditions), upstream storage (indicative of upstream habitat conditions), river flows (indicative of migration conditions for juvenile salmonids), and Delta exports under the proposed action are consistent with the modeled outputs for Alternative 4A. While there are some differences between the proposed action and Alternative 4A, primarily due to changes in spring outflow and October/November OMR flow criteria, these differences generally are minor and conditions under both scenarios are similar. As it relates to X2 (an indicator of Delta outflow that has been correlated with abiotic habitat conditions), a revised CALSIM analysis (Comparison of Key Hydrological Variables for Proposed Action with Longfin Smelt Spring Outflow Criteria/No Scenario 6 October-November Old and Middle River Flow Criteria to No Action Alternative and BA Proposed Action Scenarios) generally indicates similar X2 under both the proposed action and Alternative 4A, with some modeled

differences in October and November⁷, though population level effects are not expected and these differences would not affect the Final EIR/EIS impact determinations. See Section 5.1.1.2.1 below for a discussion on the Delta smelt habitat analyses included in the Biological Opinions/ draft 2081(b) ITP and actions to address Delta smelt rearing habitat conditions. Overall, modeled hydrological conditions under both the proposed action and Alternative 4A are similar; therefore, additional impacts are not expected and no mitigation outside of what has already been included in the Final EIR/EIS is necessary.

Based on the results from the sensitivity analysis, water supply, surface water, fish and aquatic resources and groundwater resource impacts for the proposed action are expected to be within the range of impacts identified for Alternative 4A in the RDEIR/SDEIS, and confirmed in the Final EIR/EIS.



Figure 1. Storage Exceedance Probability for Trinity Lake, End of May

⁷ Note that in "Comparison of Key Hydrological Variables for Proposed Action with Longfin Smelt Spring Outflow Criteria/No Scenario 6 October-November Old and Middle River Flow Criteria to No Action Alternative and BA Proposed Action Scenarios" the differences are shown to be in November and December because the previous month's X2 is reported.



Figure 2. Storage Exceedance Probability for Trinity Lake, End of September



Figure 3. Storage Exceedance Probability for Shasta Lake, End of May



Figure 4. Storage Exceedance Probability for Shasta Lake, End of Sep



Figure 5. Storage Exceedance Probability for Lake Oroville, End of May



Figure 6. Storage Exceedance Probability for Lake Oroville, End of September



Figure 7. Storage Exceedance Probability for Folsom Lake, End of May



Figure 8. Storage Exceedance Probability for Folsom Lake, End of September



Figure 9. Annual (Oct-Sep) Delta Exports by WYT [WYT per current climate]



Figure 10. Annual (Oct-Sep) Exports at South Delta Intakes by WYT [WYT per current climate]



Figure 11. Annual (Oct-Sep) Diversion at North Delta Intakes by WYT [WYT per current climate]



Figure 12. Long-term Annual Distribution of Delta Exports at North and South Delta Intakes



Figure 13. Annual (Oct-Sep) CVP North-of-Delta Deliveries [WYT per current climate]



Figure 14. Annual (Oct-Sep) CVP South-of-Delta Deliveries [WYT per current climate]



Figure 15. Annual (Oct-Sep) SWP North-of-Delta Deliveries by WYT [WYT per current climate]





Figure 16. Annual (Oct-Sep) SWP South-of-Delta Deliveries by WYT [WYT per current climate] Trinity R

Figure 17. Trinity River below Lewiston, Monthly Average Flow [WYT based on current climate]



Sac R u/s of Red Bluff

Water Year Classification: SAC 40-30-30

Figure 18. Sacramento River upstream of Red Bluff Diversion Dam, Monthly Average Flow [WYT based on current climate]


Feather R @ Therm Water Year Classification: SAC 40-30-30

Figure 19. Feather River below Thermalito, Monthly Average Flow [WYT based on current climate]



Fremont Weir Water Year Classification: SAC 40-30-30

Figure 20. Fremont Weir Spills, Monthly Average Flow [WYT based on current climate]



Amer R @ Nimbus Water Year Classification: SAC 40-30-30

Figure 21. American River below Nimbus, Monthly Average Flow [WYT based on current climate]



Sac R @ Freeport Water Year Classification: SAC 40-30-30

Figure 22. Sacramento River at Freeport, Monthly Average Flow [WYT based on current climate]



Sac R d/s ND Diversion

Water Year Classification: SAC 40-30-30

Figure 23. Sacramento River downstream of North Delta Intakes, Monthly Average Flow [WYT based on current climate]



SJR @ Vernalis Water Year Classification: SJR 60-20-20

Figure 24. San Joaquin River at Vernalis, Monthly Average Flow [WYT based on current climate]



Old & Middle River (OMR) Flow

Water Year Classification: SAC 40-30-30

Figure 25. Combined Old and Middle River Flow, Monthly Average Flow [WYT based on current climate]



Delta Outflow Water Year Classification: SAC 40-30-30

Figure 26. Delta Outflow, Monthly Average Flow [WYT based on current climate]

Water Quality

The construction-related effects of the proposed action described in the Biological Opinions and draft 2081(b) ITP on water quality would be the same as those described for Alternative 4A, which were determined to be less than significant.

The water quality analysis of Alternative 4A facilities operations in Chapter 8, *Water Quality*, consisted, in part, of constituent assessments conducted in a qualitative manner for ammonia, dissolved oxygen, pathogens, phosphorus, trace metals, and total suspended solids (TSS)/turbidity for all areas of the affected environment, which includes the Upstream of Delta Region, Delta Region, and SWP/CVP Export Service Areas. Assessment of these constituents considered their sources and potential for reservoir storage, river flow and Delta source water changes to affect these constituent concentrations. The impact determination for these constituents was less than significant/not adverse. This also was the conclusion for all project alternatives for these constituents, meaning that, for the range of changed flow and source water conditions assessed, the impacts to these constituents would be less than significant.

Thus, with the proposed action, the impacts to these constituents would be less than significant, same as for Alternative 4A in the Final EIR/EIS.

The water quality analysis in Chapter 8, *Water Quality*, also determined for all project alternatives, including Alternative 4A, that impacts to water quality from facilities operations in the Upstream of Delta Region and SWP/CVP Export Service Areas would be less than significant for bromide, chloride, electrical conductivity (EC), mercury, organic carbon, pesticides, selenium, and *Microcystis*. Therefore, for the proposed action, impacts in the Upstream of Delta Region and SWP/CVP Export Service Areas selenium, and *Microcystis*. Therefore, for the proposed action, impacts in the Upstream of Delta Region and SWP/CVP Export Service Areas for these constituents are also less than significant.

The remaining constituents to be addressed within this water quality assessment of the proposed action are impacts in the Delta Region to the following constituents: boron, bromide, chloride, EC, mercury, nitrate, organic carbon, pesticides, selenium, and *Microcystis*. These constituents are addressed separately below. Effects of the changes in Delta water quality on San Francisco Bay are addressed at the end of this section.

Boron: Long-term average boron concentrations would be slightly higher with the proposed action, relative to that shown in the Final EIR/EIS, except at Banks and Jones pumping plants where Long-term average boron concentrations would be lower than that for the NAA. There would be a slight increase in the frequency of exceedance of the agricultural objective (500 ug/L) at Antioch and Mallard Island relative to the No Action Alternative (ELT). However, for the reasons described for Alternative 4A in Chapter 8, *Water Quality, Impact WQ-3: Effects on Boron Concentrations Resulting from Facilities Operations and Maintenance*, the proposed action would result in a less than significant impact to boron.

Bromide: Bay water is the primary source of bromide to the Delta, having concentrations orders of magnitude higher than in other Delta source waters. Less than significant impacts to bromide were identified for Alternative 4A in the Final EIR/EIS. Increases in long-term average bromide concentrations would occur at some interior and western Delta assessment locations relative to the No Action Alternative (ELT). However, bromide concentrations with the proposed action would not be substantially higher than the No Action Alternative (ELT) in the months of February through April at Antioch in above normal and wet years, which is when existing bromide levels are modeled to be within the range of applicable water quality thresholds for protection of beneficial uses. Following the assessment for bromide provided for Alternative 4A in Chapter 8, *Water Quality*, Impact WQ-5, *Effects on Bromide Concentrations Resulting from Facilities Operations and Maintenance*, the modeled bromide changes under the proposed action would not be expected to adversely affect MUN beneficial uses, or any other beneficial use, at these locations, resulting in a less than significant impact to bromide.

Chloride: In the western Delta, long-term average chloride concentrations would increase relative to the No Action Alternative (ELT) in the San Joaquin River at Buckley Cove and at the western Delta assessment locations; however, the frequency of the monthly average chloride concentration exceeding 250 mg/L would be similar or would decrease. Further, modeling results show that compared to the No Action Alternative (ELT), there would be less frequent exceedance of the Bay-Delta Water Quality Control Plan (WQCP) 250 mg/L chloride objective at the Contra Costa Pumping Plant (PP) No. 1 under the proposed action. However, the modeling results show that the WQCP 150 mg/L objective at the Contra Costa PP No. 1 would not be met in one out of the fifteen modeled calendar years. According to testimony presented by DWR expert Armin Munevar at SWRCB CPOD hearing, modeled exceedances of WQCP objectives are

primarily a function of the CALSIM II monthly time-step and other key model assumptions, and that real-time operations would prevent exceedances of these objectives Following the assessment for chloride provided for Alternative 4A in Chapter 8, *Water Quality,* Impact WQ-7, *Effects on Chloride Concentrations Resulting from Facilities Operations and Maintenance,* the modeled chloride changes under the proposed action would not be expected to adversely affect MUN beneficial uses, or any other beneficial use, at these locations, resulting in a less than significant impact to chloride.

Electrical Conductivity (EC): A significant impact to EC was identified for Alternative 4A in Chapter 8, *Water Quality*, associated with modeled substantial degradation at Emmaton in the months of July, August, and September, and more frequent exceedance of the Bay-Delta WQCP Prisoners Point EC objective in April and May, relative to the No Action Alternative (ELT). Under the proposed action, long-term average EC at Emmaton would similarly increase substantially in July, August, and September, as well as the additional months of October and November. Thus, a significant impact to EC also is identified for the proposed action related to degradation at Emmaton; however, the period of degradation would be greater. The proposed action also shows modeled exceedance of the Prisoners Point objective. The mitigation described for Alternatives 4A in Chapter 8, *Water Quality*, addresses adaptive management of the north and south Delta intakes and real time operations to reduce these impacts to a less than significant level.

Mercury: Under the proposed action, long-term average methylmercury concentrations would be the same as those described for Alternative 4A in Chapter 8, *Water Quality, Impact WQ-13: Effects on Mercury Concentrations Resulting from Facilities Operations and Maintenance*, which did not have significant impacts to mercury. Therefore, it is concluded that the proposed action also would have less than significant impacts to mercury.

Nitrate: Long-term average nitrate concentrations would be the same or up to 0.2 mg/L (as nitrogen) higher with the proposed action, relative to that described for Alternative 4A in Chapter 8, *Water Quality*, and there would no increase in the frequency of exceedance of applicable water quality objective. For the reasons described for Alternative 4A in Chapter 8, *Water Quality, Impact WQ-15: Effects on Nitrate Concentrations Resulting from Facilities Operations and Maintenance*, proposed action would result in a less than significant impact to nitrate.

Organic Carbon: Organic carbon is assessed via modeled dissolved organic carbon (DOC). The modeled proposed action DOC concentrations are the same as those modeled for Alternative 4A in Chapter 8, *Water Quality*, on a long-term average basis. Drought period concentrations for the proposed action are 0–0.1 mg/L higher at some interior Delta locations. For the reasons described in Chapter 8, *Water Quality, Impact WQ-17: Effects on Dissolved Organic Carbon Concentrations Resulting from Facilities Operations and Maintenance*, the modeled changes in DOC would have less than significant impacts to water quality in the Delta.

Pesticides: The San Joaquin River water is considered to be higher in pesticides compared to other Delta source waters based on existing data and water body impairments. Under the proposed action, the proportion of San Joaquin River water at Franks Tract, Rock Slough, and Contra Costa PP No. 1 would be similar to that described for Alternative 4A in Chapter 8, *Water Quality, Impact WQ-21: Effects on Pesticide Concentrations Resulting from Facilities Operations*

and Maintenance. For the reasons described for Alternative 4A in Chapter 8, *Water Quality*, the proposed action would result in a less than significant impact to pesticides.

Selenium: Under the proposed action, long-term average selenium concentrations would be the same as those described for Alternative 4A in Chapter 8, *Water Quality, Impact WQ-25: Effects on Selenium Concentrations Resulting from Facilities Operations and Maintenance,* which did not have significant impacts to selenium. Therefore, it is concluded that the proposed action also would have less than significant impacts to selenium.

Microcystis: As has been described in Chapter 8, *Water Quality, Impact WQ-32: Effects on* Microcystis *Bloom Formation Resulting from Facilities Operations and Maintenance*, there is the potential for increased residence times resulting from facilities operations. This potential would remain with the proposed action, yet a change in residence time would not necessarily affect the potential for a *Microcystis* bloom to occur. For the reasons described for Alternative 4A in Impact WQ-32, the proposed action would result in a less than significant impact to *Microcystis* bloom formation.

San Francisco Bay: As discussed above in "Selenium," long-term average Delta selenium concentrations under the proposed action would be the same as that described for Alternative 4A in the Final EIR/EIS, which would have a less than significant impact to San Francisco Bay selenium. As such, the proposed action would have a less than significant impact to San Francisco Bay selenium. Further, as described for Alternative 4A in Chapter 8, *Water Quality, Impact WQ-34: Effects on San Francisco Bay Water Quality Resulting from Facilities Operations and Maintenance and Environmental Commitments,* the proposed action would have a less than significant impact to water quality for all other constituents assessed, including nitrogen, phosphorus, mercury, chloride, and EC.

1.1.1.1. Differences Between Biological Opinion and Final EIR/S – NMFS Species⁸

1.1.1.1.1. Winter-run Chinook Salmon

Effects of Operations on Through-Delta Migration Conditions

As described in Chapter 11, Final EIR/EIS, potential effects on through-Delta migratory conditions for winter-run Chinook salmon were evaluated using several methods, including a comparison of flow changes downstream of the north Delta Diversions

⁸ Note that several fish species (winter-run and spring-run Chinook salmon and Delta smelt) analyzed in the Proposed Action (PA) are listed under both the ESA and CESA. For these dually listed species, the draft 2081(b) ITP effects analysis relies largely on the effects analysis presented in the NMFS and USFWS Biological Opinions; therefore, the following section describes analyses pertinent to the NMFS Biological Opinion for winter-run and spring-run Chinook salmon. However, where discrepancies between the NMFS Biological Opinion and draft 2081 (b) ITP exists, these areas are identified, where applicable.

(NDD), bioenergetics models to estimate predation at the NDD screens, calculating predation using assumptions derived from previous studies at existing screened intakes, water source fingerprint analysis, and the Delta Passage Model (DPM). Overall, with consideration of real-time operations (RTO), implementation of several environmental commitments (*e.g.*, habitat restoration, Georgiana Slough Non-Physical Barrier), and limitations and uncertainties within the methods used to evaluate impacts, it was concluded that effects of Final EIR/EIS Alternative 4A to through-Delta migration conditions are not adverse/ less than significant. Additionally, monitoring actions included in the Adaptive Management and Monitoring Program (AMMP)⁹ will be used to better understand baseline conditions near the NDD, along with potential effects at/near the intakes during operations. This information will then be used to further improve understanding of species needs, potential effects from operations, and methods to reduce negative effects.

The analyses included in the California WaterFix NMFS Biological Opinion (BiOP) expand on the Final EIR/EIS efforts (e.g., DPM) and introduce several new methods to evaluate potential impacts on winter-run migratory conditions. These methods include a channel velocity/flow routing analysis within the Delta, hydrodynamic/entrainment analysis, analysis on reverse flow conditions under several NDD operating scenarios and a travel time analysis (Perry 2016), and a new flow-survival analysis (Perry 2017). In addition, two life cycle models (Interactive Object-Oriented Simulation [IOS] and the Winter-run Chinook Life Cycle Model [WRLCM] were used in the BiOP to evaluate potential project effects. Several of these models were not available for use in the Final EIR/EIS or in the BA prepared for California WaterFix and have certain short-comings (as described below) and are considered by NMFS as emerging and in need of additional development. The preliminary results for the WRLCM and Perry 2017 analyses originally presented in January 2017 did not include assessment of the entire project, including the environmental commitments and mitigation proposed as a part of the project. The initial results of these models and analyses generally indicated potential for reduced through-Delta survival, increase travel times, and potential for increased entrainment into the central Delta. Overall, reduced survival and cohort replacement rates/escapement depicted by some of the models under the BiOP PA were generally driven by reduced smolt survival through the Delta due to hydrodynamic conditions downstream of the NDD (i.e., reduced flow). NMFS revised model runs (i.e., WRLCM and Perry 2107) incorporating some but not all of the mitigation offsets and revised RTO (Perry 2017) proposed by the project indicated less of an adverse effect of the California WaterFix related to through-Delta survival and migration conditions.

While the WRLCM and other analyses are useful tools to analyze potential changes to cohort replacement rates/survival under the BiOP PA and incorporate various

⁹ Note that CA WaterFix Biological Opinions and draft 2081(b) ITP include an updated description of the Adaptive Management Program (AMP), which further expands on the implementation structure, agency roles and responsibilities, and decision-making processes. Nevertheless, the AMMP in the Final EIR/EIS and the AMP in the Biological Opinions/ draft 2081(b) ITP are both consistent with the overarching goals of using the best available science and information to minimize effects to species, while considering effects to water supply reliability. See Section 5.3 below for more information on the AMP.

mechanistic processes to more closely represent actual winter-run population dynamics (WRLCM), model outputs, as NMFS identifies in its BiOP, should be interpreted with an appropriate level of awareness that several modeling assumptions (and other limitations of the foundational modeling) likely do not reflect actual operations and impacts under the BiOP PA with complete accuracy. For example, based on recent observations, the WRLCM assumes most smolt migration occurs at night, which coincides with the highest levels of NDD pumping assumed in the California WaterFix DSM2 modeling¹⁰. This results in a potential overestimation of impacts under BiOP PA operations because actual NDD pumping levels will vary across the day based on biological and hydrological conditions, and will be able to adjust for diurnal/nocturnal differences in migration tendency. In regards to Perry (2017), the survival analysis does not include a weighting factor for the daily proportion of salmon entering the Delta during the smolt migration period, which could artificially inflate smolt mortality due to potential mismatches between flow conditions near/downstream of the NDD and the actual timing of smolt migration (e.g., long-term catch monitoring data indicates the proportion of winter-run entering the delta has a bimodal distribution during the juvenile downstream migration period, generally coinciding with enhanced flow pulses or subsequent emigration). Further exploration of the modeling results revealed changes in survival under the BiOP PA were consistent with the DPM modeling results (generally similar or slightly lower survival under the PA and compared to NAA) after adding a weighting factor to represent smolt migration timing based on empirical data. In addition, impacts described in many of the NMFS analyses are likely conservative in nature due to the inability of the models to account for certain mitigation (described below) and for NDD RTO adjustments, which will be informed by biological triggers and fish presence near the NDD to protect species. The BiOP did, however, include an additional run of the Perry 2017 survival analysis to account for the unlimited pulse protection revision to the PA RTO based on biological triggers. The modeling results indicated that impacts to juvenile through-Delta survival are much less under these protections, although there is uncertainty as to the magnitude of effects described in this model.

Note that the new NMFS BiOP modeling results are fundamentally consistent with the Final EIR/EIS analysis in that both the Final EIR/EIS and BiOP analyses identified reduced through-Delta survival as a potential impact of NDD operations, although the severity of impacts somewhat differ among the Final EIR/EIS and BiOP modeling results. Nevertheless, the incorporation of these new models into the BiOP does not constitute new or significant information. When interpreting modeling results, it is important to consider the underlying assumptions driving the outcomes and other project commitments that cannot be fully realized by these modeling efforts. While these recently available modeling tools contribute towards our overall understanding of salmon population dynamics and potential effects of SWP and CVP operations

¹⁰ The following assumption was made to simplify modeling of the PA: Given a daily target volume of water to divert at the NDD, the DSM2 model aimed to divert this volume as soon as possible on each day within operational constraints such as river channel velocity (see Appendix 5.B of the BA). This led to most diversion occurring during the night in the first few hours of a new day. At the time of the development of the modeling, it was not known that diel period (diurnal/nocturnal) would be necessary to limit impacts suggested by the WRLCM.

(including the California WaterFix), among other factors, the BiOP states the exact benefits from the California WaterFix commitments cannot be captured within the models (at this time in the models' development) due to uncertainty of representation of these elements within the model structures. In addition, the NMFS BiOp still concludes that California WaterFix will not jeopardize the continued existence of the listed salmon nor adversely modify or destroy its critical habitat.

The Final EIR/EIS commits to several actions to reduce migration-related effects, including a non-physical barrier at Georgiana Slough, habitat restoration (tidal habitat restoration and channel margin enhancement), and the ability to adjust operations (RTO)¹¹ based on biological triggers, which is not accounted for in most of the modeling NMFS utilized to assess effects of RTO (*i.e.*, RTO has been modeled in several analyses as a function of hydrodynamic conditions, and not in relation to fish presence near the NDD; one exception is the revised Perry 2017 analysis described above). When accounting for all of the components and measures included in the Final EIR/EIS to reduce potential project effects, the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.¹²,¹³. In addition, adaptive management, described in the Final EIR/EIS, will be utilized throughout project implementation to allow for operational adjustments to further minimize effects on species.

Effects of Operations on Upstream Migration Conditions

Chapter 11, Final EIR/EIS, evaluates impacts to upstream migration conditions for emigrating juveniles and upstream migrating adults by analyzing changes in flow and temperature conditions in the Sacramento River. The results of these analyses generally indicated changes in flow and temperature would not be of sufficient frequency or magnitude to cause biologically meaningful effects. As such, impacts to winter-run were determined to be not adverse/less than significant. In addition, changes in upstream operational criteria are not proposed and the project will be required to meet existing

¹¹ Note that the NMFS and USFWS Biological Opinions and CDFW draft 2081(b) ITP include an updated description of NDD RTO under the PA, which clarifies operational criteria and transitions between bypass flow protection levels to account for biological triggers, temporal and spatial presence of species, and adjustments to operations to protect species while maximizing water supply reliability. Nevertheless, NDD RTO described both in the Final EIR/EIS and BIOPs/draft 2081(b) ITP documents are guided by the same operational principles to minimize and avoid effects to species, with consideration of water supply reliability.

¹² Additionally, the NMFS BiOP and draft 2081 (b) ITP include, depending on the permit, permit conditions with commitments to develop and fund actions focused on restoring and enhancing salmonid habitat upstream and within the Delta. These actions are expected to improve spawning, rearing, and egg incubation habitat conditions, along with increasing salmonid habitat capacity (*e.g.*, expansion of instream and/or off-channel rearing habitat). A requirement to contribute to the establishment of additional populations of winter-run is also included in the conditions of approval. Habitat restoration in the Delta, including approximately 1,828 acres of additional tidal habitat restoration for Delta smelt (to the degree these restoration sites also provide benefits to salmonids), will further contribute to improved growth, survival, and migratory success for salmonid species and is also expected to sufficiently address hydrodynamic effects of NDD operations. All identified actions will align with species recovery needs.

¹³ Note this conclusion and the ones following also apply for state-listed species under CESA, where applicable (*i.e.*, the project will not jeopardize the continued existence of a CESA-listed species). However, CESA also includes the requirement that all impacts of take authorized by the 2081(b) ITP are minimized and fully mitigated.

and/or any new operating criteria developed for Shasta Reservoir (through other permitting/regulatory processes) to address species needs.

Similarly, the California WaterFix NMFS BiOP uses a temperature analysis to evaluate potential effects to upstream migration conditions, along with results from the SALMOD model (see effects on rearing and spawning conditions for more information on SALMOD). The temperature analysis is somewhat different than the Final EIR/EIS, however, in that model temperature outputs for the BiOP PA and NAA were also compared to temperature standards/thresholds in the Sacramento River (seven-day average daily maximum temperature (7DADM)) determined by the U.S. Environmental Protection Agency (EPA). Results of the BiOP temperature threshold analysis indicated that adverse effects of the BiOP PA are not expected. In addition, the BiOP PA will be required to meet existing and/or any new upstream operating criteria (*e.g.*, criteria developed through the NMFS 2009 RPA revision process) and the ability to use RTO to minimize effects to species will not be affected by project implementation. Overall, the NMFS BiOP's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.¹²

Effects of Operations on Spawning and Egg Incubation Habitat

As described in Chapter 11, Final EIR/EIS, impacts to winter-run spawning and egg incubation habitat were evaluated by analyzing changes in temperature (including a temperature threshold and total-degree day analysis) and flow conditions, in addition to changes in reservoir storage volume. The Reclamation Egg Mortality Model and SacEFT were also used to analyze potential changes in egg mortality (Reclamation Egg Mortality Model) and changes in spawning weighted usable area (WUA), redd scour risk, egg incubation, redd dewatering risk, juvenile rearing WUA, and juvenile stranding risk (SacEFT). Collectively, these analyses indicated little impacts to spawning and egg incubation habitat. While results of the SacEFT modeling did suggest some potential adverse impacts under certain conditions, it was determined these were a function of high model sensitivity, which may not accurately predict adverse effects. CalSim modeling also shows that Reclamation could operate Shasta Reservoir in a similar way as the NAA. After further agency examination of the modeling and the fact that project operations will be required to comply with existing and/or new upstream operating criteria developed at a future date, it was determined Final EIR/EIS effects are not adverse/less than significant.

In the California WaterFix NMFS BiOP, potential effects to spawning and egg incubation habitat are evaluated using a temperature threshold analysis, WUA analysis, SALMOD (note this model is also used in the Final EIR/EIS migration and rearing impact analyses), redd scour/dewatering, and a new egg mortality model (Martin et al. 2016) developed by the Southwest Fisheries Science Center (SWFSC). The SALMOD model generates estimates of flow- and temperature-related mortality for multiple early-life stages, including eggs and fry. Generally, these models suggest little difference in temperatures and survival/mortality between the BiOP PA and NAA, consistent with the findings in the Final EIR/EIS. The redd dewatering analysis did indicate the potential for (generally small) increases in redd dewatering under the BiOP PA, and the WUA analysis indicated some potential effects to spawning habitat, depending on the month, water-year type, and location. It is important to note potential effects would be minimized by RTO (which the NMFS BiOP states RTO has been successful in the past) and further addressed through the NMFS 2009 RPA adjustments and other temperature requirements. In addition, no changes to upstream operating criteria are proposed under the project. When taking into account the modeling uncertainties and limitations (*e.g.*, limitations of using monthly model outputs to analyze changes that occur on a daily basis, along with other limitations of CALSIM modeling to represent actual future conditions), the 2009 NMFS BiOP compliance requirements (including the RPA revisions process), and the ability to manage upstream water storage in real-time as discussed above, the NMFS BiOP's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.¹² In addition, adaptive management will also be available to refine operational criteria and project implementation to further minimize effects to species.

Effects of Water Operations on Rearing Habitat

Chapter 11, Final EIR/EIS, evaluates potential impacts to winter-run rearing habitat by analyzing changes in temperature and flow conditions, rearing habitat as predicted by SacEFT, and habitat-related mortality as predicted by SALMOD. Generally, these models indicate changes in rearing habitat conditions, including the amount of suitable habitat, are not adverse/less than significant. While there were some discrepancies between the SacEFT and SALMOD modeling outputs, results of the SALMOD model, which incorporates effects to all early life stages (in contrast to SacEFT) and is thus more representative of the overall effects to winter-run , indicated no effects/minor benefits due to project operations. As a result, overall impacts were determined to be less than significant/ not adverse.

The California WaterFix NMFS BiOP also relies on SALMOD to assess potential effects of the BiOP PA. Consistent with the Final EIR/EIS findings, SALMOD predicted insignificant effects of the BiOP PA on early life stage winter-run mortality. Similarly, the juvenile stranding analysis indicated minimal differences between the BiOP PA and NAA. The BiOP temperature threshold analysis/discussion, using EPA 7DADM temperature thresholds, indicated adverse thermal effects of the BiOP PA are not expected. The WUA analysis did indicate the potential for some effects to rearing habitat, depending on the water-year type, month, and location. However, the BiOP PA will be required to operate in a way that is consistent with existing and /or new upstream operating criteria (e.g., NMFS 2009 BiOP, including future RPA revisions) and implementation of the project will not affect Reclamation's ability to manage cold water storage (including RTO) at Shasta Reservoir to minimize effects to listed species (consistent with existing operations). In light of these considerations and the ones described above in the spawning section, the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant. 12

Effects of Water Operations on Entrainment

As described in Chapter 11, Final EIR/EIS, changes in winter-run entrainment is evaluated using a salvage-density method at the south Delta intakes and a bioenergetics model to estimate predation associated with entrainment at the NDD (also included in

through-Delta migration analysis). A screen contact/impingement analysis at the NDD is also referenced in the Final EIR/EIS. These analyses indicate overall reduced entrainment and associated predation losses (at the south Delta intakes) due to project operations. Using the best available technology, state-of-the-art fish screens designed and approved by fisheries biologist will minimize potential impingement and entrainment effects at the NDD. In addition, agency-approved operating criteria (*e.g.*, protective sweeping and approach velocities at the screen-water interface) at the NDD will further reduce impacts to species. In addition, predator control measures may also be employed to reduce effects related to increased predator densities, as informed by adaptive management. Overall, these analyses indicate a less than significant impact due to entrainment-related effects.

The NDD entrainment/impingement analysis presented in the California WaterFix NMFS BiOP relies on injury and mortality rate assumptions derived from previous studies to estimate potential entrainment-related effects to fish <32mm at the NDD. This analysis also assumes fixed levels of entrainment and three different population proportion values representing the percentage of the population subject to the impacts of the screens. Effects of predation are also discussed qualitatively, which indicated only a small proportion of the population would be affected. Proposed refugia areas could limit effects as well, depending on their effectiveness. As it relates to south Delta entrainment, the BiOP expands on the Final EIR/EIS analyses and includes an additional model (Zeug and Cavallo (2014) regression model) to estimate differences in south Delta entrainment between the BiOP PA and NAA. Overall, the BiOP analysis concluded reduced entrainment at the south Delta export facilities and the potential for entrainment-related injury/mortality at the NDD (varying by affected proportion of population assumptions) compared to NAA conditions. The modeled reduction in entrainment at the south Delta export facilities is consistent with the Final EIR/EIS findings. While the BiOP generally indicates greater impacts at the NDD compared to the Final EIR/EIS, it is important to note that the assumptions driving the modeled results are conservative in nature (e.g., relatively high assumed proportion of juvenile salmonids subject to the impact of screens) and include some uncertainty (e.g., current PA screen designs are different than those analyzed in the studies mentioned above and from which screen-related loss assumptions were taken). In addition, the BiOP acknowledges various elements and assumptions in this analysis represent worst-case scenarios, and incorporation of fish refugia areas at the screens may help reduce effects of the NDD. With these considerations, the Final EIR/EIS commitments stated above (e.g., fish screen design and operational criteria to minimize effects, which will be developed in coordination with fish and wild agencies,), and estimated reduction in entrainment at the south Delta facilities, the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/less than significant. In addition, predator control measures may also be available to further reduce impacts, depending on their effectiveness, as determined through the adaptive management process.

Effects of Construction

The Final EIR/EIS evaluates similar construction-related impact mechanisms (*e.g.*, increases in turbidity, pile driving, contaminant exposure, loss of habitat, predation) as

were included in the California WaterFix NMFS BiOP, although some of these have been somewhat adapted or expanded on in the BiOP. For example, the BiOP includes an expanded discussion on potential acoustic and sediment effects from barge traffic, a qualitative analysis on reduced prey availability due to riverbed disturbances from construction activities, further analysis on potential injury and entrainment of listedfish species due to barge propellers, and predation effects at various in-water structures. The BiOP also discusses potential temperature effects due to the loss of riparian habitat during construction. Overall, the BiOP concludes impacts due to various construction activities could have effects on winter-run, with the magnitude and extent of effects dependent on the specific construction activity. However, impacts are expected to be minimized with inclusion of in-water work windows, AMM's and other project commitments described in the BiOP, consistent with the Final EIR/EIS.

The Final EIR/EIS includes several measures to minimize and avoid effects to listed species during construction, including in-water work windows, barge operations plans, noise reduction mitigation measures, spill prevention plans, and habitat restoration. In addition, predator control measures may also be employed to reduce effects related to increased predator densities, as informed by adaptive management. Through these actions, potential impacts to winter-run identified in the Final EIR/EIS and BiOP will be minimized and thus the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.

1.1.1.1.2. Spring-run Chinook Salmon

Effects of Water Operations on Through-Delta Migration Conditions

The description of the Final EIR/EIS methods and analyses used to evaluate impacts to winter-run though-Delta migration conditions is generally applicable to the analyses conducted for spring-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. Overall, the Final EIR/EIS found effects to be not adverse/less than significant.

The description of the BiOP methods and analyses used to evaluate impacts to winterrun through-Delta migration conditions is generally applicable to the analyses conducted for spring-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy; however, there are some key differences. The spring-run analysis does not include the use of the WRLCM or IOS, but does incorporate two additional models to analyze through-Delta effects, SalSim and Newman (2003). Results of a survival analysis based on SALSIM and the Newman analysis suggests that the BiOP PA would likely have a positive effect on San Joaquin River spring-run Chinook salmon in the Delta and little to no effect on Sacramento river spring-run, respectively. The hydrodynamic analyses and other Delta survival models indicate the potential for reduced survival, depending on the month, water year type, and the model used. For instance, the 2017 Perry analysis generally indicated reduced survival under the BiOP PA, whereas the DPM showed similar results for total survival in the Delta between the BiOP PA and NAA (consistent with the Final EIR/EIS DPM modeling results). For the reasons described in the winter-run section above and project commitments to include RTO¹¹ and other actions, the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.¹²

Effects of Water Operations on Upstream Migration Conditions

The description of the Final EIR/EIS methods and analyses used to evaluate impacts to winter-run upstream migration conditions is generally applicable to the analyses conducted for spring-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. Overall, the Final EIR/EIS found effects to be not adverse/less than significant.

The description of the BiOP methods and analyses used to evaluate impacts to winterrun upstream migration conditions is generally applicable to the analyses conducted for spring-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. Overall, the BiOP indicated generally similar conditions under both the BiOP PA and NAA, with a few exceptions, depending on the month and water-year type. Potential project effects will be further minimized by meeting existing and/or any new upstream operating criteria (*e.g.*, criteria developed through the NMFS 2009 RPA revision process) and RTO. As a result, the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant. ¹²

Water Operation Effects on Spawning and Egg Incubation Habitat

The description of the Final EIR/EIS methods and analyses used to evaluate impacts to winter-run spawning and egg incubation habitat is generally applicable to the analyses conducted for spring-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. Overall, the Final EIR/EIS found effects to be not adverse/less than significant.

The description of the BiOP methods and analyses used to evaluate impacts to winterrun spawning and egg incubation habitat is generally applicable to the analyses conducted for spring-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. In addition to these analyses, the Reclamation Egg Mortality Model was also used to evaluate potential effects to spring-run. Overall, the analyses indicated effects of the BiOP PA would be low in magnitude, with conditions generally similar between the BiOP PA and NAA. Potential effects would be further minimized by RTO. Others effects due to redd scour and stranding are expected to be minimal, while redd dewatering effects are generally small. Due to the generally small differences depicted by the Final EIR/EIS and BiOP analyses, commitments (*e.g.*, RTO)/requirements included in the Final EIR/EIS, and uncertainties and limitations of the modeling/analyses (see winter-run section above and NMFS BiOP), the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.¹²

Water Operations Effects on Rearing Habitat

The description of the Final EIR/EIS methods and analyses used to evaluate impacts to winter-run rearing habitat is generally applicable to the analyses conducted for spring-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. Overall, the Final EIR/EIS modeling results (including SacEFT and SALMOD) indicated no substantial effects on spring-run rearing habitat, resulting in not adverse/less than significant impact determinations.

The description of the BiOP methods and analyses used to evaluate impacts to winterrun rearing habitat, including BiOP conclusions and consistency with the Final EIR/EIS, is generally applicable to the analyses conducted for spring-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. Overall, the BiOP modeling indicates similar conditions under both the BiOP PA and NAA, with some small differences, depending on the month and water year type. Potential effects would be further minimized by compliance with existing and /or new upstream operating criteria (*e.g.*, NMFS 2009 BiOP, including future RPA revisions) and RTO at upstream reservoirs. Therefore, the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.¹²

Effects of Water Operations on Entrainment

The description of the Final EIR/EIS methods and analyses used to evaluate entrainment-related impacts to winter-run rearing habitat is generally applicable to the analyses conducted for spring-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. Overall, the Final EIR/EIS found effects to be not adverse/less than significant.

The description of the BiOP methods and analyses used to evaluate entrainment-related impacts to winter-run rearing habitat is generally applicable to the analyses conducted for spring-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy (with the exception of the Zeug and Cavallo (2014) method). Similar to the Final EIR/EIS, the NMFS California WaterFix BiOP analyzes changes in south Delta entrainment using a salvage-density method to estimate juvenile entrainment indices at the SWP and CVP facilities under the BiOP PA and NAA. Entrainment/predation-related effects at the NDD were analyzed using the same methods as winter-run (described above), with similar conclusions/results as well. Overall, the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.

Effects of Construction

The description of the Final EIR/EIS AND BiOP methods and analyses used to evaluate construction impacts to winter-run is generally applicable to the analyses conducted for spring-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. The overall impact conclusions and mitigation presented in the winter-run section is consistent with the spring-run analyses. Overall, the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.

1.1.1.1.3. Central Valley Steelhead

Effects of Water Operations on Through-Delta Migration Conditions

The description of the Final EIR/EIS methods and analyses used to evaluate impacts to winter-run though-Delta migration conditions is generally applicable to the analyses conducted for steelhead, adjusted for the different migration timing and location, and species' needs/tolerances/life history strategy. Overall, with inclusion of habitat restoration, RTO, and environmental commitments included in the Final EIR/EIS, impacts to steelhead were determined to be not adverse/less than significant.

The NMFS California WaterFix BiOP evaluates potential impacts to steelhead through-Delta migration conditions by using a channel velocity and routing analysis, reverse flow analysis, and a central Delta entrainment analysis, similar to the modeling used for winter-run and spring-run Chinook salmon. The results of the winter-run DPM model and the spring-run Salsim analysis are also qualitatively discussed in terms of potential impacts to steelhead, although the magnitude of decreased survival relative to that of winter-run as indicated by the DPM is highly uncertain. The Salsim model results for spring-run suggests generally similar conditions and potentially positive effects for San Joaquin River steelhead. Overall, the BiOP modeling results indicated potential positive and negative effects depending on the location, month, and water year type. For example, potential positive changes could occur in the south Delta due to more favorable hydrodynamics/routing as a result of less south Delta pumping and operations of the HOR gate. In the north Delta, NDD pumping could lead to decreases in velocity and favorable hydrodynamic conditions and the potential for greater entrainment into the central Delta. As described above and in the NMFS BiOP, it is important to note this modeling does not account for RTO¹¹ that would be done in order to limit potential operational effects, by assessing flow conditions in the context of fish presence. Furthermore, changes to Delta Cross Channel (DCC) gate operational criteria are not proposed and effects due to an increase in modeled DCC gate openings under the BiOP PA are unlikely to occur. In light of these considerations and the modeling limitations and uncertainties described here and the above sections, the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/less than significant.¹²

Effects of Water Operations on Upstream Migration Conditions

The description of the Final EIR/EIS methods and analyses used to evaluate impacts to winter-run upstream migration conditions is generally applicable to the analyses conducted for steelhead, adjusted for the different migration timing and location, and species' needs/tolerances/life history strategy. Overall, the Final EIR/EIS analysis indicated negligible effects on upstream migration conditions and therefore impacts were determined to be not adverse/less than significant.

The NMFS California WaterFix BiOP evaluates potential impacts to steelhead upstream migration and holding habitat by analyzing changes in temperature (*e.g.*, temperature threshold analyses) under the BiOP PA. Overall, the BiOP analysis indicated generally similar conditions under the BiOP PA, with some small differences, depending on the life stage, time of year, river segment, and water year type,. However existing/ any new

temperature requirements and upstream RTO will be available to further minimize effects (NMFS BiOP states RTO has successfully minimized similar effects in the past). For this reason, the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.¹²

Effects of Water Operations on Spawning and Egg Incubation Habitat Conditions

The description of the Final EIR/EIS methods and analyses used to evaluate impacts to winter-run spawning and egg incubation habitat conditions is generally applicable to the analyses conducted for steelhead, adjusted for the different migration timing and location, and species' needs/tolerances/life history strategy. Overall, the Final EIR/EIS analysis indicated negligible effects on spawning and egg incubation habitat and therefore impacts were determined to be not adverse/less than significant.

The NMFS California WaterFix BiOP evaluates potential impacts to spawning and egg incubation habitat by analyzing changes in temperature (*e.g.*, temperature threshold analyses), redd dewatering, and redd scour. Overall, models indicated temperatures and redd dewatering/scour risk under the BiOP PA and NAA would be largely the same under both scenarios. Overall, the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.

Effects of Water Operations on Rearing Habitat

The description of the Final EIR/EIS methods and analyses used to evaluate impacts to winter-run rearing habitat conditions is generally applicable to the analyses conducted for steelhead, adjusted for the different migration timing and location, and species' needs/tolerances/life history strategy (with the exception of the SALMOD, which was not used in the steelhead analysis). Overall, the Final EIR/EIS indicated no substantial reduction in rearing habitat conditions and therefore impacts were determined to be not adverse/less than significant.

The description of the BiOP methods and analyses used to evaluate impacts to winterrun rearing habitat conditions is generally applicable to the analyses conducted for steelhead, adjusted for the different migration timing and location, and species' needs/tolerances/life history strategy (with the exception of SALMOD, which was not used in the steelhead analysis). Overall, the BiOP analysis indicated generally similar temperature regimes under both the BiOP PA and NAA scenarios, with a few exceptions, depending on the location, month and water year type. However, potential effects would be further minimized by RTO and temperature compliance criteria. The BiOP analysis also indicated the potential for increased juvenile stranding under the BiOP PA, in certain months and water year types; however, there is some uncertainty in this analysis (see NMFS BiOP for more information) and the magnitude of this effect is low. Overall, for the reasons described here and in the winter-run section above, the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/less than significant.¹² It is also important to note the BiOP's tendency to compare modeled temperatures under the BiOP PA and NAA scenarios against temperature thresholds (rather against the other

scenario, in several instances), which, at times, lacks appropriate comparative analysis to isolate potential differences between the BiOP PA and NAA scenarios. While the BiOP does include comparisons of the frequency and magnitude of exceedances of temperature thresholds between the BiOP PA and NAA, at times, it is not clear which scenario results in greater overall impacts due to the mixed results between the two scenarios. Because of these reasons, the BiOP may indicate greater effects under the PA, when in fact, the BiOP PA and NAA conditions are largely the same. Nevertheless, potential impacts would be minimized by RTO and temperature compliance requirements, as described above.

Effects of Water Operations on Entrainment

The description of the Final EIR/EIS methods and analyses used to evaluate entrainment-related impacts to winter-run is generally applicable to the analyses conducted for steelhead, adjusted for the different migration timing and location, and species' needs/tolerances/life history strategy. Overall, impacts to steelhead are not adverse/less than significant, due to reduced south Delta entrainment under project operations. Entrainment/predation-related effects at the NDD are expected to have negligible effects to the overall steelhead population.

The description of the BiOP methods and analyses used to evaluate entrainment-related impacts to winter-run is generally applicable to the analyses conducted for steelhead, adjusted for the different migration timing and location, and species' needs/tolerances/life history strategy (with the exception of the Zeug and Cavallo (2014) method). Similar to the Final EIR/EIS, the NMFS California WaterFix BiOP analyzes changes in south Delta entrainment using a salvage-density method to estimate juvenile entrainment indices at the SWP and CVP facilities under the BiOP PA and NAA. Entrainment/predation-related effects at the NDD were analyzed using the same methods as winter-run (described above), with similar conclusions/results. Overall, the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/less than significant.

Effects of Construction

The description of the Final EIR/EIS AND BiOP methods and analyses used to evaluate construction impacts to winter-run is generally applicable to the analyses conducted for steelhead, adjusted for the different migration timing and location, and species' needs/tolerances/life history strategy. The Final EIR/EIS includes several measures to minimize and avoid effects to listed species during construction, including in-water work windows, barge operations plans, noise reduction mitigation measures, spill prevention plans, and habitat restoration. In addition, predator control measures may also be employed to reduce effects related to increased predator densities, as informed by adaptive management. Through these actions, potential impacts to steelhead will be minimized and thus the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.

1.1.1.1.4. Green sturgeon

Effects of Water Operations on Migration Conditions

The Final EIR/EIS evaluates potential changes on green sturgeon migration conditions by analyzing changes in flows both upstream and within the Delta. In addition, a year class strength-outflow relationship (USFWS 1995) for white sturgeon was used as a surrogate for green sturgeon to examine potential effects to larval transport flows. It is important to note the high uncertainty within this analysis as a result of using white sturgeon as a surrogate for green sturgeon (different life history characteristics) and the uncertainty behind the possible mechanisms driving the aforementioned relationship (*e.g.*, whether Delta outflow or upstream river flow is of greater importance). Overall, due to the similarity in upstream flow conditions between the Final EIR/EIS Alternative 4A and NAA and the availability of adaptive management to further refine outflow conditions to reduce effects on green sturgeon, the Final EIR/EIS determined effects to be not adverse/less than significant effects.

Potential influences from changes in the magnitude, timing, and duration of flows upstream and within the Delta on green sturgeon are qualitatively discussed in the NMFS California WaterFix BiOP; however, due to insufficient information as a result of a lack of studies directed at green sturgeon survival during their downstream migration, the BiOP indicates effects due to changes in flow conditions under the BiOP PA are uncertain. However, this uncertainty would be addressed under the AMP. Overall, the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.

Effects of Water Operations on Spawning and Egg Incubation Habitat

The Final EIR/EIS evaluates potential project effects on green surgeon spawning and egg incubation habitat conditions by analyzing changes in flows and temperature (including a temperature threshold and total-degree day/month analysis). Overall, no substantial reductions in spawning and egg incubation habitat are anticipated; therefore, impacts are less than significant/not adverse.

The NMFS California WaterFix BiOP evaluates potential changes in green sturgeon spawning and egg incubation habitat by analyzing differences in upstream temperature between the BiOP PA and NAA. Overall, the BiOP analysis indicated the BiOP PA is not expected to adversely affect the reproductive success, growth, or survival of green sturgeon. Therefore, the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.

Effects of Water Operations on Rearing Habitat

Potential effects to green sturgeon rearing habitat were evaluated in the Final EIR/EIS by analyzing changes in upstream water temperatures (including total degree-month analysis) as a result of project operations. Overall, impacts were determined to be less than significant/not adverse due to no substantial reductions in habitat.

Refer to the green sturgeon migration and spawning sections above for a description of the NMFS California WaterFix BiOP analyses used to evaluate potential project effects on green sturgeon rearing habitat. These analyses are generally applicable to rearing habitat effects. Overall, the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant

Effects of Water Operations on Entrainment

The description of the Final EIR/EIS methods and analyses used to evaluate entrainment-related impacts to winter-run (*i.e.*, salvage-density method, screening effectiveness analysis) is generally applicable to the analyses conducted for green sturgeon, adjusted for the different migration timing and location, and species' needs/tolerances/life history strategy. The green sturgeon analysis, however, does not include a quantitative analysis on predation effects at the NDD, as was done with winter-run. Overall, impacts to green sturgeon were determined to be less than significant/not adverse and due to reduced south Delta entrainment.

The NMFS California WaterFix BiOP analyzes green sturgeon entrainment-related (including predation) effects at the NDD qualitatively by evaluating results of previous studies on entrainment/impingement and green sturgeon early life stage development. Collectively, these analyses indicate green sturgeon entrainment is unlikely at the NDD. Based on previous studies, the BiOP concludes juvenile individuals migrating by or residing near the NDD may be vulnerable to impingement-related effects (e.g., reduced swimming performance, physical damage to body), although the magnitude of this effects is low. However, one of the studies in which this conclusion is based on tested approach velocities well above the proposed criteria at the NDD screens. As described in the BiOP, short- and long-term effects of impingement and screen contact to juvenile green sturgeon have not been evaluated. In addition, the BiOP PA includes monitoring studies/adaptive management to further evaluate the effectiveness of fish screens, proposed operational criteria, and predator control measures at the NDD to further minimize impacts to fish species. At the existing south Delta export facilities, entrainment is expected to be reduced under the BiOP PA. Overall, the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant

Effects of Construction

The description of the Final EIR/EIS and BiOP methods and analyses used to evaluate construction impacts to winter-run is generally applicable to the analyses conducted for green sturgeon, adjusted for the different migration timing and location, and species' needs/tolerances/life history strategy. The Final EIR/EIS includes several measures to minimize and avoid effects to listed species during construction, including in-water work windows, barge operations plans, noise reduction mitigation measures, spill prevention plans, and habitat restoration. In addition, predator control measures may also be employed to reduce effects related to increased predator densities, as informed by adaptive management. Through these actions, potential impacts to green sturgeon minimized and thus the NMFS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.

1.1.1.1.5. Fall/ late fall-run Chinook Salmon

Effects of Water Operations on Through-Delta Migration Conditions

The description of the Final EIR/EIS methods and analyses used to evaluate through-Delta migration impacts to winter-run is generally applicable to the analyses conducted for Fall/late fall-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. Overall, with inclusion of several environmental commitments and RTO, potential effects to through-Delta migration conditions were determined to be not adverse/less than significant.

In the NMFS California WaterFix BiOP's Essential Fish Habitat (EFH) analysis, potential changes to through-Delta migration conditions are evaluated using the DPM (also in the Final EIR/EIS), channel velocity/flow routing analysis, Newman (2003) survival analysis, SalSim, and the Perry (2017) survival analysis (however, this does not include the revised RTO criteria for unlimited pulse protections). Results of survival analyses based on SALSIM and Newman (2003)suggests that the BiOP PA would likely have a positive effect on San Joaquin River fall-run Chinook salmon in the Delta and little to no effect on Sacramento river fall-run, respectively. The other hydrodynamic and survival analyses indicate potential positive and negative effects of the project, depending on location, water year type, and the model used. For instance, improved south Delta hydrodynamics and the HOR gate could improve south Delta conditions/routing, while decreased velocities below the NDD could lead to greater travel times and decreased survival. However, for the same reasons described in the winter-run section above regarding limitations and uncertainties of the modeling and project commitments to include RTO11 and other actions, the NMFS BiOp's finding that any impacts to EFH would be "avoided or minimized" is consistent with the Final EIR/EIS impact conclusions of not adverse/less than significant.¹²

Effects of Water Operations on Upstream Migration Conditions

The description of the Final EIR/EIS methods and analyses used to evaluate upstream migration impacts to winter-run is generally applicable to the analyses conducted for Fall/late fall-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. Overall, the modeling results indicate upstream migration conditions would generally be similar between the Final EIR/EIS Alternative 4A and NAA. While some flow reductions in the American River were observed, additional sensitivity analyses confirmed these flow reductions are unlikely to occur and the ability to operate Folsom reservoir to minimize effects to aquatic species would be maintained. As a result, impacts were determined to be not adverse/less than significant.

The description of the BiOP methods and analyses used to evaluate upstream migration impacts to winter-run is generally applicable to the analyses conducted for Fall/late fallrun, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. Results of the BiOP analysis indicate generally similar conditions under the BiOP PA and NAA. In addition, any potential effects would be further minimized with RTO and temperature compliance requirements. Overall, the NMFS BiOp's finding of "no adverse effect" on EFH is consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant. ¹²

Effects of Water Operations on Spawning and Egg Incubation Habitat

The description of the Final EIR/EIS methods and analyses used to evaluate impacts to winter-run spawning and egg incubation habitat is generally applicable to the analyses conducted for Fall/late fall-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. Overall, temperature, flow, and biological modeling results indicate effects to spawning and egg incubation habitat would be not adverse/less than significant.

The description of the BiOP methods and analyses used to evaluate impacts to winterrun spawning and egg incubation habitat is generally applicable to the analyses conducted for Fall/late fall-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. Overall, the BiOP analysis indicates generally similar habitat conditions under both the BiOP PA and NAA. The BiOP does have an additional redd dewatering analysis for American River fish based on categorical rankings of the magnitude of redd dewatering based on flow, which does not include results of the NAA scenario, thus limiting the usefulness of identifying project effects relative to future baseline conditions. Also, see the BiOP for a description of the limitations and uncertainties with this analysis. In addition, RTO and BiOP PA compliance with temperature requirements will further minimize any potential effects. Overall, the NMFS BiOp's finding of "no adverse effect" on EFH is consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant. ¹²

Effects of Water Operations on Rearing Conditions

The description of the Final EIR/EIS methods and analyses used to evaluate impacts to winter-run rearing habitat is generally applicable to the analyses conducted for Fall/late fall-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. Generally, these models indicate changes in rearing habitat conditions are not adverse/less than significant. While there were some discrepancies between the SacEFT and SALMOD modeling outputs, results of the SALMOD model, which incorporates effects to all early life stages (in contrast to SacEFT) and is thus more representative of the overall effects to fall/late-fall , indicated minimal/negligible effects.

The description of the BiOP methods and analyses used to evaluate impacts to winterrun rearing habitat is generally applicable to the analyses conducted for Fall/late fallrun, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. The BiOP evaluation also included an analysis on fall run fry rearing habitat in San Francisco Bay, which revealed minimal differences between the PA and NAA. Overall, the BiOP analysis indicated generally similar conditions under the BiOP PA and NAA. As a result, the NMFS BiOp's finding of "no adverse effect" on EFH is consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.¹²

Effects of Water Operations on Entrainment

The description of the Final EIR/EIS methods and analyses used to evaluate entrainment-related impacts to winter-run rearing habitat is generally applicable to the analyses conducted for Fall/late fall-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. Overall, entrainmentrelated effects would be reduced under project operations, primarily due to reduced south Delta pumping. As such, impacts were determined to be not adverse/less than significant.

The description of the BiOP methods and analyses used to evaluate entrainment-related impacts to winter-run rearing habitat is generally applicable to the analyses conducted for Fall/late fall-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy (with the exception of the Zeug and Cavallo (2014) method). Similar to the Final EIR/EIS, the NMFS California WaterFix BiOP analyzes changes in south Delta entrainment using a salvage-density method to estimate juvenile entrainment indices at the SWP and CVP facilities under the BiOP PA and NAA. Entrainment/predation-related effects at the NDD were analyzed using the same methods as winter-run (described above), with similar conclusions/results as well. Overall, project impacts are similar as those described for the winter-run section and thus the NMFS BiOp's finding of "no adverse effect" are consistent with the Final EIR/EIS impact conclusions of not adverse/less than significant.

Effects of Construction

The description of the Final EIR/EIS and BiOP methods and analyses used to evaluate construction impacts to winter-run is generally applicable to the analyses conducted for Fall/late fall-run, adjusted for the different run timing and location, and species' needs/tolerances/life history strategy. The Final EIR/EIS includes several measures to minimize and avoid effects to listed species during construction, including in-water work windows, barge operations plans, noise reduction mitigation measures, spill prevention plans, and habitat restoration. In addition, predator control measures may also be employed to reduce effects related to increased predator densities, as informed by adaptive management. Through these actions, potential impacts to fall/late-fall Chinook salmon will be minimized and thus the NMFS BiOp's finding of "no adverse effect" on EFH is consistent with the Final EIR/EIS impact conclusions of not adverse/less than significant.

1.1.1.2. Differences Between Biological Opinion and Final EIR/S – USFWS Species¹⁴,¹⁵

1.1.1.2.1. Delta smelt

Effects of Water Operations on Migration Conditions

As described in Chapter 11, Final EIR/EIS, potential impacts to Delta smelt migratory conditions were assessed by analyzing potential changes in water temperatures, pulse flows, and turbidity. Physical modeling conducted to estimate potential changes in in-Delta water temperature and entrainment of sediment at the NDD indicate not adverse/less than significant impacts. While the sediment entrainment modeling did indicate the potential for reduced habitat suitability due to decreased turbidity, the project would not affect suspended sediment concentration during the first flush of precipitation that cues delta smelt migration. As such, turbidity cues associated with adult delta smelt migration should not change. In addition, the Final EIR/EIS includes a commitment to reintroduce sediment collected at the NDD to further minimize effects. To offset effects related to potential restricted access to upstream spawning habitat (due to NDD construction and operations), the Final EIR/EIS also included habitat restoration (108 acres of sandy beach habitat as part of the total 295 acres of tidal restoration under Environmental Commitment 4, Tidal Natural Communities *Restoration*), focusing on habitat features conducive to Delta smelt spawning. However, after consultation with USFWS and CDFW, DWR has agreed to increase the amount of tidal restoration included in Environmental Commitment 4 from 295 acres to 1,828 acres, which would further reduce potential effects to Delta smelt and is expected to improve overall habitat conditions in the Delta.¹⁶ Overall, impacts to migration conditions identified in the Final EIR/EIS are not adverse/less than significant.

¹⁴ Note that several fish species (winter-run and spring-run Chinook salmon, and Delta smelt) analyzed in the PA are listed under both the ESA and CESA. For these dually listed fish species, the draft 2081(b) ITP effects analysis relies largely on the effects analysis presented in the NMFS and USFWS Biological Opinions; therefore, the following section describes analyses pertinent to the USFWS Biological Opinion for Delta smelt. However, where discrepancies between the NMFS Biological Opinion and draft 2081 (b) ITP exist, these areas are identified, where applicable.

¹⁵ As described in the USFWS Biological Opinion, "the Service has determined that CWF presents a mixed programmatic action, as defined in 50 CFR 402.02. The Service's consultation includes a mix of standard consultation (which includes an ITS) and programmatic consultation (which can include an ITS or defer the ITS to a later time associated with subsequent Federal actions).... All activities addressed programmatically will be subject to a subsequent consultation in order to proceed. Some project elements and their effects on listed species or critical habitat will change as DWR continues to develop the PA and may require reinitiation...Based on the uncertainty associated with the current PA, we [USFWS] understand that many of the effects discussed in the BiOP will likely not be realized when operations under the CWF PA are implemented."

¹⁶ While the BiOP and draft CDFW 2081(b) ITP include roughly 1,500 more acres of tidal restoration to offset impacts related to reduced access to upstream spawning habitat compared to Alternative 4A as described in the Final EIR/EIS, it is important to note the differences between the regulatory standards of CEQA and CESA/ESA, including requirements to minimize effects and offset take. Generally, CESA/ESA requires agencies to take a more conservative approach when analyzing species effects, with CESA in particular requiring take to be fully mitigated.

Consistent with the Final EIR/EIS, the California WaterFix USFWS BiOP analyzed potential changes in water temperature and sediment entrainment at the NDD under the BiOP PA. The BiOP also analyzes the potential for restricted access to upstream spawning habitat due to the loss of low-velocity shoreline habitat from construction and operations of the NDD intakes. Overall, the BiOP results indicated similar or slightly higher water temperatures in some cases (depending on location) and 11% mean sediment removal at the NDD (consistent with the Final EIR/EIS). In addition, the BiOP indicates the potential for restricted access to upstream spawning habitat above the NDD (beginning at the lowermost intake (5)), consistent with the Final EIR/EIS. The BiOP includes approximately 1,750 acres of shallow water habitat mitigation to offset effects related to restricted Delta smelt access to upstream spawning habitat (with a total amount of approximately 1,828 acres of restoration when accounting for all construction and operational-related effects). The BiOP also describes potential benefits to migratory conditions in the San Joaquin River due to improved flow conditions as a result of less south Delta pumping. The Final EIR/EIS includes several measures to minimize potential effects on migratory conditions and sediment loss, including a sediment reintroduction plan, habitat restoration to offset potential limited access to upstream spawning habitat, and operating criteria at the NDD screens to minimize potential effects on migrating fish species. With the commitments included in the Final EIR/EIS, similar water temperatures modeled under with-project and baseline scenarios in the FEIR/S and BiOP, and the relatively low proportion of the Delta smelt population that occur in the NDD reach and thus would be affected by restricted upstream access, the USFWS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.

Effects of Water Operations on Spawning and Egg Incubation Habitat

Please refer to the section above for a discussion on the Final EIR/EIS and USFWS California WaterFix BiOP evaluation on potential impacts to spawning and egg incubation habitat. This discussion generally applies to spawning habitat effects.

Effects of Water Operations on Rearing Habitat

Chapter 11 of the Final EIR/EIS evaluates potential effects to rearing habitat by analyzing differences in the Delta smelt fall Abiotic index between the Final EIR/EIS Alternative 4A and NAA. This analysis is based on the methods developed by Feyrer et al. (2011). Due to minimal differences in abiotic habitat indices between the scenarios, as a result of inclusion of fall X2 criteria in both scenarios, potential impacts were determined to be not adverse/less than significant. Chapter 8 of the Final EIR/EIS also includes a *Microcystis* and selenium analysis based on changes in Delta hydrodynamics

Due to these differences, and CEQA's significance threshold approach for making impact determinations, mitigation strategies among these permitting processes are likely to differ based on the specific permit requirements, but probably will involve greater mitigation than proposed in the Final EIR/S.

under Alternative 4A. Overall, effects were determined to be less than significant/not adverse.

The California WaterFix USFWS BiOP expands on the Final EIR/EIS rearing habitat analyses with additional assessments, including a food web material entrainment analysis at the NDD and a year-round X2 analysis. The Microcystis analysis suggests potential increases in the Sacramento River, with decreases in the San Joaquin River; however, it is expected that preferential south Delta pumping to reduce water residence times and general operations intended to manage water quality would likely reduce effects. Results of the food web material entrainment analysis suggest little, if any, effects from the BiOP PA, especially when interpreting the modeling results in the context of overall SWP and CVP operations and *in situ* primary production in the Delta. Decreased south Delta pumping may offset NDD losses or even increase phytoplankton loading as result of higher contributions from the San Joaquin River. The salinity analysis in the BiOP indicates potential reductions in the extent of low salinity zone (LSZ) rearing habitat in the summer/ fall months due to X2 movement upstream, depending on the month and water year type. LSZ habitat is believed to provide, along with other factors, suitable rearing conditions for early life stages; however, direct links between the extent of LSZ habitat/X2 position and Delta smelt population responses are unclear and is an active area of research. It is important to note that the extent and quality of Delta smelt rearing habitat can also be influenced by factors independent of water project operations (e.g., habitat restoration, food web dynamics, and hydrological conditions). As described in the California WaterFix USFWS BiOP, "The [BiOP] analysis of the effects of the PA on fish and aquatic resources is influenced by numerous factors related to the complexity of the ecosystem, changes within the system (e.g., climate change and species population trends), and the imprecision of operational controls and resolution in modeling tools. These factors are further complicated by the scientific uncertainty about some fundamental aspects of the life histories of the listed fish species and how these species respond to changes in the system, as well as sometimes competing points of view on the interpretation of biological and physical data within the scientific community."

Uncertainty regarding Delta smelt rearing habitat will be addressed through other regulatory processes, such as the Delta Smelt Resiliency Strategy, re-initiation of consultation on the USFWS 2008 BiOP, and the SWRCB Water Quality Control Plan Update. In addition, the PA includes an Adaptive Management Program (AMP), which commits to further investigations into Delta smelt population dynamics, including identifying factors driving population outcomes. Through this process, new operational criteria may be identified and implemented to further reduce impacts and provide beneficial habitat conditions to Delta smelt, with consideration of water supply reliability. To further address Delta smelt needs, implementation of the BiOP PA will follow the Guiding Principles described in Section 6.1 of the California WaterFix USFWS BiOP, which includes improving rearing habitat for rearing juveniles and promoting food production and transport into areas where habitat conditions are suitable for Delta smelt, among others. The principles are intended to promote (1) ecological conditions suitable for all life stages of delta smelt and (2) water supply reliability. In light of the aforementioned uncertainties, similar rearing conditions (represented by X2 in the BiOP

analysis and abiotic habitat index in the Final EIR/EIS) in most months between the with-project and baselines scenarios, and other processes to address smelt rearing habitat in the summer, the USFWS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.

Effects of Water Operations on Entrainment of Delta Smelt

As described in Chapter 11, Final EIR/EIS, potential effects of entrainment were analyzed using OMR proportional entrainment loss regressions and a particle tracking model (PTM) to estimate adult and juvenile Delta smelt entrainment and larval entrainment at the south Delta export facilities and NDD, respectively (Impingement and screen contact analyses were also referenced in the Final EIR/EIS). Overall, these analyses indicated not adverse/ less than significant effects due to less south Delta pumping. Predation associated with entrainment would also be reduced due to less south Delta pumping. In addition, intakes/screens would be designed and operated to minimize potential effects.

The USFWS BiOP similarly evaluates entrainment effects by using an impingement and screen contact analysis for the NDD and PTM (for which the results are also considered in the BiOP analysis to determine the potential for reduced adult Delta smelt access to upstream spawning habitat). The entrainment analysis also examines changes in OMR flows to evaluate risk at the south Delta facilities. Overall, the BiOP indicates minimal risk of entrainment of larval Delta smelt (assuming restricted upstream access to spawning habitat) and the potential for screen contact and impingement effects to juveniles and adults at the NDD (for the subset of the Delta smelt population residing near the NDD). Reduced south Delta pumping and more positive OMR flows are expected to reduce overall Delta smelt entrainment at the south and improve south Delta hydrodynamic conditions, potentially increasing the capacity for Delta smelt to successfully use the San Joaquin River. Due to the small proportion of the Delta smelt population utilizing habitat near the NDD, operational and screen design criteria at the north intakes, and reductions in entrainment at the south Delta export facilities, the USFWS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/less than significant. In addition, habitat restoration is proposed to offset potential screen contact/impingement effects on Delta smelt access to upstream spawning habitat. In addition, predator control measures may also be employed to reduce effects related to increased predator densities, as informed by adaptive management.

Effects of Construction

The description of the Final EIR/EIS methods and analyses (including overall effects) used to evaluate construction impacts to winter-run rearing habitat is generally applicable to the analyses conducted for Delta smelt, adjusted for the different migration timing and location, and species' needs/tolerances/life history strategy. However, potential impacts to Delta smelt are expected to be less than for winter-run due to lower densities near the NDD.

The Final EIR/EIS and USFWS California WaterFix BiOP analyses on potential construction-related effects on Delta smelt are generally consistent with one another, although the analyses in the BiOP are somewhat adapted/refined from what is included in the Final EIR/EIS. Overall, due to in-water work windows, Avoidance and Mitigation Measures (AMMs), and the low overall population abundance and distribution during in-water work, the BiOP concludes minimal risk of construction-related effects (*e.g.*, predation, noise impacts) to Delta smelt. Therefore, the USFWS BiOp's findings of "no jeopardy" and "no adverse modification" are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant. See the Delta smelt migration section above for a discussion on potential restricted access to upstream spawning habitat.

1.1.1.2.2. California Tiger Salamander and California Redlegged Frog

Loss of Habitat and other Effects on California Tiger Salamander and California Red-legged Frog

Chapter 12 of the EIR/EIS relied on the species models for California tiger salamander and California red-legged frog developed under the BDCP in order to determine impacts on these two species from the water conveyance facilities construction and restoration. The USFWS BiOP uses the same models as the EIR/EIS but includes additional impacts where habitat occurs within 75 feet of the project footprint, and does not estimate the effects of restoration on the species. The addition of habitat within 75 feet of the project footprint results in greater permanent impacts identified in the USFWS BiOP relative to the EIR/EIS. The species models used for the EIR/EIS were not similarly updated due to the need to maintain a comparable level of detail across the alternatives (BDCP and non-HCP alternatives), an approach required under NEPA.

Differences in impacts between the EIR/EIS and the USFWS BiOP also occur due to different methods used to analyze geotechnical and safe haven construction impacts. The EIR/EIS used a different number of geotechnical sites than the USFWS BiOP and relied on the safe haven footprints depicted in the Mapbooks, whereas the USFWS BiOP made assumptions about the number and size of the safe haven sites to estimate areas of impact. Also, the EIR/EIS assumes that safe haven work areas could potentially affect California tiger salamander and California red-legged frog, while the USFWS BiOP commits to avoiding all safe haven impacts on those species.

Both the EIR/EIS and USFWS BiOP include avoidance and minimization measures to avoid and minimize effects on habitat and individual animals, and these measures are generally similar. Compensation for the loss of habitat, however, is treated differently between the two documents. The EIR/EIS approaches conservation at the natural community level, using biological goals and objectives to guide conservation of each species such that the effects of the plan offset any impacts as well as contribute to recovery of the species. This natural community conservation strategy in the EIR/EIS is intended to meet the needs of multiple species, including non-listed species, and therefore the overall areas of protection and restoration provided to offset impacts in the EIR/EIS will differ from the areas provided in the USFWS BiOP, which for these two species relies on specific compensation ratios. Despite the differences between the two analyses described above, the effects determinations of not adverse/ less than significant presented in the Final EIR/EIS are still applicable for both species.

1.1.1.2.3. Giant Garter Snake

Loss of Habitat and other Effects on Giant Garter Snake

Chapter 12 of the EIR/EIS used a species model for giant garter snake developed under the BDCP to determine impacts on the species from water conveyance facilities construction and restoration. The USFWS BiOP used a different model that used newer information for wetlands, which was obtained from the wetland delineation that took place within the Conveyance Planning Area. For the EIR/EIS, the model could not be similarly updated because the equivalent level of wetland mapping (delineation done to USACE standards) was not available across the larger planning area. The EIR/EIS also identifies impacts outside of the conveyance footprint for various alternatives (*e.g.*, restoration and transmission lines); thus the model used in the USFWS BiOp would not be suitable for estimating impacts in these areas. Also, the model was not updated because the EIR/EIS needed to maintain a comparable level of detail in analysis of the range of alternatives, as is required under NEPA.

Differences in impact estimation between the EIR/EIS and the USFWS BiOP also occurred due to different methods used for the analysis of geotechnical, safe haven, and transmission line impacts. The EIR/EIS used a different number of geotechnical sites than the USFWS BiOP and relied on the safe haven footprints depicted in the Mapbooks, whereas the USFWS BiOP used assumptions about the number and size of safe haven sites to arrive at an impact estimate. The USFWS BiOP assumes that transmission line construction, geotechnical exploration activities, and safe haven work areas would entirely avoid impacts on giant garter snake aquatic habitat, and that safe haven work areas would also avoid giant garter snake upland habitat; however, the EIR/EIS assesses potential impacts to these species from these activities.

Both the EIR/EIS and USFWS BiOP provide very similar avoidance and minimization measures to avoid and minimize effects on habitat and individual animals. However, ccompensation for the loss of habitat is treated differently in the two documents. The EIR/EIS approaches conservation at the natural community level, using specific biological goals and objectives for species to guide the conservation such that the effects of the plan offset any impacts as well as contribute to recovery of the species. The natural community conservation strategy in the EIR/EIS is intended to meet the needs of multiple species, including non-listed species, and therefore the overall acres of protection and restoration provided to offset effects in the EIR/EIS differs from that provided in the USFWS BiOP, which relies on specific compensation ratios.

Despite the differences between the two analyses described above, the effects determinations of not adverse/ less than significant presented in the Final EIR/EIS are still applicable for giant garter snake.

1.1.1.2.4. Western Yellow-billed Cuckoo and Least Bell's Vireo

Loss of Habitat and other Effects on Western Yellow-billed Cuckoo and Least Bell's Vireo

Chapter 12 of the EIR/EIS relied on the species models for western yellow-billed cuckoo and least Bell's vireo developed under the BDCP in order to determine impacts on the species from water conveyance facilities construction and restoration. These models rely on subsets of vegetation alliances within the valley/foothill riparian natural community. Conversely, the USFWS BiOP treats all valley/foothill riparian community in the Plan Area as migratory habitat for western yellow-billed cuckoo and as habitat for least Bell's vireo. The species models used for the EIR/EIS were not similarly updated due to the need to maintain a comparable level of detail across the alternatives (BDCP and non-HCP alternatives), as is required under NEPA.

Differences in impact estimation between the EIR/EIS and the USFWS BiOP also occurred due to different methods used for the analysis of geotechnical, safe haven, and transmission line impacts. The EIR/EIS used a different number of geotechnical sites than the USFWS BiOP and relied on the safe haven footprints depicted in the Mapbooks, whereas the USFWS BiOP used assumptions about the number and size of safe haven sites to arrive at an impact estimate. The USFWS BiOP assumes that transmission line construction, geotechnical exploration activities, and safe haven work areas would entirely avoid impacts on western yellow-billed cuckoo and least Bell's vireo habitat, whereas the EIR/EIS assesses potential impacts to these species from these activities.

Both the EIR/EIS and USFWS BiOP provide very similar avoidance and minimization measures to avoid and minimize effects on habitat and individual animals. However, compensation for the loss of habitat is treated differently in the two documents. The EIR/EIS approaches conservation at the natural community level, using specific biological goals and objectives for species to guide the conservation such that the effects of the plan offset any impacts as well as contribute to recovery of the species. The natural community conservation strategy in the EIR/EIS is intended to meet the needs of multiple species, including non-listed species, and therefore the overall acres of protection and restoration provided to offset effects in the EIR/EIS differs from that provided in the USFWS BiOP, which relies on specific compensation ratios.

Despite the differences between the two analyses described above, the effects determinations of not adverse/ less than significant presented in the Final EIR/EIS are still applicable for western yellow-billed cuckoo and least Bell's vireo.

1.1.1.2.5. California Least Tern

Loss of Habitat and other Effects on California Least Tern

Chapter 12 of the EIR/EIS used a species model for California least tern developed under the BDCP to determine impacts on the species from water conveyance facilities construction and restoration. The USFWS BiOP uses the same model, the tidal perennial aquatic habitat model. Differences in impact estimation between the EIR/EIS and the USFWS BiOP are due to different methods used for the analysis of geotechnical, safe haven, and transmission line impacts. The EIR/EIS used a different number of geotechnical sites than the USFWS BiOP and relied on the safe haven footprints depicted in the Mapbooks, whereas the USFWS BiOP used assumptions about the number and size of safe haven sites to arrive at an impact estimate. The USFWS BiOP assumes that transmission line construction, geotechnical exploration activities, and safe haven work areas would entirely avoid impacts on California least tern foraging habitat, whereas the EIR/EIS assesses potential impacts to these species from these activities.

Both the EIR/EIS and USFWS BiOP include avoidance and minimization measures to avoid and minimize effects on habitat and individual species, which are generally similar.

Despite the differences between the two analyses described above, the effects determinations of not adverse/ less than significant presented in the Final EIR/EIS are still applicable for California least tern.

1.1.1.2.6. Riparian Brush Rabbit

Loss of Habitat and other Effects on Riparian Brush Rabbit

Chapter 12 of the EIR/EIS relied on the species model for riparian brush rabbit developed under the BDCP in order to determine impacts on the species from water conveyance facilities construction and restoration. The USFWS BiOP used a different model that limited the amount of suitable habitat to only the southern end of the Delta and used field investigations to determine that there is no suitable riparian brush rabbit habitat within or near other portion of the construction footprint, and therefore there would be not loss of riparian brush rabbit habitat from the construction of the water conveyance facilities. Comparable field investigations were not feasible for the EIR/EIS due to lack of access to much of the modeled habitat, as well as due to the need to maintain a comparable level of detail across the alternatives (BDCP and non-HCP alternatives), as is required under NEPA.

Despite the differences between the two analyses described above, the effects determinations of not adverse/ less than significant presented in the Final EIR/EIS are still applicable for riparian brush rabbit.

1.1.1.2.7. San Joaquin Kit Fox

Loss of Habitat and other Effects on San Joaquin Kit Fox

Chapter 12 of the EIR/EIS used a species model for San Joaquin kit fox developed under the BDCP to determine impacts on the species from water conveyance facilities construction and restoration. The USFWS BiOP, based on a more in-depth species distribution analysis and habitat assessment conducted by DWR, identified approximately 60 acres of potential suitable habitat around Clifton Court Forebay, but otherwise did not identify suitable habitat that would be impacted. The species model used for the EIR/EIS was not similarly updated due to the need to maintain a
comparable level of detail across the alternatives (BDCP and non-HCP alternatives), as is required under NEPA.

Differences in impact estimation between the EIR/EIS and the USFWS BiOP also occurred due to the EIR/EIS's assumption that all safe haven work areas would be temporary where the USFWS BiOP assumes that safe haven work areas will avoid impacts on San Joaquin kit fox habitat.

Both the EIR/EIS and USFWS BiOP provide very similar avoidance and minimization measures to avoid and minimize effects on habitat and individual animals. However, compensation for the loss of habitat is treated differently in the two documents. The EIR/EIS approaches conservation at the natural community level, using specific biological goals and objectives for species to guide the conservation such that the effects of the plan offset any impacts as well as contribute to recovery of the species. The natural community conservation strategy in the EIR/EIS is intended to meet the needs of multiple species, including non-listed species, and therefore the overall acres of protection and restoration provided to offset effects in the EIR/EIS differs from that provided in the USFWS BiOP, which relies on specific compensation ratios.

Despite the differences between the two analyses described above, the effects determinations of not adverse/ less than significant presented in the Final EIR/EIS are still applicable for San Joaquin kit fox.

1.1.1.2.8. Valley Elderberry Longhorn Beetle

Loss of Habitat and other Effects on Valley Elderberry Longhorn Beetle

Chapter 12 of the EIR/EIS used a species model for valley elderberry longhorn beetle developed under the BDCP to determine impacts on the species from water conveyance facilities construction and restoration. The USFWS BiOP uses the same model, which includes riparian habitat and grassland within 200 feet of streams, but does not provide an estimate of effects due to restoration.

Differences in impact estimation between the EIR/EIS and the USFWS BiOP are due to different methods used for the analysis of geotechnical, safe haven, and transmission line impacts. The EIR/EIS used a different number of geotechnical sites than the USFWS BiOP and relied on the safe haven footprints depicted in the Mapbooks, whereas the USFWS BiOP used assumptions about the number and size of the safe haven sites arrive at an impact estimate.

Both the EIR/EIS and USFWS BiOP include very similar avoidance and minimization measures to avoid and minimize effects on habitat and individual animals.

Despite the differences between the two analyses described above, the effects determinations of not adverse/ less than significant presented in the Final EIR/EIS are still applicable for valley elderberry longhorn beetle.

1.1.1.2.9. Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

Loss of Habitat and other Effects on Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

Chapter 12 of the EIR/EIS used a the species model for vernal pool fairy shrimp and vernal pool tadpole shrimp developed under the BDCP to determine impacts on the species from water conveyance facilities construction and restoration. The USFWS BiOP used a different model that used newer information for vernal pools, which was obtained from the wetland delineation that took place within the Conveyance Planning Area. For the EIR/EIS, the model could not be similarly updated because the equivalent level of wetland mapping (delineation done to USACE standards) was not available across the larger planning area. The EIR/EIS also identifies impacts outside of the conveyance footprint for various alternatives (*e.g.*, restoration and transmission lines); thus the model used in the USFWS BiOp would not be suitable for estimating impacts in these areas. Also, the model was not updated because the EIR/EIS needed to maintain a comparable level of detail in analysis of the range of alternatives (BDCP and non-HCP alternatives), as is required under NEPA.

Differences in impact estimation between the EIR/EIS and the USFWS BiOP also occurred due to different methods used for the analysis of geotechnical, safe haven, and transmission line impacts. The EIR/EIS used a different number of geotechnical sites than the USFWS BiOP and relied on the safe haven footprints depicted in the Mapbooks whereas the USFWS BiOP used assumptions about the number and size of the safe haven sites to arrive at an impact estimate. The USFWS BiOP assumes that transmission line construction, geotechnical exploration activities, and safe haven work areas would entirely avoid impacts on vernal pool fairy shrimp and vernal pool tadpole shrimp habitat, whereas the EIR/EIS assesses potential impacts to these species from these activities.

Both the EIR/EIS and USFWS BiOP provide very similar avoidance and minimization measures to avoid and minimize effects on habitat and individual animals. However, compensation for the loss of habitat is treated differently in the two documents. The EIR/EIS approaches conservation at the natural community level, using specific biological goals and objectives for species to guide the conservation such that the effects of the plan offset any impacts as well as contribute to recovery of the species. The natural community conservation strategy in the EIR/EIS is intended to meet the needs of multiple species, including non-listed species, and therefore the overall acres of protection and restoration provided to offset impacts in the EIR/EIS differs from that provided in the USFWS BiOP, which relies on specific compensation ratios.

Despite the differences between the two analyses described above, the effects determinations of not adverse/ less than significant presented in the Final EIR/EIS are still applicable for vernal pool fairy shrimp and vernal pool tadpole shrimp.

5.2 CESA 2081(b) Compliance

For a description of the California WaterFix 2081(b) process and project updates developed during ESA and CESA consultation, please see Sections 5.1 and 5.1.1 above.

5.2.1. Differences Between Draft CESA 2081(b) and Final EIR/S – State-listed Species

5.2.1.1. Longfin smelt

Effects of Water Operations on Spawning, Egg Incubation, Rearing, and Migration Habitat

In the Final EIR/EIS, potential effects to longfin smelt spawning, egg incubation, and rearing habitat are assessed using an X2-longfin smelt abundance relationship developed by Kimmerer et al. (2009). This model essentially shows that outflow in January through June correlates to longfin smelt abundance. A more detailed description of this method, including uncertainties and potential mechanisms driving this relationship, can be found in Chapter 11, Final EIR/EIS, and Chapter 5 in the BDCP. The Final EIR/EIS analysis indicates operations of the PA could result in a potential decrease in longfin smelt abundance, depending on the scenarios analyzed (note that the Final EIR/EIS analyzes H3 and H4 operational scenarios as the bookends of Final EIR/EIS Alternative 4A H3+ operations, with H3 model outputs showing small potential abundance reductions and H4 showing small potential increases). However, the Final EIR/EIS includes a commitment to consult with CDFW as part of the 2081(b) permitting process to ensure spring outflow flows are set to avoid reductions in longfin smelt abundance as a result of project operations (see paragraph below). Adjustments to operations/criteria will also be available through the adaptive management process as appropriate. As such, impacts to longfin smelt spawning, egg incubation, and rearing habitat were determined to be not adverse/less than significant.

The 2081(b) ITP application evaluated potential changes to longfin smelt abundance using an update of the X2-abundance regression conducted by Kimmerer et al. (2009) and Mount et al. (2013), which includes step changes for the introduction of Potamocorbula amurensis and the Pelagic Organism Decline. Overall, results of this analysis indicated small differences in mean relative abundance between the draft 2081(b) PA and NAA. However, CDFW suggested that small differences could accumulate over time. To address potential operational effects due to longfin smelt, CDFW has developed spring outflow criteria that are consistent with existing water conveyance/operations and climate conditions. These criteria are based on a linear relationship between current month's 8RI and recent historic Delta outflow (1980-2016). March-May outflow targets will be determined by looking up 50% exceedance forecasts for the current month's 8RI, which correspond to a specific outflow target. Implementation of this spring outflow condition will ensure outflow under the project is consistent with existing hydrological conditions (March-May). In addition, the draft 2081 (b) ITP indicates the potential for restricted access to spawning habitat upstream of the NDD due to the displacement of low-velocity shoreline habitat from construction

and operations of the NDD intakes. The draft 2081(b) ITP includes approximately 1,750 acres of shallow water habitat mitigation to offset effects related to restricted access to upstream spawning habitat (approximately 1,828 acres of restoration total when accounting for all construction and operational-related effects).¹⁶ With implementation of the Final EIR/EIS mitigation (*e.g.*, spring outflow criteria as determined during the 2081(b) permitting processes and habitat restoration), the CDFW draft 2081(b) ITP indicates that the project will not jeopardize the continued existence of longfin smelt, which is consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.

Effects of Water Operations on Entrainment

As described in Chapter 11, Final EIR/EIS, south Delta entrainment effects were evaluated using PTM for larval longfin smelt and the salvage-density method for juveniles and adults. Overall, these analyses indicated reduced longfin smelt entrainment under the Final EIR/EIS Alternative 4A compared to the NAA, primarily due to reduced south Delta pumping.

The 2081(b) ITP application similarly uses PTM (updated from what was done in the Final EIR/EIS) to evaluate changes in larval entrainment and south Delta entry. In addition, a salvage-Old and Middle River- flow regression based on Grimaldo et al. (2009) was used to assess changes in juvenile longfin smelt salvage. Generally, these analyses suggest reduced entrainment and salvage under the draft 2081(b) PA compared to the NAA, with a few exceptions. Under various conditions (late spring), juvenile salvage was shown to increase under the draft 2081(b) PA due to head of Old River gate (HOR) operations; however, real-time management of south Delta exports and OMR flows will consider HOR operations to minimize effects to listed species. Overall, entrainment-related effects of the PA to longfin smelt are expected to be similar or reduced relative to the NAA; therefore, the CDFW draft 2081(b) ITP findings that the project will not jeopardize the continued-existence of longfin smelt are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant.

Effects of Construction

The description of the Final EIR/EIS methods and analyses (including overall effects) used to evaluate construction impacts to winter-run rearing habitat is generally applicable to the analyses conducted for longfin smelt, adjusted for the different migration timing and location, and species' needs/tolerances/life history strategy. However, potential impacts to longfin smelt are expected to be less than for winter-run due to lower densities near the NDD.

The Final EIR/EIS and 2081(b) ITP application analyze similar impact mechanisms due to construction activities (*e.g.*, pile driving, contaminant disturbance, loss of habitat), although some of the Final EIR/EIS analyses have been somewhat adapted or expanded on. Due to low longfin smelt densities near the NDD (and other structure) and implementation of AMM, in-water work windows, and habitat restoration, results of the 2081(b) ITP application analysis indicate minimal impacts to longfin smelt. Overall, the CDFW draft 2081(b) ITP findings that the project will not jeopardize the continued

existence of longfin smelt are consistent with the Final EIR/EIS impact conclusions of not adverse/ less than significant

5.2.1.2. California Tiger Salamander

See discussion for California tiger salamander in Section 5.1.1.2.2.

5.2.1.3. Giant Garter Snake

See discussion for giant garter snake in Section 5.1.1.2.3

5.2.1.4. Swainson's Hawk

Loss of Habitat and other Effects on Swainson's Hawk

Differences in impacts between the EIR/EIS and the 2081(b) permit application are due in part to different methods used for the geotechnical, safe haven, and transmission line impact analyses. The EIR/EIS used a different number of geotechnical sites than the USFWS BiOP and relied on the safe haven footprints depicted in the Mapbooks where the USFWS BiOP made assumptions about the number and size of the safe haven sites to come up with an estimate. The 2081(b) permit also assumes that transmission line construction, geotechnical exploration activities, and safe haven work areas will avoid impacts on Swainson's hawk, whereas the EIR/EIS assesses potential impacts to Swainson's hawk from these activities.

Both the EIR/EIS and USFWS BiOP include avoidance and minimization measures to avoid and minimize effects on habitat and individual species, which are generally similar.

Despite the differences between the two analyses described above, the effects determinations of not adverse/ less than significant presented in the Final EIR/EIS are still applicable for Swainson's hawk.

5.2.1.5. Tricolored Blackbird

Loss of Habitat and other Effects on Tricolored Blackbird

Chapter 12 of the EIR/EIS relied on the species model for tricolored blackbird developed under the BDCP in order to determine impacts on the species from the water conveyance facilities construction and restoration. The 2081(b) permit application used an updated model based on a revised distance for foraging from roost sites, which came out of discussions with CDFW, and included more recent roost data than what was in the original species account. The model used for the EIR/EIS was not updated because the EIR/EIS needed to maintain a comparable level of detail across the alternatives (BDCP and non-HCP alternatives), which is required under NEPA. Changing the modeled habitat in the BDCP would require changing the entire conservation strategy for the covered species in the Plan.

Differences in impacts between the EIR/EIS and the 2081(b) permit application are also due to different methods used for the geotechnical, safe haven, and transmission line impact analyses. The EIR/EIS used a different number of geotechnical sites than the 2081(b) permit application and relied on the safe haven footprints depicted in the

Mapbooks where the 2081(b) permit application made assumptions about the number and size of the safe haven sites to come up with an estimate. The 2081(b) permit application assumes that transmission line construction, geotechnical exploration activities, and safe haven work areas will avoid impacts on tricolored blackbird nesting and roosting habitat, whereas the EIR/EIS assesses potential impacts to tricolored blackbird from these activities.

Both the EIR/EIS and 2081(b) permit application include avoidance and minimization measures to avoid and minimize effects on habitat and individual species, which are generally similar. Compensation for the loss of habitat is also treated differently in the two documents. The EIR/EIS relies on the general approach used in the BDCP, which approaches conservation at the natural community level, using specific biological goals and objectives for species to guide the conservation such that the effects of the plan offset any impacts as well as contribute to recovery of the species. The natural community conservation in the EIR/EIS is intended to meet the needs of multiple species, including non-listed species, and therefore the overall acres of protection and restoration acknowledged as offsetting the effects in the EIR/EIS will differ from that in the 2081(b) permit application, which relies on specific compensation ratios.

Despite the differences between the two analyses described above, the effects determinations of not adverse/ less than significant presented in the Final EIR/EIS are still applicable for tricolored blackbird.

5.2.1.6. Mason's Lilaeopsis

Loss of Habitat and other Effects on Mason's Lilaeopsis

Chapter 12 of the EIR/EIS utilized a species model for Mason's lilaeopsis that was developed for the BDCP and used this model to develop impacts for water conveyance and restoration. The 2081(b) permit application assessed impacts from water conveyance construction but did not use an acreage of impact; instead it set a take limit of linear feet of shoreline.

Both the EIR/EIS and 2081(b) permit application include avoidance and minimization measures to avoid and minimize effects on habitat and individual species, which are generally similar. Compensation for the loss of habitat is also treated differently in the two documents. The EIR/EIS approaches conservation at the natural community level, using specific biological goals and objectives for species to guide the conservation such that the effects of the plan offset any impacts as well as contribute to recovery of the species. The natural community conservation in the EIR/EIS is intended to meet the needs of multiple species, including non-listed species, and therefore the overall acres of protection and restoration acknowledged as offsetting the effects in the EIR/EIS will differ from that in the 2081(b) permit application, which relies on species-specific compensation ratios.

Despite the differences between the two analyses described above, the effects determinations of not adverse/ less than significant presented in the Final EIR/EIS are still applicable for tricolored blackbird.

5.3 California WaterFix Aquatic Science Peer Review Process

As described in Section 5.1, DWR and USBR are working with NMFS, USFWS, and CDFW in the development of the California WaterFix Biological Opinions (ESA) and 2081(b) incidental take analysis (CESA). To further improve these analyses and associated mitigation, the state and federal agencies have coordinated with the Delta Science Program (DSP) to establish an independent review panel tasked with reviewing (Aquatic Science Review) the aquatic analyses presented in the Biological Assessment, Biological Opinions, and 2081(b) analyses. The Aquatic Science Review, consisting of two phases, began in April 2016 with Phase 1 and finished in December 2016 and January 2017 with Phases 2A and 2B, respectively. The goal of Phase 1 science review was to provide a scientific evaluation of the methods and approaches for developing the Biological Opinions/Biological Assessments and analyses prepared for the Incidental Take Permit (ITP) application. The purpose of the Phase 2A science review was to obtain the view of experts on the use of best available scientific information as it pertains to analyses of effects on aquatic CESA-listed species in the California WaterFix ITP application and the Adaptive Management Framework proposed to integrate future scientific research. monitoring, and decision making during construction and operations of California WaterFix. The Phase 2B science review scientifically evaluated the conclusions/analyses in the draft Biological Opinions for California WaterFix.

In May 2016, following the Phase 1 Aquatic Science Review meeting, the Aquatic Science Panel (Panel) submitted a final report on the Phase 1 review, which included several recommendations to improve the BiOP analytical approach, specific Biological Assessment and 2081(b) aquatic analyses, and the Adaptive Management Framework (AMF). The following table describes some of these Panel recommendations and resulting updates to the documents that were presented to the Panel during Phase 2A in December 2016. Note that several of the Phase 1 Panel recommendations (not listed in the table below) are addressed in the Biological Opinions.

Recommendation /Comment	Agency Action
Review Panel recommended that the BiOP includes a critical analysis and evaluation of the approach to the AM proposed in the PA.	AMF has been revised to include a new section on structured decision making and to emphasize that this technique is already an integral part of the ESA Section 7 compliance process. The AMF also added a description of a new-decision making entity, the Interagency Implementation and Coordination Group
All fish screen criteria described by NMFS (2011) should be explicitly addressed in the BiOP.	Added reference to these criteria in Chapter 3 of the Biological Assessment.

Recommendation /Comment	Agency Action
Evaluate water removal effects during tail end of migration periods when juvenile salmonid abundance is low, in addition to when most juveniles are present in the Delta.	Text added to acknowledge importance of tail end periods.
Evaluate the PA effects on wild fry, parr, and smolt migrants, given that Fall-run Chinook Salmon are likely an important prey of Killer whales	Text added to Biological Assessment to acknowledge these points. In addition, several analyses already presented in the Biological Assessment analyze effects to smaller individuals.
Recommend better accounting of uncertainty with several of the models. This can be done, for example, with development of prediction intervals.	Where applicable, prediction intervals and other acknowledgment of uncertainty added to Biological Assessment.

For Phase 2A, the Panel was charged with reviewing: (1) the draft AMF for California WaterFix and (2) the 2081(b) application analyses of the California WaterFix impacts of take for winterrun Chinook Salmon, spring-run Chinook Salmon, Delta Smelt, and Longfin Smelt. This was followed by the Phase 2B review in which the Panel was charged with reviewing NMFS' analytical approach and FWS' analytical framework, status of the species and critical habitat, environmental baseline, and effects analysis sections of the draft BiOps on California WaterFix for all ESA- and California ESA (CESA)-listed aquatic species and their critical habitat. Overall, the Panel found vast improvements in the analytical approach to assessing potential California WaterFix impacts to state and federally-listed species in response to Phase 1 and 2A Panel comments. Some of these improvements are described below:

- Further capture of uncertainty in BiOP impact assessments by NMFS' definition of weights of evidence (High/Medium/Low), with addition of these definitions to the analytical approach
- Revised AMF with a commitment to monitor effects of climate change, and to adjust planning in response to feedback from the adaptive management and California WaterFix operations; commitment to employing active and passive adaptive management to minimize and avoid potential negative effects to species and promote species conservation.
- Improved discussion on critical habitat and essential fish habitat, which discusses impacts in the context of the entire Delta, considering both direct and indirect impacts.

• Inclusion of new analyses presented in the draft BiOPs, particularly by NMFS (*e.g.*, WRLCM, new Perry analyses on survival and hydrodynamics¹⁷), to reflect the best available science and help fill information gaps. The Panel noted the inclusion of the WRLCM represents a significant improvement in analysis of potential PA operational effects.

Improvements made to the ESA/CESA documents as a result of Phase 2B Panel comments and recommendations, and further coordination between DWR, Reclamation, USFWS, NMFS, and CDFW, include the following:

- To address the uncertainty behind CDFW's approach to establish longfin smelt spring outflow criteria (*i.e.*, CDFW presented modeling using previous month's 8RI to predict current month's Delta outflow, which contained high degree of uncertainty), adoption by CDFW of the Panel recommendation to use current month's 8RI to predict current month's Delta outflow. See the longfin smelt section above for more information on longfin smelt spring outflow criteria.
- Increase of mitigation acreages by USFWS to offset effects to Delta smelt related to restricted access to upstream spawning habitat due to NDD construction and operations.
- Commitment to analyze and implement restoration actions in the Delta, in combination with other changes to the environmental baseline, that would be necessary to meet ESA and CESA standards for any project-related effects on the frequency, duration, and magnitude of reverse flows caused by NDD operations.

Adaptive Management Program

During the entirety of the Aquatic Science Review process, DWR and Reclamation have worked diligently with the DSP and NMFS, USFWS, and CDFW to develop and provide a scientifically sound and complete analysis on the potential effects of the PA on listed species. Through this process and consultation with the Fish and Wildlife Agencies, substantial improvements have been made to the California WaterFix Biological Assessment, Biological Opinions, and draft 2081(b) documents. In particular, improvements to the California WaterFix AMP have been made, including additional details on the AMP implementation schedule, AMP structure and decision-making processes, and a multi-agency AMP agreement to establish agency commitments, roles, and participation in the AMP. The broad purposes of the Adaptive Management Program are to: 1) promote collaborative science, 2) guide (by identifying, prioritizing, and funding) the development and implementation of scientific investigations and monitoring for both permit compliance and adaptive management, 3) apply new information and insights to management decisions and actions, and recommend changes in the Action to DWR and Reclamation, and 4) establish a long-term, funded science infrastructure.

¹⁷ While these recently available modeling tools contribute towards our overall understanding of salmon population dynamics and potential effects of SWP and CVP operations (including the CWF), among other factors, the exact benefits from the CWF commitments cannot be captured within the models (at this time in the models' development) due to uncertainty of representation of these elements within the model structures.

As part of the AMP, the Interagency Implementation Coordination Group (IICG), working in coordination with the Collaborative Science Workgroups, will identify and prioritize potential Adaptive Management Changes to be addressed by the collaborative science efforts. Collaborative science efforts will address uncertainties related to the effects of CVP/SWP operations, operational criteria, and other actions intended to minimize or mitigate effects to protected species. These efforts will inform implementation of such operations, measures, and actions to provide water supply reliability benefits and maintain CESA and ESA compliance. For more information on the AMP, please see the NMFS and USFWS California WaterFix Biological Opinions and the revised California WaterFix Biological Assessment.

Corrections to the Final EIR

This attachment shows the track changes format for the corrections shown in Table 2-1 of the Post Final EIR Developments Section 2.0. The Chapter, page number, Table or Figure number is listed followed by the description of the Correction and the track changes format of the Table or Figure.

Executive Summary, Table ES-8. Summary of BDCP/California WaterFix EIR/EIS Impacts and Mitigation Measures, p. ES-72

AQUA-27: Effects of restored habitat conditions on longfin smelt	1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 8, 9, 2D, 4A, 5A	В	В	NA
	7	В	В	В
	2D, 4A, 5A	LTS	LTS	NA

Executive Summary, Table ES-8. Summary of BDCP/California WaterFix EIR/EIS Impacts and Mitigation Measures, p. ES-86

AQUA-153: Effects of restored habitat conditions on white sturgeon	1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, 9, 2D, 4A, 5A	В	В	B16
	2D, 4A, 5A	LTS	LTS	NA

Executive Summary, Table ES-8. Summary of BDCP/California WaterFix EIR/EIS Impacts and Mitigation Measures, p. ES-92

AQUA-207: Effects	1A, 1B,	В	В	В
of restored habitat	1C, 2A,	NI	NI	NE
conditions on non-	2B, 2C,	(largemouth	(largemouth	(largemouth
covered aquatic	3, 4, 5,	bass,	bass,	bass,
species of primary	6A, 6B,	Sacramento	Sacramento	Sacramento
management	6C, 7, 8, 0	San-Joaquin	San-Joaquin	San-Joaquin
concern	9	roach)	roach)	roach)
	2D, 4A,	LTS ¹⁹ B	LTS ²⁰ B	NA
	5A			

¹⁹ Depending on where and how restoration is carried out, this effect could be beneficial. ²⁰ Depending on where and how restoration is carried out, this effect could be beneficial.

Executive Summary, Table ES-8. Summary of BDCP/California WaterFix EIR/EIS Impacts and Mitigation Measures, p. ES-121

Potential Impact	Alternatives	Impact Conclusions Before Mitigation	Proposed Mitigation (CEQA and NEPA)	Impact Conclusion After Mitigation	
		CEQA		CEQA	NEPA
REC-9: Result in long-term reduction in fishing	NAA (LLT), NAA (ELT), 2D, 4A, 5A	LTS		LTS	NA

opportunities as a result of	1A, 1B, 1C, 2A,	S	AES-1a: Locate new transmission lines and access routes to minimize	LTS	NA
implementing CM2_	2D, 20, 3, 4, E 6A 6D 6C		the removal of trees and shrubs		
CM21	3, 0A, 0D, 0C,		and pruning needed to		
61421	$7, 6, 9, \frac{2D, 4M}{2}$		accommodate new transmission		
	5A		lines and underground		
			transmission lines where feasible		
			AES-1b: Install visual barriers between		
			construction work areas and sensitive		
			receptors		
			AES-1c: Develop and implement a		
			spoil/borrow and reusable tunnel		
			material area management plan		
			AES-1d: Restore barge unloading facility		
			sites once decommissioned		
			AES-1e: Apply aesthetic design		
			treatments to all structures to the extent		
			feasible		
			AES-1f: Locate concrete batch plants		
			and fuel stations away from sensitive		
			visual resources and receptors and		
			facilities		
			AFS-1g: Implement hest		
			management practices to		
			implement project		
			landscaping plan AFS-4h		
			Minimize fugitive light from		
			nortable sources used for		
			construction		
			AFS-4c: Install visual barriers along		
			access routes, where necessary to		
			prevent light spill from truck		
			headlights toward residences		
			TRANS-1a: Implement site-specific		
			construction traffic management plan		
			TRANS-1b: Limit hours or amount		
			of construction activity on		
			congested roadway segments		
			TRANS-1c: Make good faith efforts		
			to enter into mitigation agreements		
			to enhance capacity of congested		
			roadway segments		
			NOI-1a: Employ noise-reducing		
			construction practices during		
	1	1	L L!		

Executive Summary, Table ES-8. Summary of BDCP/California WaterFix EIR/EIS Impacts and Mitigation Measures, p. ES-122

	Impact	Impact	
Potential Impact	Alternatives <mark>Conclusions</mark>	Conclus	ion
	Before	After	

		CEQA	Proposed Mitigation (CEQA and	CEQA	NEPA
REC-10: Result in long- term reduction in	NAA (LLT), NAA (ELT), <mark>2D</mark> ,	LTS		LTS	NA
boating- related recreation opportunities as a result of implementing CM2- CM21	1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, 9 , 2D, 4A, 5A	S	AES-1a: Locate new transmission lines and access routes to minimize the removal of trees and shrubs and pruning needed to accommodate new transmission lines and underground transmission lines where feasibleAES-1b: Install visual barriers between construction work areas and sensitive receptorsAES-1c: Develop and implement a spoil/borrow and reusable tunnel material area management plan AES-1e: Apply aesthetic design treatments to all structures to the extent feasibleAES-1f: Locate concrete batch plants and fuel stations away from sensitive visual resources and receptors and restore sites upon removal of facilitiesAES-1g: Implement best management practices to implement project landscaping plan AES-4b: Minimize fugitive light from portable sources used for construction AES-4c: Install visual barriers along access routes, where necessary, to prevent light spill from truck headlights toward residences TRANS-1a: Implement site-specific construction activity on congested roadway segments NOI-1a: Employ noise-reducing construction practices during construction NOI-1b: Prior to construction, initiate a complaint/response tracking program	LTS	NA

Chapter 1, Introduction Table 1-1. Summary of Agencies and Review, Approval, or Other Responsibilities, in Addition to Those under CEQA and NEPA, page 1-33—1-38. *Correction: Add Agency California Department of Conservation to the Permit, Decision, Approval, or Other Action column to include Permits or Consultations Surface Mining and Reclamation Act.*

Delete Surface Mining and Reclamation Act from Agency Contra Costa County (NEPA cooperating agency), Sacramento County (NEPA cooperating agency, Solano County (NEPA cooperating agency), and Yolo County (NEPA cooperating agency).

Agency	Permit, Decision, Approval, or Other Action ^a
Federal	
Bureau of Reclamation (NEPA lead agency)	Permits or ConsultationsESA Section 7 consultationSection 106 of the National Historic Preservation ActOther considerationsFish and Wildlife Coordination Act, 16 USC 661-667e (applies to restoration activities and not water operations)Archaeological Resource Protection ActIndian Trust AssetsCentral Valley Project Improvement ActFederal Water Project Recreation Act (16 USC 460[L] 12-21)
U.S. Fish and Wildlife Service (NEPA lead or cooperating agency ¹⁸)	Permits or Consultations All provisions of the Endangered Species Act, including: Biological Opinion (Section 7 of ESA) Incidental Take Permit (Section 10 [a][1][B] of ESA) for BDCP alternatives Other considerations Fish and Wildlife Coordination Act, 16 USC 661-667e Migratory Bird Treaty Act EO 13186 Migratory Birds EO 13112 Invasive Species Central Valley Project Improvement Act
National Marine Fisheries Service (NEPA lead or cooperating agency ¹⁹)	Permits or Consultations All provisions of the Endangered Species Act, including: Biological Opinion (Section 7 of ESA) Incidental Take Permit (Section 10 [a][1][B] of ESA) for BDCP alternatives Other Considerations Essential Fish Habitat under Magnuson-Stevens Fisheries Conservation and Management Act Fish and Wildlife Coordination Act, 16 USC 661-667e
U.S. Army Corps of Engineers (NEPA cooperating agency)	Permits or Consultations Clean Water Act Section 404 Rivers and Harbors Act Section 10 Rivers and Harbors Act Section 14, 33 USC 408 ESA Section 7 consultation Section 106 of the National Historic Preservation Act
	Other Considerations Federal Water Project Recreation Act 16 USC 460(L) 12-21 Flood Control Act (Public Law 78-534 Stat. 890) Protection of Wetlands (EO 11990) Floodplain Management (EO 11988) Fish and Wildlife Coordination Act, 16 USC 661-667e

¹⁸ NEPA lead agency for actions involving BDCP alternatives. NEPA cooperating agency for actions involving Alternative 4A or other non-HCP alternatives.

¹⁹ NEPA lead agency for actions involving BDCP alternatives. NEPA cooperating agency for actions involving Alternative 4A or other non-HCP alternatives.

Agency	Permit, Decision, Approval, or Other Action ^a
U.S. Environmental	NEPA Review (Clean Air Act, Section 309)
Protection Agency	Clean Water Act Review; and
(NEPA cooperating agency)	Clean Water Act Section 404 permitting oversight
State Historic Preservation	Permits or Consultations
Officer	Consultation under National Historic Preservation Act, Section 106;
	California State Projects (Public Resources Code Sections 5024, 5024.5)
U.S. Coast Guard (Potential	<u>Permits</u>
NEPA cooperating agency)	Rivers and Harbors Act Section 9 Bridge Permits
	Construction in Navigable Waters
	Navigational Aids – Private Aids to Navigation
Natural Resources Conservation Service	Farmland Protection Policy Act
State	
California Department of	Other considerations
Water Resources	Water Code Sections 11100 et seq. (Central Valley Project Act)
(CEQA lead agency)	Water Code Sections 12930 et seg. (California Resources Development
	Bond Act)
	Water Code 11451 (Control of Project)
	Approval of SWP water supply contract amendment and funding
	agreements
California Department of	Permits or Consultations
Fish and Wildlife (CEQA responsible agency,	NCCP Findings and Approval, Fish and Game Code Sections 2800 et seq. for BDCP alternatives
trustee agency)	California Endangered Species Act, Incidental Take Permit – Section
	2081(b) for Alternative 4A or other non-HCP alternatives
	Streambed Alteration Master Agreement (Fish and Game Code Section 1602)
	Scientific Collection permits under Fish and Game Code
	State wildlife areas Encroachment Permit
	Other considerations
	Instream Flow – Public Resources Code Section 10000 et seq.
	Fish and Game Code Section 5650 – water pollution
	Fish and Game Code Section 1790 – wetlands
	Fish and Game Code Section 3503 – Nests and Eggs
	Fish and Wildlife Coordination Act, 16 USC 661-667e
	Migratory Birds, Fish and Game Code Section 3513
	Raptors, Fish and Game Code Section 3503.5
	Code Section 1002 and California Code of Regulations Title 14 Sections 650 and 670.7 (Plan implementation)

Agency	Permit, Decision, Approval, or Other Action ^a
Agency State Water Resources Control Board (CEQA responsible agency)	Permit, Decision, Approval, or Other Action ^a Permits or Consultations Section 401 Water Quality Certification and Waste Discharge Requirements, Porter-Cologne Act Water Right Change Petitions Clean Water Act Section 402 National Pollutant Discharge Elimination System Permit Compliance and NPDES Construction Stormwater General Permit Petitions for Extension of Time for Existing Water Right Permits Water Quality Order 99-08-DWQ: General Permit for Storm Water
	Discharges Associated with Construction Activity (33 USC 1342) Water Right for Long-term Transfer Petitions <u>Other considerations</u> Water Quality Control Plan for San Francisco Bay/Sacramento-San Joaquin Delta Estuary Basin Plan Amendment (33 USC 13240) General Certification Order for Dredging for Restoration Projects Groundwater Quality Monitoring Act, Water Code Sec 10780-10782.3 Porter-Cologne Act, California Water Code Sec 13000 et seq. Surface Water Rights, California Code of Regulations Section 303 State Water Board Decision 1641 (Water Quality)
Central Valley Regional Water Quality Control Board (potential CEQA responsible agency)	Permits or Consultations Discharges Associated with Construction Activity (33 USC 1342) Regional General Permits Waste Discharge Requirements for Dredging Projects or Fill-Related Activities Other considerations Basin Plan Amendment (33 USC 13240)
San Francisco Bay Regional Water Quality Control Board (potential CEQA responsible agency)	Permits or Consultations National Pollutant Discharge Elimination System (316[b] Permit) Stormwater Permit Waste Discharge Requirements for Dredging Projects or Fill-Related Activities Other considerations Basin Plan
Delta Stewardship Council (CEQA responsible agency)	Other considerations Determining, on appeal, whether a BDCP alternative meets statutory criteria in the Delta Reform Act for inclusion in the Delta Plan (Water Code Section 85320) Determining, on appeal, whether Alternative 4A or other non-HCP alternative is consistent with the Delta Plan (Water Code Section 85225 et seq.)
State Lands Commission (CEQA responsible agency, trustee agency)	<u>Other considerations</u> Possible lease involving granted tide and submerged lands
California Department of Parks and Recreation (potential CEQA responsible agency, trustee agency)	Permits or Consultations Encroachment Permit

Agency	Permit, Decision, Approval, or Other Action ^a
California Department of Boating and Waterways (potential ^b CEQA responsible agency)	Other considerations Coordination on construction and placement of gates, signage, and use of gates
California Department of Transportation (CEQA responsible agency)	<u>Permits or Consultations</u> Encroachment Permit for realignment of State Route 160
California Department of	Permits or Consultations
Conservation	Surface Mining and Reclamation Act
Central Valley Flood Protection Board	<u>Permits or Consultations</u> Coordination consistent with local sponsor requirements under USACE Section 408 requirements
Regional Air Pollution Control Districts, California Air Resources Board (potential CEQA responsible agencies)	Permits or Consultations Permit to Operate an Internal Combustion Engine Stationary Source Permit Use of Portable Equipment During Construction <u>Other considerations</u> Clean Air Act
California Department of Public Health (potential CEQA responsible agency)	Permits or Consultations Water Supply Permits for Operations of Public Drinking Water Systems Other considerations State Drinking Water Program
San Francisco Bay Area Conservation and Development Commission (potential CEQA responsible agency)	<u>Other considerations</u> California Coastal Act/McAteer-Petris Act
Division of Safety of Dams (potential CEQA responsible agency)	<u>Permits or Consultations</u> California Code of Regulations Title 23, Section 310
California Public Utilities Commission	<u>Permits or Consultations</u> Right of way; potential relocation of utilities
Local and Other	
State and Federal Contractors Water Agency (NEPA cooperating agency)	Joint Powers Authority created for purposes of pursuing BDCP research and study
Western Area Power Administration (potential NEPA cooperating agency)	System Impact Study Facilities Studies Provide transmission service ²⁰
Port of Stockton	<u>Permits or Consultations</u> Coordination consistent with local sponsor requirements under USACE Section 408 requirements

²⁰ If requested, to support Reclamation's pending decision, Western Area Power Administration may perform the necessary construction, upgrades, relocations, or modifications of facilities and structures necessary, and provide transmission service.

Agency	Permit, Decision, Approval, or Other Action ^a
Contra Costa County (NEPA cooperating agency)	Floodplain development regulations (required by National Flood Insurance Program)
	Williamson Act cancellations
	Surface Mining and Reclamation Act
Sacramento County (NEPA cooperating agency)	Floodplain development regulations (required by National Flood Insurance Program)
	Williamson Act cancellations
	Surface Mining and Reclamation Act
Solano County (NEPA cooperating agency)	Floodplain development regulations (required by National Flood Insurance Program)
	Williamson Act cancellations
	Surface Mining and Reclamation Act
Yolo County (NEPA cooperating agency)	Floodplain development regulations (required by National Flood Insurance Program)
	Williamson Act cancellations
	Surface Mining and Reclamation Act
Reclamation District 999 (NEPA cooperating agency)	Easement/Right of way
Reclamation District 150 (NEPA cooperating agency)	Easement/Right of way
Reclamation District 551 (NEPA cooperating agency)	Easement/Right of way
Reclamation District 3 (NEPA cooperating agency)	Easement/Right of way
North Delta Water Agency (NEPA cooperating agency)	Interest in resource issues
Individual SWP Contractors	3
Alameda County Flood	Possible actions related to the BDCP alternatives
Control and Water Conservation District, Zone	
7 (potential CEQA	
responsible agency)	Describle a strange malete date de CDCD alternations
District (potential CEQA responsible agency)	Possible actions related to the BDCP alternatives
Kern County Water Agency	Possible actions related to the BDCP alternatives
(potential CEQA responsible agency)	
Metropolitan Water District	Possible actions related to the BDCP alternatives
of Southern California	
(potential CEQA	
responsible agency)	
Individual CVP Contractors	c
San Luis & Delta-Mendota Water Authority (potential CEOA responsible agency)	Possible actions related to the BDCP alternatives
The Westlands Water	Possible actions related to the BDCP alternatives
District (potential CEQA	
responsible agency)	

Agency		Permit,	Decision, A	pproval,	or Other Act	ion ^a			

^a This list is not all inclusive and the agencies may use the EIR/EIS for other requirements not identified in this table.

^b The term *potential* is used in this table generally. Whether particular entities are responsible agencies will be determined when a final BDCP is approved.

^c To be determined when financing agreements are identified.

Chapter 3, Description of Alternatives, page 3-55, Table 3-9. *Revision: acreage updates after consultation with the USFWS during the Section 7 Endangered Species Act Compliance process. See Section 2.0 above for description of acreage changes.*

Environmental Commitment 3: Natural Communities Protection and Restoration					
Valley/Foothill Riparian	Up to 103 acres				
Grassland	Up to 1,060 acres				
Vernal Pool Complex and Alkali Seasonal Wetland Complex	Up to 188 acres				
Nontidal Marsh	Up to 119 acres				
Cultivated Lands	Up to 11,870 acres				
Total:	Up to 13,340 acres				
Environmental Commitment 4: Tidal Natural Communities Restoration	Up to 295 1,828 acres				
Environmental Commitment 6: Channel Margin Enhancement	Up to 4.6 levee miles				
Environmental Commitment 7: Riparian Natural Community Restoration	Up to 251 271 acres				
Environmental Commitment 8: Grassland Natural Community	Up to 1,070-2,092 acres				
Environmental Commitment 9: Vernal Pool and Alkali Seasonal Wetland Complex Restoration	Up to 48 acres				
Environmental Commitment 10: Nontidal Marsh Restoration	Up to 832 acres				
Environmental Commitment 11: Natural Communities Enhancement and Management	At sites protected or restored under Environmental Commitments 3–10				
Environmental Commitment 12: Methylmercury Management	At sites restored under Environmental Commitment 4				
Environmental Commitment 15: Localized Reduction of Predatory Fishes	At north Delta intakes and at Clifton Court Forebay				
Environmental Commitment 16: Nonphysical Fish Barrier	At Georgiana Slough				

Table 3-9. Environmental Commitments under Alternative 4A

Chapter 3, Description of Alternatives, page 3-75 to 76, Table 3-13a. Correction: Table incorrectly identified several non-federally listed species as being under the jurisdiction of the USFWS.

The status of tricolored blackbird was changed to reflect its status as a candidate for listing under CESA at the time the document was finalized:

			Status
No.	Common Name	Scientific Name	(Fed/State/CNPS) ¹
Fish	(11 species)		
1	delta smelt‡	Hypomesus transpacificus	Т/Е/-
2	longfin smelt‡	Spirinchus thaleichthys	C/T/-
3	Chinook salmon, Sacramento River winter-run ESU*	Oncorhynchus tshawytscha	E/E/-
4	Chinook salmon, Central Valley spring- run ESU*	Oncorhynchus tshawytscha	Т/Т/-
5	Chinook salmon, Central Valley fall- and late fall–run ESU*	Oncorhynchus tshawytscha	-/SSC/-
6	Steelhead, Central Valley DPS*	Oncorhynchus mykiss	Т/-/-
7	Sacramento splittail‡	Pogonichthys macrolepidotus	-/SSC/-
8	green sturgeon, southern DPS*	Acipenser medirostris	T/SSC/-
9	white sturgeon*	Acipenser transmontanus	-/-/-
10	Pacific lamprey	Entosphenus tridentatus	-/-/-
11	river lamprey	Lampetra ayresii	-/-/-
Mam	nmals (5 species)		
12	riparian brush rabbit‡	Sylvilagus bachmani riparius	E/E/-
13	riparian woodrat (San Joaquin Valley)‡	Neotoma fuscipes riparia	E/SSC/-
14	salt marsh harvest mouse [‡]	Reithrodontomys raviventris	E/E, FP/–
15	San Joaquin kit fox‡	Vulpes macrotis mutica	E/T/-
16	Suisun shrew	Sorex ornatus sinuosus	-/SSC/-
Bird	s (11 species)		
17	California black rail	Laterallus jamaicensis coturniculus	–/T, FP/–
18	California clapper rail‡	Rallus longirostris obsoletus	E/E, FP/-
19	greater sandhill crane	Grus canadensis tabida	-/T,FP/-
20	least Bell's vireo‡	Vireo bellii pusillus	E/E/-
21	Suisun song sparrow	Melospiza melodia maxillaries	-/SSC/-
22	Swainson's hawk	Buteo swainsoni	-/T/-
23	tricolored blackbird	Agelaius tricolor	-/SSC/-
24	western burrowing owl	Athene cunicularia hypugaea	-/SSC/-
25	western yellow-billed cuckoo [‡]	Coccyzus americanus occidentalis	С/Е/-
26	white-tailed kite	Elanus leucurus	-/FP/-
27	yellow-breasted chat	Icteria virens	-/SSC/-
Rept	tiles (2 species)		
28	giant garter snake‡	Thamnophis gigas	Т/Т/-
29	western pond turtle	Actinemys marmorata	-/SSC/-
Amp	ohibians (2 species)		
30	California red-legged frog [‡]	Rana draytonii	T/SSC/-
31	California tiger salamander	Ambystoma californiense	Т/Т/-
Immo	(Central valley DPS)*		
inve	Colifornia linderialla	Lindonialla aggidantalia	
32	California inderiena	Linderiella occidentalis	-/-/-
33 24	longhorn foiry chrimp ⁺	Drunchinecta conservation	E/-/- E/ /
34 25	miduallou fairu shrimn	Branchinecta masovallansis	L/-/-
33 26	uniuvaney ian y Sin inip vallov oldorborry longhorn bootle [†]	Di unchinectu mesovullensis Desmocarus californique dimorphue	-/-/- T/ /
30 27	vancy cluci belly longilol il beelle	Pesitiocei us cuijoi nicus unitoi pilus Branchinacta hinchi	т/-/- т/_/_
57	vernar poor ian y sin inip*	σι αποπιπεστα τγποπι	1/-/-

Table 3-13a. BDCP Covered Species

			Status
No.	Common Name	Scientific Name	(Fed/State/CNPS) ¹
38	vernal pool tadpole shrimp‡	Lepidurus packardi	Е/-/-
Plan	ts (18 species)		
39	alkali milk-vetch	Astragalus tener var. tener	-/-/1B
40	Boggs Lake hedge-hyssop	Gratiola heterosepala	-/E/1B
41	Brittlescale	Atriplex depressa	-/-/1B
42	Carquinez goldenbush	Isocoma arguta	-/-/1B
43	Delta button celery	Eryngium racemosum	-/E/1B
44	Delta mudwort	Limosella subulata	-/-/2
45	Delta tule pea	Lathyrus jepsonii var. jepsonii	-/-/1B
46	dwarf downingia	Downingia pusilla	-/-/2
47	Heartscale	Atriplex cordulata	-/-/1B
48	Heckard's peppergrass	Lepidium latipes var. heckardii	-/-/1B
49	Legenere	Legenere limosa	-/-/1B
50	Mason's lilaeopsis	Lilaeopsis masonii	-/R/1B
51	San Joaquin spearscale	Atriplex joaquiniana	-/-/1B
52	side-flowering skullcap	Scutellaria lateriflora	-/-/2
53	slough thistle	Cirsium crassicaule	-/-/1B
54	soft bird's-beak [‡]	Cordylanthus mollis ssp. mollis	E/R/IB
55	Suisun Marsh aster	Symphyotrichum lentum	-/-/1B
56	Suisun thistle [‡]	Cirsium hydrophilum var. hydrophilum	E/-/1B
ESU DPS	Evolutionarily Significant Unit.Distinct Population Segment.		
* Spe	ecies under NMFS jurisdiction.		
* Spe	ecies under USFWS jurisdiction.		

¹ Status:

Federal

- E = Listed as endangered under ESA.
- T = Listed as threatened under ESA.
- C = Candidate for listing under ESA.

State

- E = Listed as endangered under CESA.
- T = Listed as threatened under CESA.
- R = Listed as rare under the California Native Plant Protection Act.
- SSC = California species of special concern.

FP = Fully protected under the California Fish and Game Code.

California Native Plant Society (CNPS)

- 1B = rare or endangered in California and elsewhere.
- 2 = rare and endangered in California, more common elsewhere.

Chapter 3, Description of Alternatives, page 3-102, Table 3-19. *Correction: Tunnel 1 connecting Intakes 1 and 2 to the intermediate forebay, maximum flow 6,000 cfs*

Table 3-19. Summary of Physica	I Characteristics under Alternatives 7 and 8
--------------------------------	--

Feature Description/Surface Acreage ^a	Approximate Characteristics
Overall project	
Conveyance capacity (cfs)	9,000
Overall length (miles)	45
Intake facilities/approximately 60 acres average per site	
Number of on-bank fish-screened intakes	3
Maximum diversion capacity at each intake (cfs)	3,000
Intake pumping plants/(included with intake facilities)	
Six pumps per intake plus one spare, capacity per pump (cfs)	500
Total dynamic head (ft)	30-57
Tunnels/370 acres (permanent subsurface easement = 1,860 acres)	
Tunnel 1 connecting Intake s 1 and 2 to the intermediate forebay, n	naximum flow 6,000 cfs
Tunnel length (ft)	20,000
Number of tunnel bores; number of shafts (total)	1; 2
Tunnel finished inside diameter (ft)	26
Tunnel 2 connecting intermediate pumping plant to Byron Tract Fo	prebay, maximum flow 9,000 cfs
Tunnel length (ft)	183,000
Number of tunnel bores; number of shaft sites (total)	2; 13
Tunnel finished inside diameter (ft)	26
Intermediate forebay/925 acres	
Water surface area (acres)	760
Active storage volume (af)	5,250
Emergency spillway inundation area (acres)	350
Intermediate pumping plant (at southern end of intermediate forebay))
Number of pumps, capacity per pump (cfs)	9 at 1,000 cfs; 2 at 500 cfs
Total dynamic head (ft)	0-90
Byron Tract Forebay/840 acres	
Water surface area (acres)	600
Active storage volume (af)	4,300
Power requirements	
Total conveyance electric load (MW)	80
af = acre-feet. cfs = cubic feet per second.	
ft = feet.	
MW = megawatt.	
^a Acreage estimates represent the permanent surface footprints of sel other areas including temporary work areas and those designated for	ected facilities. Characteristics of or borrow, spoils, and reusable
tunnel material storage are reported in Appendix 3C, Construction As	sumptions for Water Conveyance

Facilities. Overall project acreage includes some facilities not listed, such as permanent access roads.

Chapter 11, Fish and Aquatic Resources, page 11-12, Table 11-1A-SUM1. *Correction: Alternatives 4 and 4A should each show 7 barge landings instead of 6.*

		Temporar	y Impacts	Permanen	t Impacts		
Alternatives	Intakes	Tidal Perennial Habitat (acres)	Channel Margin Habitat (miles)	Tidal Perennial Habitat (acres)	Channel Margin Habitat (miles)	Number of Barge Landings	Overwater Area Affected (acres)
1A	1-5	64.6	2.73	16.7	3.09	6	2.04
1B	1-5	64.6	2.73	16.7	3.09	1	0.34
1C	W1-W5	53.2	1.93	20.4	2.89	2	0.68
2A	1, 2, 3, 6, 7	70.0	2.60	17.1	3.44	6	2.04
2B	1, 2, 3, 6, 7	70.0	2.60	17.1	3.44	1	0.34
2C	W1-W5	53.2	1.93	20.4	2.89	2	0.68
2D	1-5	44.9	3.44	10.8	1.82	6	2.04
3	1 and 2	32.9	0.85	8.3	1.93	6	2.04
4	2, 3, and 5	29.9	2.65	6.6	1.02	6 7	2.04
4A	2, 3, and 5	29.9	2.65	6.6	1.02	6 7	2.04
5	1	16.2	0.34	4.1	1.01	6	2.04
5A	2	12.3	1.12	2.6	0.37	6	2.04
6A	1-5	64.6	2.73	16.7	3.09	6	2.04
6B	1-5	64.6	2.73	16.7	3.09	1	0.34
6C	W1-W5	53.2	1.93	20.4	2.89	2	0.68
7	2, 3, and 5	40.3	1.93	10.3	1.78	6	2.04
8	2, 3, and 5	40.3	1.93	10.3	1.78	6	2.04
9	None	72.8 ^a	ND	15.5 ^a	0.91 ^a	55	1.70
^a Aquatic habitat impacts for structures other than intakes (see Table 11-9-1 in Section 11.3.4.16)							

 Table 11-1A-SUM1. Number and Location of Intakes and Associated Temporary and Permanent

 Impacts of Construction Activities on Aquatic Habitat by Alternative

Appendix 31B, Mitigation Measure WQ-7e: CCWD Settlement Agreement, page 31B-25 to 31, Tables 31B-1, 31B,-2, 31B-3, and 31B-4. *Correction: Corrected impact numbers due to overlap with CCWD facilities and the water conveyance footprint.*

Also add the following language regarding California least tern:

The impacts on tidal perennial aquatic habitat are actually on a canal and though included as part of the California least tern model the impacts to this habitat would not likely affect the species because they primarily forage in nearshore marine and estuarine environments and are not known to nest near Clifton Court Forebay.

	Permanent	Temporary	Total
Natural Community	Impacts	Impacts	Impacts
Tidal perennial aquatic	0.04 0	0	0. 04 <mark>0</mark>
Tidal brackish emergent wetland	0	0	0
Tidal freshwater emergent wetland	0	0	0
Valley/foothill riparian	0	0	0

Nontidal perennial aquatic	0	0	0
Nontidal freshwater perennial emergent wetland	0	0	0
Alkali seasonal wetland complex	0	0	0
Vernal pool complex	0	0	0
Managed wetland	0	0	0
Other natural seasonal wetland	0	0	0
Grassland	0	0	0
Inland dune scrub	0	0	0
Cultivated lands	11.87	3.21 2.5	15.08

Table 31B-2. Effects of Victoria Island Interconnection Construction on Species Covered under the BDCP

Species	Permanent Impacts	Temporary Impacts	Total Impacts
Riparian brush rabbit	0	0	0
Riparian woodrat	0	0	0
Salt marsh harvest mouse	0	0	0
San Joaquin kit fox	0	0	0
Suisun shrew	0	0	0
California black rail	0	0	0
California clapper rail	0	0	0
California least tern	0.04 0	0.04 0	0.04 0
Greater sandhill crane			
Roosting and foraging – Permanent	0	0	0
Roosting and foraging – Temporary	0	0	0
Foraging	11.23 1.6	3.09 2.4	14.32 4.0
Tota	11.23 1.6	3.09 2.4	14.32 4.0
Least Bell's vireo	0	0	0
Suisun song sparrow	0	0	0
Swainson's hawk			
Foraging habitat	11.51	3.09	14.60
Nesting habitat	0	0	0
Total	l 11.51	3.09	14.60
Tricolored blackbird			
Breeding habitat-ag foraging	1.09 0	0	1.09 0
Breeding habitat-foraging	0	0	0
Breeding habitat-nesting	0	0	0
Nonbreeding habitat-foraging ag	0	0	0
Nonbreeding habitat-roosting	0	0	0
Nonbreeding habitat-foraging	0	0	0
Tota	l 1.09 0	0	1.09
Western burrowing owl			
High-value habitat	0	0	0
Low-value habitat	0.79	0	0.79

	Total			
Western yellow-billed cuckoo		0	0	0
White-tailed kite				
Breeding habitat		0	0	0
Foraging habitat		11.51 1.6	3.09 2.4	14.60 4.0
	Total	11.51 1.6	3.09 2.4	14.60 4.0
		Permanent	Temporary	Total
Species		Impacts	Impacts	Impacts
Yellow-breasted chat		0	0	0
Giant garter snake				
Aquatic - tidal		0	0	0
Aquatic - nontidal		0	0	0
Upland		1.05 0	0	1.05 0
	Total	1.05	0	1.05
Aquatic breeding, foraging, and movement (feet)		51 0	51 0	51 0
Western pond turtle				
Aquatic habitat		0.04	0	0.04
Upland nesting and overwintering habitat		11.87	3.21 2.5	15.08 4.1
Upland nesting and overwintering habitat-NHD		0	0	0
	Total	11.91	3.21 2.5	15.12 4.1
Aquatic habitat linear (feet) – NHD		51 0	51 0	51 0
California red-legged frog		0	0	0
California tiger salamander		0	0	0
Valley elderberry longhorn beetle		0	0	0
California linderiella		0	0	0
Conservancy fairy shrimp		0	0	0
Longhorn fairy shrimp		0	0	0
Midvalley fairy shrimp		0	0	0
Vernal pool fairy shrimp		0	0	0
Vernal pool tadpole shrimp		0	0	0
Brittlescale		0	0	0
Heartscale		0	0	0
San Joaquin spearscale		0	0	0
Carquinez goldenbush		0	0	0
Delta button celery		0	0	0
Delta mudwort		0	0	0
Mason's lilaeopsis		0	0	0
Delta tule pea		0	0	0
Suisun Marsh aster		0	0	0
Side-flowering skullcap		0	0	0
Slough thistle		0	0	0
Soft bird's-beak		0	0	0
Suisun thistle		0	0	0

Alkali milk-vetch	0	0	0
Legenere	0	0	0
Heckard's peppergrass	0	0	0
Boggs Lake hedge-hyssop	0	0	0
Dwarf downingia	0	0	0

Table 31B-3. Effects of Clifton Court Forebay Interconnection Construction on Natural Communities

Natural Community	Permanent Impacts	Temporary Impacts	Total Impacts
Tidal perennial aquatic	0.28	0	0.28
Tidal brackish emergent wetland	0	0	0
Tidal freshwater emergent wetland	0	0	0
Valley/foothill riparian	0.25	0	0.25
Nontidal perennial aquatic	0.11	0.13	0.24
Nontidal freshwater perennial emergent wetland	0	0	0
Alkali seasonal wetland complex	0	0	0
Vernal pool complex	0	0	0
Managed wetland	0.58	0	0.58
Other natural seasonal wetland	0	0	0
Grassland	3.20 0.15	0	3.20 0.15
Inland dune scrub	0	0	0
Cultivated lands	28.3 4 <mark>28.22</mark>	4 0.26 40.08	68.61 68.29

Table 31B-4. Effects of Victoria Island Interconnection Construction on Species Covered undertheBDCP

Species		Permanent Impacts	Temporary Impacts	Total Impacts
Riparian brush rabbit		*	*	*
Riparian habitat		0.25 0	0	0.25 0
Grassland habitat		3.06 01	0	3.06 0
	Total	3.31 0	0	3.31 0
Riparian woodrat		0	0	0
Salt marsh harvest mouse		0	0	0
San Joaquin kit fox		0.15	0	0.15
Suisun shrew		0	0	0
California black rail		0	0	0
California clapper rail		0	0	0
California least tern		0.28	0	0.28
Greater sandhill crane				
Roosting and foraging—Permanent		0	0	0
Roosting and foraging—Temporary		0	0	0

Foraging		21.19	33.92	55.11
	Total	21.19	33.92	55.11
Least Bell's vireo		0.25 0	0	0.25 0
Suisun song sparrow		0	0	0
Swainson's hawk				
Foraging habitat		27.99 24.80	38.47 38.29	66.46 63.10
Nesting habitat		0.25 0	0	0.25 0
	Total	28.23 24.80	38.47	66.70 63.10
Tricolored blackbird				
Breeding habitat-ag foraging		7.89	12.58	20.47
Breeding habitat-foraging		3.20	0	3.20
Breeding habitat-nesting		0.25	0	0.25
Nonbreeding habitat-foraging ag		0	0	0
Nonbreeding habitat-roosting		0	0	0
Nonbreeding habitat-foraging		0	0	0
	Total	11.34	12.58	23.92
Western burrowing owl				
High-value habitat		3.20	0	3.20
Low-value habitat		24.79	38.47	63.26
	Total	27.99	38.47	66.46

¹ Although the riparian brush habitat model identifies areas of suitable habitat on Victoria island, site surveys performed in 2015 indicate that the modeled habitat is not suitable for the species, and is unoccupied.

		Permanent	Temporary	Total
Species		Impacts	Impacts	Impacts
Western yellow-billed cuckoo				
Breeding habitat		0	0	0
Migratory habitat		0.25	0	0.25
	Total	0.25	0	0.25
White-tailed kite				
Breeding habitat		0.25	0	0.25
Foraging habitat		27.99 <mark>24.8</mark>1	38.47	66.46 63.10
	Total	28.23	38.47 38.29	66.70 63.10
Yellow-breasted chat		0.25	0	0.25
Giant garter snake				
Aquatic		0.13	0	0.13
Upland		2.12 0	0	2.12 0
	Total	2.25	0	2.25 0
Aquatic breeding, foraging, and movement (feet)		175	150	325
Western pond turtle				
Aquatic habitat		0.39	0.13	0.52
Upland nesting and overwintering habitat		32.22 28.22	40.26 40.08	72.48 68.30

Upland nesting and overwintering habitat-NHD		0.15	0	0.15
	Total	32.76 28.76	4 0.39 40.21	73.15 68.97
Aquatic habitat linear (feet)—NHD		523	747	1,269
California red-legged frog				
Aquatic habitat		0.11	0.13	0.24
Upland cover and dispersal habitat		0	0	0
	Total	0.11	0.13	0.24
California tiger salamander		0	0	0
Valley elderberry longhorn beetle				
Riparian vegetation		0.25	0	0.25
Nonriparian channels and grasslands		1.51 0.15	0	1.51 0.15
	Total	1.76 0.15	0	1.76 0.15
California linderiella		0	0	0
Conservancy fairy shrimp		0	0	0
Longhorn fairy shrimp		0	0	0
Midvalley fairy shrimp		0	0	0
Vernal pool fairy shrimp		0	0	0
Vernal pool tadpole shrimp		0	0	0
Brittlescale		0	0	0
Heartscale		0	0	0
San Joaquin spearscale		0	0	0
Carquinez goldenbush		0	0	0
Delta button celery		0	0	0

Assessment of January 2017 Final EIR Comments from Parties to State Water Board Change Point of Diversion Hearing

Categories that comment falls within:

A - In EIR

B - In Hearing C - Not a CEQA issue D – Unsubstantiated

				Categories (A-In EIR; B-In Hearing; C-Not a CEOA issue; D-
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
	Physical Injury	Land Evidence submittal by Local Agencies of the North Delta		
LAND	folder	et al., and the San Joaquin County Protestants	Evidence submittal	B, D
		Exhibit B RESPONSE OF CITY OF FOLSOM, CITY OF		
		ROSEVILLE, SAN JUAN WATER DISTRICT AND SACRAMENTO	RESPONSE TO	
San Juan	BKS clients	SUBURBAN WATER DISTRICT TO EVIDENTIARY OBJECTIONS	EVIDENTIARY	
Water	FEIR FEIS	AND JOINDER TO SACRAMENTO VALLEY WATER USERS'	OBJECTIONS AND	
District	Comment letter	RESPONSE TO EVIDENTIARY OBJECTIONS	JOINDER T	B, C
	City of Antioch			
	Final EIR			
City of	Comments_com	Attachment 5: Written testimony of Ron Bernal in the		
Antioch	pressed	WaterFix Change Petition Proceedings	Antioch-100	B, C
	City of Antioch			
	Final EIR		Antioch-101,	
City of	Comments_com	Attachment C: Agreement between the State of California and	Antioch-102,	
Antioch	pressed	the City of Antioch	Antioch-218	B, C
	City of Antioch	Attachment 2A: Exponent (2016). Report on the Effects of the		
	Final EIR	California WaterFix Project on the City of Antioch. Exhibit		
City of	Comments_com	Antioch-202 of the WaterFix Change Petition Proceedings.		
Antioch	pressed	August 31, 2016.	Antioch-202	В
	City of Antioch			
	Final EIR	Attachment 1 BDCP/California WaterFix RDEIR/SDEIS		
City of	Comments_com	Comment Package submitted by the City; Antioch Technical		
Antioch	pressed	Comments from Exponent	Antioch-218	В

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Exhibit Number	C-Not a CEQA issue; D- Unsubstantiated)
	City of Antioch			
	Final EIR			
City of	Comments_com			
Antioch	pressed	210 Testimony by City of Antioch to SWRCB	Antioch-231	В
	Exponent			
	Technical	Attachment 5 -		
	Comments and	Written testimony of Chris Ehlers		
Brentwoo	Attachments_2	in the WaterFix Change Petition		
d	7jan2017	Proceedings	Brentwood-001	В
		Attachment 2B -		
	Exponent	Transcript of Dr. Paulsen's direct		
	Technical	testimony and cross-examination		
Brentwoo	Comments and	during the WaterFix Change		
d, City of	Attachments_2	Petition Proceedings. December		
Antioch	7jan2017	15, 2016.	Brentwood-100	В
City of	1-30-17			
Stockton	Stockton			
&	WaterFix FEIR-			
Regional	FEIS Comments		-	
San	w-Exhs A-C	Attachment 1: Curriculum vitae of Susan C. Paulsen, Ph.D., P.E.	Brentwood-101	С
		Attachment 2A -		
		Exponent (2016). Report on the		
		Effects of the Proposed California		
D .	Exponent	WaterFix Project on Water Quality		
Brentwoo	Technical	at the City of Brentwood. Exhibit		
d & City	Comments and	Brentwood-102 of the WaterFix		
0f	Attachments_2	Change Petition Proceedings.	D 1 100	D
Stockton	/jan201/	August 30, 2016.	Brentwood-102	В
INSWA NGWA	bwgwd_1	1 estimony of Eugene Massa	BWGWD-1	В
NSWA	citysac-1.pdf	Written Testimony of James Peifer	CITYSAC-1	R
NSWA	citysac-10.pdf	PowerPoint Overview of Bonny L. Starr Testimony	CITYSAC-10	В
NSWA	citysac-11.pdf	Pre-1914 Appropriative Right (Statement S014834)	CITYSAC-11	C

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
NSWA	citysac-12.pdf	Appropriative Permit No. 992	CITYSAC-12	С
NSWA	citysac-13.pdf	Appropriative Permit No. 11358	CITYSAC-13	С
NSWA	citysac-14.pdf	Appropriative Permit No. 11361	CITYSAC-14	С
NSWA	citysac-15.pdf	Appropriative Permit No. 11359	CITYSAC-15	С
NSWA	citysac-16.pdf	Appropriative Permit No. 11360	CITYSAC-16	С
		Operating Contract dated June 28, 1957 between Bureau of		
NSWA	citysac-17.pdf	Reclamation and the City of Sacramento	CITYSAC-17	B, C
NSWA	citysac-18.pdf	Map of the City of Sacramento's Places of Use	CITYSAC-18	С
NSWA	citysac-2.pdf	Statement of Qualifications of James Peifer	CITYSAC-2	С
		Carollo Report entitled Evaluation of Pump Intakes for		
NSWA	citysac-22.pdf	Drought Conditions, dated January 2016	CITYSAC-22	B, C
		CBEC Memorandum entitled Sacramento River Low Flow		
NSWA	citysac-23 .pdf	Modeling at SRWTP Intake, dated February 12, 2016	CITYSAC-23	B, C
		CBEC Memorandum entitled American River Low Flow		
NSWA	citysac-24.pdf	Modeling at EAFWTP Intake, dated February 15, 2016	CITYSAC-24	B, C
	California			
	WaterFix FEIR-			
	FEIS City of			
	Sacramento			
City of	Comment			
Sacramen	Letter			
to	01262021	American River Watershed Sanitary Survey 2013 Update	CITYSAC-25	B, C
	California			
	WaterFix FEIR-			
	FEIS City of			
	Sacramento			
City of	Comment			
Sacramen	Letter			
to	01262022	Sacramento River Watershed Sanitary Survey 2015 Update	CITYSAC-26	B, C

T				Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D-
Entity	File Name	Document litle	Exhibit Number	Unsubstantiated)
	California			
	WaterFix FEIR-			
	FEIS City of			
	Sacramento			
City of	Comment			
Sacramen	Letter	City of Sacramento, Folsom Reservoir Storage and Raw Water		
to	01262023	Temperature at EAFWTP Chart, February 2016	CITYSAC-27	В
	California			
	WaterFix FEIR-			
	FEIS City of			
	Sacramento			
City of	Comment	City of Sacramento, Major Reservoir Percent Storage and Raw		
Sacramen	Letter	Water		
to	01262024	Temperature at SRWTP Chart, February 2016	CITYSAC-28	В
	California			
	WaterFix FEIR-			
	FEIS City of			
	Sacramento			
City of	Comment			
Sacramen	Letter	Cyanotoxins in the Sacramento River Watershed, October		
to	01262025	2015	CITYSAC-29	В
NSWA	citysac-3.pdf	PowerPoint Overview of James Peifer Testimony	CITYSAC-3	В
	California			
	WaterFix FEIR-			
	FEIS City of			
	Sacramento			
City of	Comment			
Sacramen	Letter	Summary of City of Sacramento 2015-2016 Cyanotoxin		
to	01262026	Monitoring	CITYSAC-30	B

				Categories (A-In EIR; B-In Hearing; C-Not a CEOA issue: D-
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
	California			
	WaterFix FEIR-			
	FEIS City of			
	Sacramento			
City of	Comment			
Sacramen	Letter	World Health Organization, Environmental Health Criteria		
to	01262027	216, Chapter 2	CITYSAC-31	В
	California			
	WaterFix FEIR-			
	FEIS City of			
	Sacramento			
City of	Comment			
Sacramen	Letter			
to	01262028	CDEC Reservoir Storage Volume Data, January 2016	CITYSAC-32	C
		City of Sacramento Comments on the Bay Delta Conservation		
NSWA	citysac-33.pdf	Plan (BDCP) Draft EIR/EIS and the BDCP, dated July 22, 2014	CITYSAC-33	A
		City of Sacramento Comments on the California WaterFix		
		Recirculated Draft		
		Environmental Impact Report and Supplemental Draft		
NSWA	citysac-34.pdf	Environmental Impact Statement, dated October 29, 2015	CITYSAC-34	A
NSWA	citysac-4.pdf	Written Testimony of Brett Ewart	CITYSAC-4	В
NSWA	citysac-5.pdf	Statement of Qualifications of Brett Ewart	CITYSAC-5	С
	California			
	WaterFix FEIR-			
	FEIS City of			
	Sacramento			
City of	Comment			
Sacramen	Letter			
to	01262019	Written Testimony of Pravani Vandeyar	CITYSAC-6	В
NSWA	citysac-7.pdf	Statement of Qualifications of Pravani Vandeyar	CITYSAC-7	C

				Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D-
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
	California			
	WaterFix FEIR-			
	FEIS City of			
	Sacramento			
City of	Comment			
Sacramen	Letter			
to	01262020	Written Testimony of Bonny L. Starr	CITYSAC-8	В
NSWA	citysac-9.pdf	Statement of Qualifications of Bonny L. Starr	CITYSAC-9	C
CCVFCA	2-dfcg_01	Testimony of Gilbert Cosio, Jr.	DFCG-1	В
CCVFCA	11-dfcg_10	Photograph: Grand Island Levee Slope Cracks	DFCG-10	С
CCVFCA	12-dfcg_11	Site visits and levee cracks	DFCG-11	С
CCVFCA	3-dfcg_02	Statement of Qualifications for Gilbert Cosio	DFCG-2	С
CCVFCA	5-dfcg_04	Reclamation District Engineer Experience of Gilbert Cosio, Jr.	DFCG-4	С
	_	USACE report, "Sacramento/San Joaquin Delta, California		
CCVFCA	6-dfcg_05	Special Study: Hydrology", February 1992	DFCG-5	В
		DWR Bulletin 125, "Sacramento Valley Seepage Investigation"		
CCVFCA	7-dfcg_06	(August 1967)	DFCG-6	В
		Color Copy of Plate 10 from DWR Bulletin 125, "Sacramento		
CCVFCA	8-dfcg_07	Valley Seepage Investigation" (August 1967)	DFCG-7	В
CCVFCA	9-dfcg_08	Photograph: Grand Island Levee Cracks Near Toe	DFCG-8	С
CCVFCA	10-dfcg_09	Photograph: Grand Island Levee Crown Cracks	DFCG-9	С
		Contract Between United States and Maxwell Irrigation		
		District (Sacramento River Settlement Contract - District		
NSWA	doi_11.pdf	Form) - Sample, dated March 4, 2015	DOI-11	C
		Long-term Renewal Contract Between the US and Orland-		
		Artois Water District Providing for Project Water Service from		
TCCA	doi_15	the Sacramento River Diversion	DOI-15	C
		14-06-200-4816A LA City of Folsom Hatch & Parent Transfer		
NSWA	doi_23.pdf	of Rights 8-16-1996	D0I-23	C
	-	14-06-200-4816A LA2 City of Folsom SoCalEdison Transfer of		
NSWA	doi_24.pdf	Rights 9-10-1996	D0I-24	C
				Categories (A-In EIR; B-In Hearing; C-Not a CEOA issue: D-
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Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
NSWA	doi_25.pdf	14-06-200-5515A City of Folsom Water Rights 6-22-1971	DOI-25	С
NSWA	doi_26.pdf	14-06-200-6497 City of Sacramento	DOI-26	С
		Oakdale ID SSJID 1988 8-07-20-W0714 Aug.30.1988 New		
NSWA	doi_27.pdf	Melones Ops	DOI-27	С
NSWA &				
TCCA	doi_4.pdf	Written Testimony of Ray Sahlberg	DOI-4	В
NSWA &				
TCCA	doi_5 errata.pdf	PowerPoint Presentation for Ray Sahlberg Testimony	DOI-5-ERRATA	В
NSWA &				
TCCA	doi_7.pdf	Written Testimony of Ron Milligan	DOI-7	В
NSWA	dwr_1 14.pdf	Alternatives Comparison	DWR-114	В
CCVFCA				
& TCCA &				
NSWA &				
NDWA &				
City of				
Antioch				
(figure				
from	dwr_1_correcte		DWR-1-corrected-	
DWR-1)	d_errata	California WaterFix Overview	errata	В
		Delta Habitat Conservation & Conveyance Program -		
NSWA	dwr_212.pdf	Conceptual Engineering Report, Volume 1, dates July 1, 2015	DWR-212	A, B
		Figure 5 Existing Water Diversions at the Proposed Intake		
NDWA	dwr_217.pdf	Sites	DWR-217	A, B
		Table 1-Existing Water Diversions at the Proposed California		
NDWA	dwr_221.pdf	WaterFix Intake Sites	DWR-221	A, B
CCVFCA				
& TCCA &				
NSWA &				
NDWA	dwr_2_errata	Engineering Overview	DWR-2-errata	A, B

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Exhibit Number	C-Not a CEQA issue; D- Unsubstantiated)
CCVFCA				_
& TCCA &				
NSWA &	1			D
NDWA	dwr_3	SWP water Rights	DWK-3	В
		Resources and the North Delta Water Agency for the assurance		
NDWA	dwr 306.pdf	of a dependable water supply of suitable quality	DWR-306	B. C
		California WaterFix Petition for Change of Point of Diversion,		2,0
		Identification of information required under the California		
		code of regulations, title 23 section 794, Petition information		
NSWA	dwr_324.pdf	and map requirements. Date Feb 11, 2016	DWR-324	B, C
	CDWA Contra			
CDWA &	Costa Water	Agreement for mitigation of impacts to contra costa water		
SJ	District DWR	district from construction and operation of bay delta		
Agencies	agmt 3-24-16	conservation plan/ California waterFix	DWK-334	А, В
\mathcal{L}				
NSWA &				
American				
River				
Water				
Agency &				
NDWA	dwr_4_errata	Operations	DWR-4-errata	A, B
CCVFCA				
& TCCA &	1.51			
NSWA	dwr_51	Testimony of Jennifer Pierre	DWR-51	A, B
NSWA	dwr_514.pdf		DWR-514	A, B
CCVFCA	uwi_515.pul		DWK-313	A, D
& TCCA &				
NSWA &				
NDWA	dwr_53	Testimony of Maureen Sergent	DWR-53	В

				Categories (A-In EIR; B-In Hearing;
Entity	Filo Namo	Document Title	Evhibit Numbor	C-Not a CEQA issue; D-
	rne name		EXIIIDIL NUIIIDEI	Unsubstantiated
& TCCA &				
NSWA &				
NDWA	dwr 57	Testimony of John Bednarski	DWR-57	В
CCVFCA				
& TCCA &				
NSWA &				
STCDA &				
NDWA	dwr_5_errata	Modeling	DWR-5-errata	В
	CDWA John			
	Leahigh			
CDWA &	SWRCB DWR			
NSWA	Ex61 5-31-16	TESTIMONY OF JOHN LEAHIGH	DWR-61	В
CCVFCA				
& TCCA &				
NSWA &				
NDWA	dwr_66	Testimony of Parviz Nader-Tehrani	DWR-66	В
& ICCA &				
NSWA &				
Son &				
NDWA	dwr 71	Testimony of Armin Munevar	DWR-71	B
III III	Attachment 4 -		Dint / I	
	Delta Tunnel			
	Study			
	Conceptual			
	Design			
	(00013886xC4	Technical Memorandum No. 2		
EBMUD	FEF)	Delta Tunnel Study Conceptual Design	EBMUB-178	A,B

				Categories (A-In EIR; B-In Hearing;
E	Dile Manua		Fach that Manager	C-Not a CEQA issue; D-
Entity	File Name	Document litle	Exhibit Number	Unsubstantiated)
	Attachment 6 -			
	l estimony of			
	Elleen M.			
	white, P.E.,			
	submitted in			
	the nearing			
	pending before			
	the State water			
	Resources			
	Control Board			
	on the water			
	rights change			
	petition for the			
EDMUD	waterFix			
ERMOD	project.		EBMUD-151	А,В
	Attachment 3 -			
	l estimony of			
	Dr. Benjamin S.			
	Bray, Ph.D.,			
	P.E., Submitted			
	in the			
	nearing			
	pending before			
	Life State water			
	Resources			
	control Board			
	on the water			
	rights			
	for the			
	IOF UIE			
Sac	waterFix		EDMUD 152	
Lounty	project.		ERMOD-127	А,В

				Categories (A-In EIR; B-In Hearing;
				C-Not a CEQA issue; D-
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
	Attachment 5 -			
	"Testimony of			
	Xavier Irias,			
	P.E.," submitted			
	in the hearing			
	pending			
	before the State			
	Water			
	Resources			
	Control Board			
	on the water			
	rights change			
	petition			
	for the			
	WaterFix			
EBMUD	project.		EBMUD-153	A,B
	EBMUD			
	Comments on			
	BDCP-WaterFix			
	FEIR-EIS -			
	Attachments 1-			
	8			
	(00013892xC4	Attachment 8 - "Strategy for Protecting the Mokelumne		_
EBMUD	FEF)	Aqueducts in the Delta."	EBMUD-177	В
			Exhibit Index	
LAND	Salinity Folder	II Exhibit Index Revised 11.28.16	Islands Inc	С
	Physical Injury			
LAND	folder	LAND Exhibit Index	Exhibit Index	С
San Juan	BKS clients			
Water	FEIR FEIS			
District	Comment letter	EXHIBIT FOLSOM-1 TESTIMONY OF MARCUS YASUTAKE, P.E.	Folsom-1	A, B, C

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
San Juan	BKS clients			
Water	FEIR FEIS			
District	Comment letter	FOLSOM RESERVOIR OPERATIONAL ELEVATIONS Graphic	Folsom-18	A, B, C
San Juan	BKS clients			
Water	FEIR FEIS	Increasing Water Supply Pumping Capacity at Folsom Dam		
District	Comment letter	Report January 1996	Folsom-19	A, B, C
San Juan	BKS clients	EXHIBIT FOLSOM-2		
Water	FEIR FEIS	STATEMENT OF QUALIFICATIONS FOR		
District	Comment letter	MARCUS YASUTAKE, P.E.	Folsom-2	С
NSWA	gcid_2.pdf	Testimony of Thaddeus Bettner	GCID-2	В
		Exhibit IFR-1, David M. Meko, Central Valley Droughts Over		
		Last 1,000 Years, 2009 California Extreme Precipitation		
California		Symposium (UC Davis, June 24, 2009). Available at		
Water		http://www.waterboards.ca.gov/waterrights/water_issues/pr		
Research	Listed	ograms/bay_delta/california_waterfix/exhibits/docs/PCFFA&		
& NCRA	references	IGFR/IFR-1_Meko.pdf	IFR-1	A, B
LAND	Salinity Folder	II_1: SOQ for Stan Grant	II-1	С
		II_10: Journal Article: 2015: Long-term Response of		
LAND	Salinity Folder	Grapevines to Salinity: Osmotic Effects and Ion Toxicity	II-10	A, B
LAND	Salinity Folder	II_12: Resume: Michelle Leinfelder-Miles	II-12	С
		II_13: Testimony of Michelle Leinfelder-Miles before the		
LAND	Salinity Folder	California SWRCB	II-13	A, B
		II_14: Slides: Presentation to the SWRCB by Michelle		
		Leinfelder-Miles: The Effects of Water Quality on Soil Salinity		
LAND	Salinity Folder	and Leaching Fractions in the Delta	II-14	A, B
		II_15: FAO Irrigation and Drainage Paper Series: 1994: Water		
LAND	Salinity Folder	Quality for Agriculture, by R.S. Ayers and D.W. Westcot	II-15	В
LAND	Salinity Folder	II_16	II-16	В
LAND	Salinity Folder	II_17	II-17	В
LAND	Salinity Folder	II_18	II-18	В
LAND	Salinity Folder	II_19	II-19	В

Entity	File Nome	Document Title	Fukikit Numbor	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D-
	File Name			
	Salinity Folder	II_20	II-20 II-21	D D
	Salinity Folder		II-21 II-22	D D
	Salinity Folder	II_22	11-22	В
	Salinity Folder		II-23	B
LAND	Salinity Folder	II_24_revised	II-24-revised	В
LAND	Salinity Folder	11_25	11-25	В
LAND	Salinity Folder	II_26	11-26	В
LAND	Salinity Folder	II_27	II-27	В
LAND	Salinity Folder	II_29	II-29	В
		II_2_revised: Testimony of Stan Grant in support of Salinity		
LAND	Salinity Folder	Injury Focus Panel	II-2-revised	В
LAND	Salinity Folder	II_30	II-30	В
LAND	Salinity Folder	II_32	II-32	В
LAND	Salinity Folder	II_33	II-33	В
LAND	Salinity Folder	II_37	II-37	В
LAND	Salinity Folder	II_38	II-38	В
LAND	Salinity Folder	II_39	II-39	В
		II_3_revised: Delta Crops & Salt Water Intrusion with Twin		
LAND	Salinity Folder	Tunnel Operation by Stan Grant (Slides)	II-3-Revised	В
		II_4: SWRCB-Div of Water Rights: WQ Response Plan Pursuant		
LAND	Salinity Folder	to Decision 1641Dated July 28, 2004	II-4	В
LAND	Salinity Folder	II 40_Errata	II-40-errata	В
LAND	Salinity Folder	II 41	II-41	В
LAND	Salinity Folder	II 42	II-42	В
LAND	Salinity Folder	II 43 Revised	II-43-revised	В
		IL 5: University of California, Division of Agricultural Sciences:		
		Soil and Plant Tissue Testing in California: Bulleting 1879.		
LAND	Salinity Folder	Published 1978.	II-5	В
		II 7: Journal Article: 2014: Evaluation of Sensory Thresholds	-	
LAND	Salinity Folder	and Perception of Sodium Chloride in Grape Juice and Wine	II-7	В

Entity	File Name	Document Title	Exhibit Number	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D- Unsubstantiated)
		II 8: Reference Sheet: 2002: Irrigation Water Salinity and Crop		_
LAND	Salinity Folder	Production: UC Davis: Stephen R. Grattan	II-8	В
		II_9: The Science of Grapevines: Anatomy and Physiology by		
LAND	Salinity Folder	Markus Keller: 2010	II-9	В
	Physical Injury	LAND 1 DWR Drought Contingency Planning February 12,		
LAND	folder	2015	LAND-1	С
	Physical Injury			
LAND	folder	LAND 10 Graph: Change in EC at Old River at Bacon Island	LAND-10	А, В
	Physical Injury	LAND 2 North Tunnel Pland and Profile Intake No. 2 to		
LAND	folder	intermediate Forebay	LAND-2	А
	Physical Injury			
LAND	folder	LAND 20 Testimony of Daniel Wilson	LAND-20	A, B, D
	Physical Injury			
LAND	folder	LAND 25 Revised Testimony of Richard Elliot	LAND-25-revised	A, B, D
	Physical Injury			
LAND	folder	LAND 3 Tunnel Infrastructure map	LAND-3	A, B
	Physical Injury			
LAND	folder	LAND 30 Testimony of Russell Van Loven Sels	LAND-30	A, B, D
	Physical Injury			
LAND	folder	LAND 35 Errata Testimony of Josef Tootle, Revised	LAND-35-errata	A, B
	Physical Injury			
LAND	folder	LAND 36 Qualifications of Josef J. Tootle	LAND-36	С
	Physical Injury			
LAND	folder	Land 37 Tunnel alignment over old geologic base map	LAND-37	A, B
	Physical Injury			
LAND	folder	LAND 38 Testimony of Robert Pyke	LAND-38	A, B
	Physical Injury			
LAND	folder	LAND 39 Resume of Robert Pyke	LAND-39	C
	Physical Injury	LAND 4 Local Agencies of the North Delta Coalition Member		
LAND	folder	Districts	LAND-4	C

				Categories (A-In EIR; B-In Hearing;
				C-Not a CEQA issue; D-
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
	Physical Injury	LAND 40 USGS Geological maps of the Sacramento-San Joquin		
LAND	folder	Delta	LAND-40	A, B
	Physical Injury	LAND 41 ?Recent Peat Deposits-Louisiana Coastal Plain, D.		
LAND	folder	Frazier and A. Osanik	LAND-41	А, В
	Physical Injury	LAND 5 Bogal water rights injuries from California WaterFix		
LAND	folder	tunnels	LAND-5	A, B, C, D
	Physical Injury	LAND 57 Map showing private properties needed for Water		
LAND	folder	Tunnel Intakes 2, 3 and 5	LAND-57	А, В
	Physical Injury	LAND 58 Map of Estimated Location/depth ranges of wells		
LAND	folder	near proposed intakes/tunnels (BSK Associates)	LAND-58	A, B
		LAND 59 maps of modified tunnel alignment with hand drawn		
	Physical Injury	location of permitted wells and potential public water system		
LAND	folder	wells	LAND-59	А, В
	Physical Injury	LAND 6 Lange Twins water rights injuries from California		
LAND	folder	WaterFix tunnels	LAND-6	A, B, C, D
	Physical Injury			
LAND	folder	Land 60 Map of Intakes 2 and 3 project features	LAND-60	А, В
	Physical Injury	LAND 65 DWR DHCCP Conceptual Engineering Report Vol.2,		
LAND	folder	Final Draft July 1,2015	LAND-65	А, В
	Physical Injury	LAND 66 DWR Notice for the 2002 Temporary Barriers		
LAND	folder	Installation	LAND-66	D
	Physical Injury			
LAND	folder	LAND 69 DCE CM1 Property Acquisition Management Plan	LAND-69	A, B
	Physical Injury	LAND 7 Elliot/Stillwater Orchards water rights injuries from		
LAND	folder	California WaterFix tunnels	LAND-7	A, B, C, D
	Physical Injury	Land 72 email from James Mizell, DWR, to Osha Meserve RE:		
LAND	folder	Requst for modeling outputs, August 29, 2016	LAND-72	С
		LAND 8 Municipal Water Quality Investigations Annual		
	Physical Injury	meeting, July 30, 2017: Top seven insights from the 2014 Delta		
LAND	folder	Drought Modeling	LAND-8	С

Entity	File Nome	Decument Title	Eukikit Number	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D-
Entity	Physical Inium		Exhibit Number	Unsubstantiated)
LAND	folder	I AND 9 Slide 1. Secremente inflow to Dolta at Freeport (NAA)		AR
LAND	Ioiuei	Tastimony of Donnio Stinnett on Bohalf of Pichyala Irrigation	LAND-9	A, D
		District Butta Water District Sutter Extension Water District		
NSWA	MI F-40 ndf	and Biggs-West Gridley Water District	MI F-40	ΔR
NSWA	MLI -+0.pui	NDWA Sacramento River at Three-Mile Slough 14-day mean	MLI - TO	
NDWA	2-ndwa 001	electrical conductivity chart	NDWA-1	AB
NDWA	11-ndwa 010	Testimony of Tom Slater, Reclamation District 999	NDWA-10	A, B
NDWA	12-ndwa 011	Delta Points of Diversion Exhibit	NDWA-11	A, B
NDWA	13-ndwa 012	Agreement	NDWA-12	C
		NDWA Water Quality Monitoring Locations and NDD Intakes		
NDWA	14-ndwa_013	Exhibit	NDWA-13	С
		NDWA North Fork Mokelumne River near Walnut Grove, WQ		
NDWA	15-ndwa_014	Station B94133 for CY 2014	NDWA-14	С
		NDWA Sacramento River at Rio Vista, WQ Station RVB for CY		
NDWA	16-ndwa_015	2014	NDWA-15	A, B
		NDWA San Joaquin River at San Andreas Landing, WQ Station		
NDWA	17-ndwa_016	SAL for CY 2014	NDWA-16	A, B
		NDWA Sacramento River at Walnut Grove, WQ Station B91650		
NDWA	18-ndwa_017	for CY 2014	NDWA-17	С
		NDWA Steamboat Slough at Sutter Slough, WQ Station B91479		
NDWA	19-ndwa_018	for CY 2014	NDWA-18	С
NIDIALA	20 1 010	NDWA Mokelumne River at Terminous, WQ Station STI for CY	NDULA 10	
NDWA	20-ndwa_019	2014	NDWA-19	C
	2 davia 002	NDWA Sacramento River at Three-Mile Slough 14-day mean	NDMA 2	
NDWA	3-ndwa_002	electrical conductivity chart	NDWA-Z	А, В
	21 ndwa 020	TMS for CV 2014		
NDWA	21-IIuwa_020	NDWA North Fork Mokelumne Diver near Welnut Crove WO	IND WA-20	A, D
	22-ndwa 021	Station R94133 for CV 2015	NDWA-21	C

				Categories (A-In EIR; B-In Hearing;
				C-Not a CEQA issue; D-
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
		NDWA Sacramento River at Rio Vista, WQ Station RVB for CY		
NDWA	23-ndwa_022	2015	NDWA-22	A, B
		NDWA San Joaquin River at San Andreas Landing, WQ Station		
NDWA	24-ndwa_023	SAL for CY 2015	NDWA-23	С
		NDWA Sacramento River at Walnut Grove, WQ Station B91650		
NDWA	25-ndwa_024	for CY 2015	NDWA-24	C
		NDWA Steamboat Slough at Sutter Slough, WQ Station B91479		
NDWA	26-ndwa_025	for CY 2015	NDWA-25	С
		NDWA Mokelumne River at Terminous, WQ Station STI for CY		
NDWA	27-ndwa_026	2015	NDWA-26	С
		NDWA Sacramento River at Three-Mile Slough, WQ Station		
NDWA	28-ndwa_027	TMS for CY 2015	NDWA-27	А, В
NDWA	29-ndwa_028	NDWA Sacramento River at Emmaton for WY 1989	NDWA-28	A, B
NDWA	30-ndwa_029	NDWA Sacramento River at Emmaton for WY 1990	NDWA-29	A, B
NDWA	4-ndwa_003	Testimony of Gary Kienlen, MBK Engineers	NDWA-3	A, B
NDWA	31-ndwa_030	NDWA Sacramento River at Emmaton for WY 1991	NDWA-30	A, B
NDWA	32-ndwa_031	NDWA Sacramento River at Emmaton for WY 1992	NDWA-31	A, B
	33-			
	ndwa_032_Erra	Technical Memorandum dated August 31, 2016 from MBK		
NDWA	ta	Engineers	NDWA-32-errata	A, B
NDWA	34-ndwa_033	county map of Delta area	NDWA-33	С
NDWA	35-ndwa_034	NDWA Reclamations Districts by Division	NDWA-34	С
		NDWA Contract Payments to DWR starting in 1982 through		
NDWA	36-ndwa_039	January of 2016	NDWA-39	С
NDWA	5-ndwa_004	Gary Kienlen CV	NDWA-4	С
	37-			
	ndwa_040_Erra	Informational Video of Sacramento and Freeport Intake and		
NDWA	ta	Delta/Delta Farms	NDWA-40-errata	С
NDWA	38-ndwa_041	GIS map showing NDWA facilities in relation to Alternative 4A	NDWA-41	С
NDWA	39-ndwa_042	photo of NDWA facilities	NDWA-42	С
NDWA	40-ndwa_043	photo of NDWA facilities	NDWA-43	С

				Categories
				(A-In EIR; B-In Hearing;
Fntity	File Name	Document Title	Fxhihit Number	Unsubstantiated)
NDWA	41-ndwa 044	NDWA Sacramento River at Rio Vista EC	NDWA-44	A. B
NDWA	6-ndwa 005	Testimony of Gomathishankar Parvathinathan, MBK Engineers	NDWA-5	A, B
NDWA	7-ndwa 006	Gomathishankar Parvathinathan CV	NDWA-6	C
NDWA	8-ndwa 007	Testimony of Melinda Terry, North Delta Water Agency	NDWA-7	A. B
NDWA	9-ndwa_008	Statement of Qualifications Melinda Terry	NDWA-8	C
NDWA	10-ndwa_009	Testimony of Steve Mello, North Delta Water Agency	NDWA-9	A, B
			Opening Statement	
LAND	Salinity Folder	II Opening Statement	Islands Inc.	A, B, C, D
	Physical Injury		Opening statement	
LAND	folder	LAND Opening Statement: Opening statement of Osha Meserve	Osha	A, B, C, D
	42-			
	ndwa_opening_			
NDWA	statement	Opening Statement, North Delta Water Agency	Opening Statement	A, B, C, D
	23-			
	tcca_part_1b_o			
	pening_stateme	Opening Statement, Tehama-Colusa Canal Authority and Water		
TCCA	nt	Service Contractors Within Its Service Area	Opening Statement	A, B, C, D
	14-			
NCIALA	svwu_opening_			
NSWA	statement	SVWU Opening Statement	Opening Statement	A, B, C, D
		CIC On an in a Chatamant Chata Darand Durana din a On an in a	OPENING CTATEMENT OF	
		statement of protostants county of San Joaquin, San Joaquin	DEATEMENT OF	
		Statement of profestants county of San Joaquin, San Joaquin	PRUIESIANIS COUNTY OF SAN	
LAND	HARs folder	Mokelumne River Water and Power Authority	IOAOIIIN FT AI	ABCD
	IIADS IUIUCI	i monerunne niver water and i ower Authority	JURQUIN, ET AL.	Λ, D, C, D

				Categories (A-In EIR; B-In Hearing;
F	T'' N			C-Not a CEQA issue; D-
Entity	File Name	Document litle	Exhibit Number	Unsubstantiated)
			ORDER DENYING IN	
			PART AND	
			GRANTING IN PART	
C. I.	DVC		PETITIONS FOR	
San Juan	BKS clients		RECONSIDERATION	
Water	FEIR FEIS	Exhibit C STATE WATER RESOURCES CONTROL BOARD	AND ADDRESSING	0
District	Comment letter	ORDER WR 2015-0043	OBJECTIONS	C
	Comments by			
	North Coast			
	Rivers Alliance,			
	et al., on BDCP-			
NODA	WaterFix FEIR		DCCDA 01	DOD
NCRA	01-30-17		PCCFA-81	B, C, D
		Exhibit PCFFA-10, National Oceanic and Atmospheric		
		Administration Technical Report: Global Sea Level Rise		
0.110		Scenarios for the United States National Climate Assessment.		
California		Available at		
Water	T · . 1	http://www.waterboards.ca.gov/waterrights/water_issues/pr		
Research	Listed	ograms/bay_delta/california_waterfix/exhibits/docs/PCFFA&		
& NCRA	references	IGFR/PCFFA_10_NOAA.pdf	PCFFA-10	А, В
		Exhibit PCFFA-20, Close et. al., 2003, A Strategic Review of		
G 11G 1		CalSim II and its Use for Water Planning, Management, and		
California		Uperations in Central California. Available at		
Water	T · . 1	http://www.waterboards.ca.gov/waterrights/water_issues/pr		
Research	Listed	ograms/bay_delta/california_waterfix/exhibits/docs/PCFFA&		D
& NCRA	references	IGFR/PCFFA_20_review.pdf	PCFFA-20	В
		Exhibit PCFFA-62, March 2013, Revised Administrative Draft,		
G 11G 1		Bay Delta Conservation Plan, Appendix 2.C, Climate Change		
California		Implications and Assumptions. Available at		
water	T · · 1	nttp://www.waterboards.ca.gov/waterrights/water_issues/pr		
Research	Listed	ograms/bay_delta/california_waterfix/exhibits/docs/PCFFA&		
& NCRA	references	IGFR/PCFFA_62_BDCP2C.pdf	PCFFA-62	А, В

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
		Exhibit PCFFA-63, Sutterley, T. C., I. Velicogna, E. Rignot, J.		
		Mouginot, T. Flament, M. R. van den Broeke, J. M. van Wessem,		
		and C. H. Reijmer, Mass loss of the Amundsen Sea Embayment		
		of West Antarctica from four independent techniques, 41		
California		Geophys. Res. Lett. 8421–8428. Available at		
Water		http://www.waterboards.ca.gov/waterrights/water_issues/pr		
Research	Listed	ograms/bay_delta/california_waterfix/exhibits/docs/PCFFA&		
& NCRA	references	IGFR/PCFFA_63_Sutt.pdf	PCFFA-63	A, B
		Exhibit PCFFA-64, United States Army Corps of Engineers,		
		table of regionally corrected sea level rise estimates for Port		
California		Chicago. August 16, 2016. Available at		
Water		http://www.waterboards.ca.gov/waterrights/water_issues/pr		
Research	Listed	ograms/bay_delta/california_waterfix/exhibits/docs/PCFFA&		
& NCRA	references	IGFR/PCFFA_64_table.pdf	PCFFA-64	A, B
		Exhibit PCFFA-65, United States Army Corps of Engineers,		
		graph of regionally corrected sea level rise estimates for Port		
California		Chicago. August 16, 2016. Available at		
Water		http://www.waterboards.ca.gov/waterrights/water_issues/pr		
Research	Listed	ograms/bay_delta/california_waterfix/exhibits/docs/PCFFA&		
& NCRA	references	IGFR/PCFFA_65_graph.pdf	PCFFA-65	A, B
		Exhibit PCFFA-66, United States Army Corps of Engineers, Port		
California		Chicago sea level gauge data. August 16, 2016. Available at		
Water		http://www.waterboards.ca.gov/waterrights/water_issues/pr		
Research	Listed	ograms/bay_delta/california_waterfix/exhibits/docs/PCFFA&	 	
& NCRA	references	IGFR/PCFFA_66_guage.pdf	PCFFA-66	А, В

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Exhibit Number	C-Not a CEQA issue; D- Unsubstantiated)
		Exhibit PCFFA-67, J. Hansen, M. Sato, P. Hearty, R. Ruedy, M.		, , , , , , , , , , , , , , , , , , ,
		Kelley, V. Masson-Delmotte, G. Russell, G. Tselioudis, J. Cao, E.		
		Rignot, I. Velicogna, E. Kandiano, K. von Schuckmann, P.		
		Kharecha, A. N. Legrande, M. Bauer, and KW. Lo, Ice melt, sea		
		level rise and superstorms: evidence from paleoclimate data,		
		climate modeling, and modern observations that 2 °C global		
California		warming is highly dangerous. Available at		
Water		http://www.waterboards.ca.gov/waterrights/water_issues/pr		
Research	Listed	ograms/bay_delta/california_waterfix/exhibits/docs/PCFFA&		
& NCRA	references	IGFR/PCFFA_67_Hansen.pdf	PCFFA-67	A, B
		Exhibit PCFFA-68, Gregory Flato et. al., Climate Change 2013		
		The Physical Science Basis, Chapter 9: Evaluation of Climate		
California		Models. Available at		
Water		http://www.waterboards.ca.gov/waterrights/water_issues/pr		
Research	Listed	ograms/bay_delta/california_waterfix/exhibits/docs/PCFFA&		
& NCRA	references	IGFR/PCFFA_69_Cayan.pdf	PCFFA-68	A, B
		Exhibit PCFFA-69, Climate Change Scenarios And Sea Level		
		Rise Estimates for the California 2009 Climate Change		
		Scenarios Assessment, A Paper From the California Climate		
		Change Center. Dan Cayan, Mary Tyree, Mike Dettinger, Hugo		
		Hidalgo, Tapash Das, Ed Maurer, Peter Bromirski, Nicholas		
California		Graham, and Reinhard Flick. Available at		
Water		http://www.waterboards.ca.gov/waterrights/water_issues/pr		
Research	Listed	ograms/bay_delta/california_waterfix/exhibits/docs/PCFFA&		
& NCRA	references	IGFR/PCFFA_69_Cayan.pdf	PCFFA-69	А, В
		Exhibit PCFFA-70, Department of Water Resources,		
		Perspectives and Guidance for Climate Change Analysis.		
California		Available at		
Water		http://www.waterboards.ca.gov/waterrights/water_issues/pr		
Research	Listed	ograms/bay_delta/california_waterfix/exhibits/docs/PCFFA&		
& NCRA	references	IGFR/PCFFA_70_DWRcc.pdf	PCFFA-70	А, В

(A-In F	EIR; B-In Hearing;
Entity File Name Document Title Exhibit Number Unsub	a CEQA issue; D- ostantiated)
Exhibit PCFFA-71, Francis Chung et. al., Using Future Climate	
Projections to Support Water Resources Decision Making in	
California, California Climate Change Center, Final Report, May	
California 2009. Available at	
Water http://www.waterboards.ca.gov/waterrights/water_issues/pr	
Research Listed ograms/bay_delta/california_waterfix/exhibits/docs/PCFFA&	
& NCRA references IGFR/PCFFA_71_Chung.pdf PCFFA-71 A, B	
Exhibit PCFFA-72, Sarah Null and Josh Viers, Water and	
Energy Sector Vulnerability to Climate Warming in the Sierra	
Nevada: Water Year Classification in Non-Stationary Climates,	
California July 31, 2012. Available at	
Water http://www.waterboards.ca.gov/waterrights/water_issues/pr	
Research Listed ograms/bay_delta/california_waterfix/exhibits/docs/PCFFA&	
& NCRA references IGFR/PCFFA_72_Null.pdf PCFFA-72 A, B	
Exhibit PCFFA-73, Abdul Khan and Andrew Schwarz Climate	
Change Characterization and Analysis in California Water	
Resources Planning Studies, Final Report, Department of	
California Water Resources December 2010. Available at	
water nttp://www.waterboards.ca.gov/waterrights/water_issues/pr	
Research Listed ograms/bay_delta/california_waterfix/exhibits/docs/PUFFA&	
& NUKA references IGFR/PUFFA_/3_Khan.pdf PUFFA-/3 A, B	
Exhibit PCFFA-74, David M. Meko, Matthew D. Inerrell,	
Christopher H. Balsan, and Malcolm K Hugnes, Sacramento	
River Flow Reconstructed 10 Ad. 869 From Tree Rings, Journal	
California August 2001 Available at	
Water http://www.waterbeards.ca.gov/waterrights/water_issues/pr	
Research Listed ograms /bay delta /california waterfiy /oyhibits /docs /DCEEA &	
& NCRA references IGER/PCFFA 74 Meko01 ndf	

				Categories (A-In EIR; B-In Hearing;
Entites	Eile Neme	Dommont Title	Euclidit Number	C-Not a CEQA issue; D-
Entity	Flie Name	Document Little	Exhibit Number	Unsubstantiated)
California		Modeling for the DCD / WeterFix Figures 1 21 Available at		
Watar		Modelling for the DDCP / Water Fix, Figures 1-21. Available at		
Water	Listad	agrama / how dolta / apliformia water fiv / avhibita / doga /DCEEA		
& NCDA	references	ICEP/DCEEA 79 DDIg ndf	DCEEA 70	٨R
& NCKA	Telefences	Fyhibit DCEEA 70, Daviou Danel Deport San Joaquin Diver	FUFFA-70	A, D
California		Valloy CalSim II Model Poview 2006 Available at		
Wator		http://www.waterboards.ca.gov/waterrights/water issues/pr		
Research	Listad	agrams / hav delta /california waterfix /avhibits /docs /PCEEA		
& NCRA	references	ICFR/PCFFA 79 PR2006 ndf	PCFFA-79	ΔR
a noith	Tererences	Exhibit PCEFA-8 September 6, 2007 Letter from Mike Healey		П, D
		to John Kirlin Re. Projections of Sea Level Rise for the Delta P		
California		Projections of Sea Level Rise for the Delta Available at		
Water		http://www.waterhoards.ca.gov/waterrights/water_issues/nr		
Research	Listed	ograms/hav delta/california waterfix/exhibits/docs/PCFFA&		
& NCRA	references	IGFR/PCFFA 08 Healey ndf	PCFFA-8	A B
		Exhibit PCFFA-80, PEER REVIEW RESPONSE: A Report by		
		DWR/Reclamation in Reply to the Peer Review of the CalSim-II		
		Model Sponsored by the CALFED Science Program in		
California		December 2003. Available at		
Water		http://www.waterboards.ca.gov/waterrights/water issues/pr		
Research	Listed	ograms/bay_delta/california_waterfix/exhibits/docs/PCFFA&		
& NCRA	references	IGFR/PCFFA_80_PR2004.pdf	PCFFA-80	A, B
California				
Water	DDJ Corrected			
Research	Testimony	Corrected Testimony of Deirdre Des Jardins	PCFFA-81	A, B
		Exhibit PCFFA-9, May 15, 2014 Letter from Delta Independent		
		Science Board to Randy Fiorini Re: Review of the Draft EIR/EIS		
California		for the Bay Delta Conservation Plan. Available at		
Water		http://www.waterboards.ca.gov/waterrights/water_issues/pr		
Research	Listed	ograms/bay_delta/california_waterfix/exhibits/docs/PCFFA&		
& NCRA	references	IGFR/PCFFA_09_ISB.pdf	PCFFA-9	A, B

				Categories (A-In EIR; B-In Hearing;
Entity	Filo Nomo	Document Title	Evhibit Numbor	C-Not a CEQA issue; D-
	riie Naille	Document file		Unsubstantiated)
NSWA	pcwa_20.pdf	lestimony of Einar Maisch	PCWA-20	B
CCVFCA	1-dfcg_protest	Delta Flood Control Group Protest	Protest Petition	B, C, D
NDWA	1-ndwa_protest	Protest-Petition	Protest Petition	B, C, D
	1-			
TCCA	tehama_protest	Protest-Petition	Protest Petition	B, C, D
	1-			
NSWA	svg_protest.pdf	Sacramento Valley Group Protest	Protest Petition	B, C, D
San Juan	BKS clients			
Water	FEIR FEIS	EXHIBIT ROSEVILLE-1e1 TESTIMONY OF RICHARD PLECKER,		
District	Comment letter	P.E.	Roseville-1	В
San Juan	BKS clients			
Water	FEIR FEIS	EXHIBIT ROSEVILLE-2 STATEMENT OF QUALIFICATIONS		
District	Comment letter	FOR RICHARD PLECKER, P.E.	Roseville-1e	С
	http://www.re			
	storethedelta.o			
	rg/wp-			
	content/upload			
	s/2016/08/Ti			
	m-Stroshane-	See also http://www.restorethedelta.org/wp-		
	Testimony-	content/uploads/2016/08/Tim-Stroshane-Testimony-		
PCL, EWC	SIGNED.pdf	SIGNED.pdf	RTD-10-Rev2	В
	Final Tunnels			
	EIR-EIS EWC			
EWC	Letter	From comment letter - footnote	RTD-11-Rev	А
	stcda BDCP			
STCDA	FEIR comments	Testimony of Janet McCleery	SCDA-22	В
	stcda BDCP			
STCDA	FEIR comments	Testimony of Michael Guzzardo	SCDA-24	В
_	stcda BDCP			
STCDA	FEIR comments	Testimony of Frank Morgan	SCDA-25	В

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
	stcda BDCP			
STCDA	FEIR comments	Charts accompanying Burke testimony	SCDA-26	В
	stcda BDCP	STATEMENT OF QUALIFICATIONS		
STCDA	FEIR comments	ERIK RINGELBERG	SCDA-32	С
	stcda BDCP			
STCDA	FEIR comments	Testimony of Erik Ringelberg	SCDA-33	В
	stcda BDCP			
STCDA	FEIR comments	TESTIMONY OF TOM BURKE	SCDA-35	В
	stcda BDCP			
STCDA	FEIR comments	Qualifications of Tom Burke	SCDA-37	<u> </u>
	stcda BDCP			
STCDA	FEIR comments	TESTIMONY OF MICHAEL A. BRODSKY	SCDA-48	В
Con	1-30-17 Sac			
Sac	County	Testimenes of Misheel I. Determony	CCW/A 10	D
County	Lomment Ltr	Testimony of Michael L Peterson	SUWA-19	В
Sac	1-30-17 Sac			
Sat	Commont I tr	Tostimony of Forrost W/ Williams Ir	SCIMA 2	P
County	1-30-17 Sac	Testimony of Forrest w. winnams, jr.	30004-3	D
Sac	County			
County	Comment Ltr	Testimony of Steffen Mehl	SCWA-50	B
Gounty	SDWA 10 D-			
	1641 Excerpts			
SDWA	Response Plans	Revised Water Right Decision 1641	SDWA-10	С
	SDWA 106			
	Mussi			
SDWA	Testimony	Testimony of Rudy Mussi	SDWA-106	В
	SDWA 107			
	Mussi Map of			
SDWA	Ranch	No Title	SDWA-107	C

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Exhibit Number	C-Not a CEQA issue; D- Unsubstantiated)
	SDWA 11			
	Response Plan			
	for Water Level			
	Concerns D-	Response Plan for Water Level Concerns in the South Delta		
SDWA	1641	Under Water Rights Decision 1641	SDWA-11	С
	SDWA 111			
	Salmon			
SDWA	Testimony	Testimony of William "Chip" Salmon	SDWA-111	В
	SDWA 112 Map			
	of Salmon			
SDWA	Ranch	No Title	SDWA-112	С
	SDWA 113			
	Salmon DWR			
	License and			
	Point of			
SDWA	Diversion	Application 14022, Permit 8820, License 4481	SDWA-113	С
	SDWA 114			
	Laboratory			
	Analysis Report			_
SDWA	Evaluation	Laboratory Analysis report Evaluation	SDWA-114	В
	SDWA 115			
	South Delta			
	Water Quality			
	2001			
	Temporary			
CDIAIA	Barriers			D
SDWA	Project	Subject: South Delta Water Quality	SDWA-115	В

				Categories (A-In EIR; B-In Hearing;
Entity	File Neme	Dogument Title	Euclidit Number	C-Not a CEQA issue; D-
Entity	SDWA 116	Document litle	Exhibit Number	Unsubstantiated)
	SDWA 110			
	Conductivity in			
	Millis for			
	Doughty Cut			
	above Grant	Flectrical Conductivity in Millis for Doughty Cut above Grant		
SDWA	Line Canal	Line Canal	SDWA-116	В
02	SDWA 117			
	UPhotos of			
	Damaged			
	Vineyard and			
	Walnuts due to			
SDWA	high salinity	No Title	SDWA-117	С
	SDWA 12 E-			
	mails re water			
SDWA	levels	Multiple Emails regarding water levels	SDWA-12	В
	SDWA 121			
	Bacchetti			
SDWA	Testimony	Testimony of Mark Bacchetti	SDWA-121	В
	SDWA 122			
	DWR License			
	for Diversion			
	and Order for			
CDIAIA	Point of	Linner for Diversion of Her of Mater	CD144 122	C
SDWA	Diversion	License for Diversion and Use of water	5DWA-122	L
	SDWA 123 Map			
SDWA	Panch	No Titlo	SDWA 122	C
JUWA		IIS Bureau of Reclamation and California Department of	5DWA-125	
	Water Quality	Water Resources Water Quality Response Plan for use of Joint		
SDWA	Response Plan	Points of Diversion under Water Right Decision 1641	SDWA-13	С

				Categories (A-In EIR; B-In Hearing;
Entity	File Neme	Dommont Title	Euclidit Number	C-Not a CEQA issue; D-
Entity	File Name	Document little	Exhibit Number	Unsubstantiated)
	SDWA 133 Dr.			
CDIALA	Statement of		CD14/4 100	G
SDWA	Qualifications	Statement of Qualifications Dr Jeffrey A. Michael	SDWA-133	L
	sdwa_134_r Dr.			
	Jeffrey Michael			
	Written			
CDIALA	Summary of		CD1444 124	D
SDWA	Testimony	Dr. Jeffrey Michael's Written Summary of Testimony	SDWA-134	В
	sdwa_135_r Dr.			
ODIALA	Jeffrey Michael	California WaterFix South Delta Water Agency Parties Case-in-		
SDWA	Powerpoint	Chief Part 1b	SDWA-135	А, В
	SDWA_136			
	Draft BDCP			
	Statewide			
CDIALA	Economic	Draft Bay Delta Conservation Plan Statewide Economic Impact	CD1444 126	
SDWA	Impact Report	Report	SDWA-136	А, В
	SDWA_137			
	Economic			
	Sustainability			
	Plan Sacto-S. J.			
CDIALA	River Delta	Economic Sustainability Plan for the Sacramento-San Joaquin	CD1444 125	0
SDWA	2012	river Delta	SDWA-137	L
	SDWA_138			
	Independent			
	Panel Review			
	Economic			
	Sustainability			
	Plan Sacto-S. J.	Independent Panel Review of the Economic Sustainability Plan		
SDWA	Delta 2011	for the Sacramento-San Joaquin Delta, December 2, 2011	SDWA-138	C

				Categories (A-In EIR; B-In Hearing; C-Not a CEOA issue: D-
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
	SDWA_139			
	2015 Leaching	Leaching Fractions Achieved in South Delta Soils under Alfalfa		
SDWA	Fractions	Culture, 2014 Year-End Report	SDWA-139	A, B
	SDWA 14 7-1-			
	2005 SWRCB			
	Letter			
	Approving			
	Water Quality			
CDIAIA	Response Plan	April 25, 2005 Water Quality Response Plan Pursuant to	CDIMA 14	
SDWA	D-1641	Decision 1641	SDWA-14	L
	SDWA_140			
	Leaching			
	Achieved in			
	Achieved III South Dolta			
	Sould Delta			
	Culture Project	Leaching Fractions Achieved in South Delta Soils under Alfalfa		
SDWA	Report Undate	Culture Project Report Indate August 2016	SDWA-140	AB
	SDWA 141			
	Chapter 7 Delta			
	Protection			
	Commission's			
	Economic			
	Sustainability	Economic Sustainability Plan for the Sacramento San-Joaquin		
SDWA	Plan	Delta, Chapter 7: Agriculture	SDWA-141	С
	SDWA_142			
	Michael letter			
	to Cowin re			
	DRMS Dec.			
SDWA	2011	No Title	SDWA-142	C

				Categories (A-In EIR; B-In Hearing;
Fntity	File Name	Document Title	Fyhihit Number	C-Not a CEQA issue; D-
Lincity	SDWA 143			Olisubstantiateu)
	Risks and			
	Options to			
	Reduce Risks to			
	Fishery and			
	Water Supply	Risks and Options to Reduce Risk to Fishery and Water Supply		
SDWA	Uses	Uses of the Sacramento/San Joaquin Delta	SDWA-143	С
	SDWA 15 Order			
	WR 2006-0006	State of California State Water Resources Control Board Order		_
SDWA	portions	WR 2006 - 0006	SDWA-15	С
	SDWA_150			
CDIAIA	Nomellini			
SDWA	Qualifications	Statement of Qualifications of Dante John Nomellini, Sr.	SDWA-150	C
	SDWA_151			
	Final Dan Sr Tostimony for	Tactimony of Danta John Nomellini Sr. in Support of the South		
	California	Delta Water Agency Parties' Case in chief for Part 18 of the		
SDWA	WaterFix	California WaterFix Change Petition	SDWA-151	BC
5D WII	sdwa 152 r		00 111 101	
	Nomellini			
	Testimony	California WaterFix South Delta Water Agency Parties Case-in-		
SDWA	Revised	chief Part 1b	SDWA-152	A, B, C
	SDWA_153 1-			
	27-2009 Letter			
	to Nomellini			
	from			
	Scarborough			
	BDCP Steering			
SDWA	Committee	No Title	SDWA-153	С
	SDWA 16 Order			
CDIALA	WR 2010-0002	State of California State Water Resources Control Board Order		
SDWA	portions	WK 2010-0002	SDWA-16	L L

				Categories (A-In EIR; B-In Hearing;
				C-Not a CEQA issue; D-
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
	SDWA_168			
	California			
	Water			
	Resources			
	Development			
SDWA	Bond Act	The California Water Resources Development Bond Act	SDWA-168	С
		Bulletin No. 76, Report to the California State Legislature on		
	SDWA_169	the Delta Water Facilities as an integral feature of the State		
SDWA	Bulletin No. 76	Water Resources Development System	SDWA-169	С
	SDWA_170			
	Weber			
	Foundation			
SDWA	Studies	Estimated Seasonal Natural Runoff	SDWA-170	С
	SDWA_171			
	Actions to			
	Conserve Cold			
	Water Pool in			
	Shasta			
	Reservoir for			
	Fishery	Actions to Conserve Cold Water Pool in Shasta Reservoir for		
SDWA	Resources	Fishery Resources	SDWA-171	А, В, С
	SDWA_172			
	Tracy Pumping			
SDWA	Plant Data	No Title	SDWA-172	С
	SDWA_173			
	Hydroclimate			
	Background on	California's Most Significant Droughts: Comparing Historical		
SDWA &	Drought in	and Recent Conditions, Chapter 2: Hydroclimate Background		
CDWA	California	on Drought in California	SDWA-173	C

				Categories (A-In EIR; B-In Hearing;
Faction.	Eile Neme		Fash ih it Nameh an	C-Not a CEQA issue; D-
Entity	Flie Name	Document litle	Exhibit Number	Unsubstantiated)
	SDWA_174			
	Average and			
	Dry Poriod			
	Deliveries SWP			
	Table A Water			
	& Percent			
	Maximum SWP			
	Table A	Estimated Average and Dry-Period Deliveries SWP Table A		
SDWA	Amount	Water & Percent Maximum SWP Table A Amount	SDWA-174	С
	SDWA 175			
	Public Law 86-			
	488 June 3,			
SDWA	1960	Public Law 86-488	SDWA-175	C
	SDWA_176			
	Title I			
	Coordinated			
	Operations			
	Project			
	Operation			
SDWA	Policy	Title I Coordinated Operations Project Operation Policy	SDWA-176	С
	SDWA_177			
	Public Law			
051114	108-361 Oct			
SDWA	25,2004	Public Law 108-361	SDWA-177	C
	SDWA 18 Delta			
CDIALA	Water Quality		CDUUA 10	
SDWA	Conditions	Delta Water Quality Conditions	SDWA-18	А, В

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Exhibit Number	C-Not a CEQA issue; D- Unsubstantiated)
	SDWA_183			
	1976-77			
	Estimated Crop			
	Et Values Delta	Table A-5, 1976-77 Estimated Crop Et Values, Delta Service		
SDWA	Services Area	Area (in inches)	SDWA-183	В
	SDWA_184			
	North and			
	South Delta			
	Exports for			
	Alternative 4A			
	Long-Term	North and South Delta Exports for Alternative 4A Long-Term		
SDWA	Average	Average	SDWA-184	А, В
	SDWA_185			
	Historical			
	Salinity			
	Modeled and			
CDIAIA	Observed at			0
SDWA	Jersey Point	Chapter 3: Highlights of Past Droughts	SDWA-185	L
	SDWA_186			
	Historical			
	Salinity			
	Incursion Segremente S I	Historical Calinity Induscion, Conservation Con Languin Dalta		
CDWA	Dalta Eab 1062	Fistorical Salinity Incursion, Sacramento-San Joaquin Delta,	CDWA 106	D C
SDWA		rediuary 1902	SDWA-180	D, L
	Soction 12202			
SDWA	12203. 12204	No Title	SDWA-187	С

				Categories (A-In EIR: B-In Hearing:
				C-Not a CEQA issue; D-
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
	SDWA_188			
	Active Faults			
	and Historical			
	Seismicity of			
	Bay and Delta	Active Faults and Historical Seismicity of Bay and Delta		
SDWA	Region	Region, 1800-2010	SDWA-188	С
	SDWA_189			
SDWA	Photo of Dam	No Title	SDWA-189	С
	SDWA_190			
SDWA	Faults graph	No Title	SDWA-190	С
	SDWA_191 6.5			
	Magnitude			
SDWA	Earthquake	6.5 Magnitude Earthquake, 20- Island Failure Scenario	SDWA-191	С
	SDWA_192			
	Extracts of			
	Usace May 23,			
	2007			
SDWA	Comments	Extracts of USACE May 23, 2007 Comments	SDWA-192	A, B
	SDWA_193 Sea			
SDWA	Level Rise	No Title	SDWA-193	A, B
	SDWA_194 Sea			
SDWA	Level Trends	Sea Level Trends - State Selection	SDWA-194	A, B
	SDWA_195			
SDWA	Мар	No Title	SDWA-195	A, B
	SDWA_196			
	Why Climate			
	Change in			
SDWA	CVFPP	Why Climate Change in CVFPP	SDWA-196	A, B

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Exhibit Number	C-Not a CEQA issue; D- Unsubstantiated)
	SDWA_197			
	Comparison of			
	Total			
	Replacement			
	Costs of Delta	Table 7-8: Comparison of Total Replacement Costs of Delta		
SDWA	Infrastructure	Infrastructure - Current and 2050	SDWA-197	С
	SDWA_198			
	Period Average	Table EC-8A. Period Average Change in EC Levels for		
05444	Change in EC	Alternative 4A-H3 ELT Relative to Existing Conditions and the		4.5
SDWA	Levels	No Action Alternative ELT.	SDWA-198	А, В
	SDWA_199 Unit			
	Consumptive			
	Use of Water in			
	Sacramento-			
SDWA	San Joaquin Delta	Sacramento-San Ioaquin Water Supervisor's Report 1931	SDWA-199	C
	SDWA 2			
	WSIHIST DWR			
	CA CDEC Year			
SDWA	Types	WSIHIST (01/19/16 1412)	SDWA-2	С
	SDWA_200			
	Title 34 Public			
	Law 102-575			
SDWA	COMPLETE	Complete Listing of Public Law 102-575	SDWA-200	С
	SDWA_201			
	public_law_108			
	-361			
SDWA	COMPLETE	Public Law 108-361 - OCT. 25, 2004	SDWA-201	C

				Categories (A-In EIR; B-In Hearing;
				C-Not a CEQA issue; D-
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
	SDWA_202			
	USBR Program			
	to Meet	Program to Meet Standards Response to CALFED Bay-Delta		
	Standards	Authorization Act (Public Law 108-361) CALFED Bay-Delta		
SDWA	COMPLETE	Program, California	SDWA-202	С
	SDWA_203			
	Final Revised			
	Water Quality			
	Response Plan			
	D 1641			
SDWA	COMPLETE	Final Revised Water Quality Response Plan	SDWA-203	С
	SDWA_204 wro			
	2006_0006			
SDWA	COMPLETE	Order WR 2006 - 0006	SDWA-204	С
	SDWA_205			
	Order			
	2010_0002			
	amending			
	2006-0006			
SDWA	COMPLETE	Order WR 2006 - 0006	SDWA-205	С
	SDWA_206			
	CVRWQCB			
	Salinity in			
	Central Valley			
	May 2006			
SDWA	COMPLETE	Salinity in the Central Valley, An Overview	SDWA-206	A, B
	SDWA 24			
	WQCP SFBay			
	Sacto SJ Delta	Water Quality Control Plan for the San Francisco		
SDWA	Estuary	Bay/Sacramento-San Joaquin Delta Estuary	SDWA-24	C

				Categories (A-In EIR; B-In Hearing;
				C-Not a CEQA issue; D-
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
	SDWA 27 WQ			
	and WL			
001114	Forecast July			
SDWA	12 - August 1	Subject: WQ & WL forecast for July 12-August 1	SDWA-27	А, В
	SDWA 28 CDEC			
	Old River and	Old River Near Tracy (Old) and San Joaquin R at Brandt Bridge		
SDWA	S. J. River	(BDT) Electrical Conductivity	SDWA-28	А, В
	SDWA_3			
	Biological			
	Assessment for			
	the CA			
SDWA	WaterFix	Biological Assessment for the California WaterFix	SDWA-3	А, В
	SDWA 31			
	CVRWQCB			
	Salinity in the			
	Central Valley			
SDWA	May 2006	Salinity in the Central Valley, An Overview	SDWA-31	A, B
	SDWA 35 South			
	Delta Water			
	Quality July			
SDWA	2016	Delta Water Quality Conditions	SDWA-35	A, B
	SDWA_5 Water			
	Codes 12202 -			
SDWA	12205	Water Codes 12202 - 12205	SDWA-5	C
	SDWA_6 CVPIA			
	Title 34 of			
	Public Law			
SDWA	102-575	Title 34 (of Public Law 102-575)	SDWA-6	С
	SDWA_7 Final			
	Restoration	Final Restoration Plan for the Anadromous Fish Restoration		
SDWA	Plan Excerpts	Program	SDWA-7	A

				Categories (A-In EIR; B-In Hearing;
Entity	File Nome	Dogument Title	Exhibit Numbor	C-Not a CEQA issue; D-
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
	Suwa_76_errata	Thomas K Durka's Writton Summary of Tastimony In Support		
	Tom Burke	of the South Dolta Water Agongy Darting' Case in chief for Dart		
SDWA	Revised	1B of the California Water Fix Change Detition	SDWA-76	AB
JUWA	sdwa 77 orrata		3DWA-70	А, D
	Suwa_//_errata	California WaterFix South Delta Water Agency Parties Case-in-		
SDWA	PowerPoint	Chief Part 1h	SDWA-77	AB
5D WH	sdwa 78 errata		50 111 11	
	Burke	Technical Report - Evaluation of Impacts from the California		
SDWA	Technical Reort	WaterFix on The Central and South Delta	SDWA-78	A B
	sdwa 79 EC			
	Timeseries			
SDWA	Plots	Exhibit 2 - Time Series Plots	SDWA-79	A, B
	SDWA 8 Public			
SDWA	Law 108-361	Public Law 108-361-0CT. 25, 2014 118 STST. 1681	SDWA-8	C
	sdwa_80 Daily			
SDWA	EC Plots All	Daily EC Plots SDN3-4	SDWA-80	A, B
	sdwa_81 Daily			
	Exceedance Bar			
SDWA	Charts	No Title	SDWA-81	A, B
	sdwa_82 DSM2			
	Model Output			
SDWA	Table 1	DSM2 Model Output	SDWA-82	A, B
	sdwa_83 DSM2			
	Model Output			
SDWA	Table 2	DSM2 Model Output	SDWA-83	A, B
	SDWA 9			
	Program to			
	Meet Standards	Program to Meet Standards Response to CALFED Bay-Delta		
	Response to	Authorization Act (Public Law 108-361) CALFED Bay-Delta		
SDWA	CALFED	Program, California	SDWA-9	C

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Exhibit Number	C-Not a CEQA issue; D- Unsubstantiated)
Lincity	SDWA_91			
	Prichard			
SDWA	Resume	Terry L. Prichard	SDWA-91	С
	Prichard			
	Updated			
SDWA	Testimony	No Title	SDWA-92	A, B
	From Website,			
Snug	included in			
Harbor	letter	SHR-10	SHR-10	В
	From Website,			
Snug	included in			D
Harbor	letter	SHR-101	SHK-101	В
Course	From Website,			
Snug	Included in		CUD 102	D
naibui	From Wobsito	5HK-102	3HK-102	D
Spug	included in			
Harbor	letter	SHR-103	SHR-103	R
	From Website		5111(105	
Snug	included in			
Harbor	letter	SHR-104	SHR-104	В
	From Website.			
Snug	included in			
Harbor	letter	SHR-105	SHR-105	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-106	SHR-106	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-107	SHR-107	В

				Categories (A-In EIR; B-In Hearing;
Fntity	File Name	Document Title	Fyhihit Number	C-Not a CEQA issue; D-
Lifercy	From Website		Lambit Number	onsubstantiateuj
Snug	included in			
Harbor	letter	SHR-108	SHR-108	В
	From Website.			
Snug	included in			
Harbor	letter	SHR-109	SHR-109	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-11	SHR-11	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-110	SHR-110	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-13	SHR-13	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-16	SHR-16	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-17	SHR-17	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-18	SHR-18	В
	From Website,			
Snug	included in			_
Harbor	letter	SHR-2 video	SHR-2 v	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-20	SHR-20	B

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				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Exhibit Number	C-Not a CEQA issue; D- Unsubstantiated)
	From Website,			
Snug	included in			
Harbor	letter	SHR-210	SHR-210	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-211	SHR-211	В
	From Website,			
Snug	included in	CUD 212	0110 212	D
Harbor	letter	SHR-212	SHK-212	В
Consta	From website,			
Shug	lottor	CHD 212a	СHD 2125	P
	From Wohsito	511K-212a	511K-212d	D
Snug	included in			
Harbor	letter	SHR-213	SHR-213	В
	From Website.			
Snug	included in			
Harbor	letter	SHR-214	SHR-214	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-215	SHR-215	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-216	SHR-216	В
	From Website,			
Snug	included in			_
Harbor	letter	SHR-217	SHR-217	В
	From Website,			
Snug	included in	CUD 240	GUD 210	D.
Harbor	letter	SHK-218	5HR-218	В
				Categories (A-In EIR; B-In Hearing;
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Fntity	File Name	Document Title	Fyhihit Number	C-Not a CEQA issue; D-
Lifercy	From Website		Lambit Number	onsubstantiateuj
Snug	included in			
Harbor	letter	SHR-22	SHR-22	В
	From Website.			
Snug	included in			
Harbor	letter	SHR-220	SHR-220	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-221	SHR-221	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-222	SHR-222	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-223	SHR-223	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-23	SHR-23	В
	From Website,			
Snug	included in			D
Harbor	letter	SHR-23D	SHR-23D	В
Consta	From Website,			
Jug	lottor	SUD 24	CUD 24	D
пагрог	From Wohsito	5nR-24	ЗПК-24	D
Spug	included in			
Harbor	lattor	SHR-25	SHR-25	R
	From Wahsita		5111-25	
Snug	included in			
Harbor	letter	SHR-250	SHR-250	В

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Exhibit Number	C-Not a CEQA issue; D-
Linercy	From Website			onsubstantiateuj
Snug	included in			
Harbor	letter	SHR-251	SHR-251	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-252	SHR-252	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-253	SHR-253	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-254	SHR-254	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-255	SHR-255	В
6	From Website,			
Snug	included in			П
Harbor	Frank Mahaita	5HR-256	SHK-250	В
Snug	From website,			
Harbor	lattor	SHD-258	SHR-258	R
	From Website	5111-230	5111-230	D
Snug	included in			
Harbor	letter	SHR-259	SHR-259	В
	From Website			
Snug	included in			
Harbor	letter	SHR-26	SHR-26	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-27	SHR-27	В

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Exhibit Number	C-Not a CEQA issue; D- Unsubstantiated)
	From Website,			
Snug	included in			
Harbor	letter	SHR-28	SHR-28	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-29	SHR-29	В
_	From Website,			
Snug	included in			
Harbor	letter	SHR-29h	SHR-29h	В
	From Website,			
Snug	included in	CUD 21	CUD 21	D
Harbor	letter	5HK-31	SHR-31	В
Cour	From website,			
Harbor	lottor	CHD 210	СНД 210	P
	From Website	5118-517	5111-519	D
Snug	included in			
Harbor	letter	SHR-31f	SHR-31f	В
	From Website			
Snug	included in			
Harbor	letter	SHR-32	SHR-32	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-33	SHR-33	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-34	SHR-34	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-34f	SHR-34f	В

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Fyhihit Numbor	C-Not a CEQA issue; D-
Entity	From Website			Ulisubstalltiateuj
Snug	included in			
Harbor	letter	SHR-35	SHR-35	R
1101 001	From Website		5111(55	
Snug	included in			
Harbor	letter	SHR-350	SHR-350	В
	From Website.			
Snug	included in			
Harbor	letter	SHR-351	SHR-351	В
STCDA,				
snug	stcda BDCP			
harbor	FEIR comments	Dry Year Average (Sac Valley 40-30-30 Index) Current Climate	SHR-352	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-353	SHR-353	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-35f	SHR-35f	В
_	From Website,			
Snug	included in			_
Harbor	letter	SHR-381	SHR-381	В
	From Website,			
Snug	included in			D
Harbor	letter	SHR-385	SHR-385	В
C	From Website,			
Snug	Included in			П
narbor	From Woheits	<u>วทห-วอบ</u>	<u>ЭПК-300</u>	D
Cour	rrom website,			
Jug	lottor	сир 200	CUD 200	D
1101 001	iellei	5111-300	3111-300	ם

				Categories (A-In EIR; B-In Hearing;
Fntity	File Name	Document Title	Fyhihit Number	C-Not a CEQA issue; D-
Linery	From Website		Lambit Number	onsubstantiaccuj
Snug	included in			
Harbor	letter	SHR-389	SHR-389	В
	From Website.			
Snug	included in			
Harbor	letter	SHR-390e	SHR-390e	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-391	SHR-391	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-392	SHR-392	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-393	SHR-393	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-394	SHR-394	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-395	SHR-395	В
C	From Website,			
Snug	Included in			П
Harbor	letter	5HK-396	SHK-396	В
Consta	From Website,			
Harbor	lottor	СНД 207	СНР 207	R
	From Wobsite	אר-סאו	אר-פאר)	D
Spug	included in			
Harbor	lottor	CHD 200	СПД 200	R
1101 001	iellei	5111-520	JIIV-320	ע

				Categories (A-In EIR; B-In Hearing;
Fntity	File Name	Document Title	Fyhihit Number	C-Not a CEQA issue; D-
Lifercy	From Website		Lambit Number	onsubstantiateuj
Snug	included in			
Harbor	letter	SHR-39e	SHR-39e	В
	From Website.			
Snug	included in			
Harbor	letter	SHR-39wf	SHR-39wf	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-39wf2	SHR-39wf2	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-40	SHR-40	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-400	SHR-400	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-402	SHR-402	В
	From Website,			
Snug	included in		GUD 400	
Harbor	letter	SHR-403	SHR-403	В
C	From Website,			
Snug	Included in			П
Harbor	letter	5HK-404	SHK-404	В
Course	From Website,			
Shug	Included In			D
	Iellei	<u>่ วทุง-40ว</u>	SHK-405	D
Spug	included in			
Harbor	lottor	SHD 406	SHD 106	R
1101 001	iellei		5111-400	ע

				Categories (A-In EIR; B-In Hearing;
Fntity	File Name	Document Title	Fyhihit Number	C-Not a CEQA issue; D-
Liftity	From Website			Ulisubstatitiateuj
Snug	included in			
Harbor	letter	SHR-40f	SHR-40f	В
	From Website.			2
Snug	included in			
Harbor	letter	SHR-41	SHR-41	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-42	SHR-42	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-43	SHR-43	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-5	SHR-5	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-50	SHR-50	В
Course	From Website,			
Snug	Included in		SUD FOO	D
Harbor	From Wobsito	500	SПК-300	D
Snug	included in			
Harbor	letter	SHR-501	SHR-501	B
	From Website		5111 501	D
Snug	included in			
Harbor	letter	SHR-6	SHR-6	В
	From Website.		-	
Snug	included in			
Harbor	letter	SHR-6-1	SHR-6-1	В

				Categories (A-In EIR; B-In Hearing;
Fntity	File Name	Document Title	Fyhihit Number	C-Not a CEQA issue; D-
Littly	From Website			Ulisubstatitiateuj
Snug	included in			
Harbor	letter	SHR-6-2	SHR-6-2	В
	From Website.			2
Snug	included in			
Harbor	letter	SHR-63	SHR-63	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-6-3	SHR-6-3	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-64	SHR-64	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-6-4	SHR-6-4	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-65	SHR-65	В
C	From Website,			
Snug	Included in			σ
Harbor	From Wohaita	5пк-о-5	SHK-0-5	В
Spug	included in			
Harbor	lottor	SHR-66	SHR-66	R
	From Website		5111-00	
Snug	included in			
Harbor	letter	SHR-6-6	SHR-6-6	В
	From Website.			-
Snug	included in			
Harbor	letter	SHR-67	SHR-67	В

				Categories (A-In EIR; B-In Hearing;
Fntity	File Name	Document Title	Fyhihit Number	C-Not a CEQA issue; D-
Lifercy	From Website		Lambit Number	onsubstantiateuj
Snug	included in			
Harbor	letter	SHR-6-7	SHR-6-7	В
	From Website.			
Snug	included in			
Harbor	letter	SHR-67b	SHR-67b	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-68	SHR-68	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-69	SHR-69	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-6f	SHR-6f	В
	From Website,			
Snug	included in			D
Harbor	letter	SHR-7	SHR-/	В
Consta	From Website,			
Harbor	lottor	CHD 75	СНД 75	P
	From Website	5111-75	5111-75	D
Snug	included in			
Harbor	letter	SHR-76	SHR-76	В
	From Website.			
Snug	included in			
Harbor	letter	SHR-77	SHR-77	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-78	SHR-78	В

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Evhibit Numbor	C-Not a CEQA issue; D-
Entity	From Website			Olisubstalltiateuj
Snug	included in			
Harbor	letter	SHR-79	SHR-79	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-80	SHR-80	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-81	SHR-81	В
	From Website,			
Snug	included in			D
Harbor	letter	5HK-82	SHR-82	В
Snug	From website,			
Harbor	lottor	SHR-83	SHR-83	R
	From Website		5111-05	
Snug	included in			
Harbor	letter	SHR-84	SHR-84	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-9	SHR-9	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-9 page 5	SHR-9	В
	From Website,			
Snug	included in			
Harbor	letter	SHR-9b	SHR-9b	B
LAND	HABs folder	SJC 001 Statement of Qualifications Linda Turkatte	SJC-001	C
LAND &				
SJ	UADa faldar	SJU UUZ EFRATA WRITTEN TESTIMONY OF LINDA TURKATTE-	SIC 002	D
Agencies	HADS IOIGER	KEVIJED SIC 002 Statement of Qualifications Eril Dingolberg	SIC 002	D
LAND	nads ioluer	SIG OUS Statement of Quantications Erik Kingelberg	3JU-003	L L

				Categories (A-In EIR; B-In Hearing;
				C-Not a CEQA issue; D-
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
LAND & SJ				
Agencies	HABs folder	SJC 004 Testimony of Erik Ringelberg	SJC-004	В
		SJC 016 California Water Quality Monitoring Council:		
		California Cyanobacteria and Harmful Algal Bloom (CCHAB)		
LAND	HABs folder	Network Announcement (8/29/2016)	SJC-016	В
		SJC 017 State Water Rescources Control Board: Surface		
		WaterAmbient Monitoring Program 2 page info sheet		
LAND	HABs folder	(8/29/2016)	SJC-017	В
		SJC 018 four page info sheet on Blue-Green Algae Blooms		
LAND	HABs folder	(udated 9/18/2013	SJC-018	В
		SJC 019 Email from Christine Joab, Central Valley Water Board		
		to EH-Directors RE: Cyanobacteria bloom in the San Joaquin		_
LAND	HABs folder	River, 6/6/2016	SJC-019	В
		SJC 020 Email from Jeff Carruesco[EH] San Joaquin County to		
		Christinge Joab RE: Cyanobacteria in San Joaquin County,		_
LAND	HABs folder	6/6/2016 (In response to C Joab email noted in SJC 019)	SJC-020	В
		SJC 021 Email from Christine Joab to Jeff Carruesco [EH] RE:		
		Cyanobacteria in San Joaquin County 6/6/2016 (responding to		
LAND	HABs folder	J Carruesco email as noted in SJC 020)	SJC-021	В
		SJC 022 Email from Christine Joab to Lisa Medina [EH] RE:		
LAND	HABs folder	Cyanobacteria Caution Sign 6/7/2016	SJC-022	В
		SJC 023 Email from Christing Joab to Lisa Medina [EH] RE:		_
LAND	HABs folder	Cyanobacteria Caution Sign 6/7/2016	SJC-023	В
		SJC 024 Email from Christine Joab to Lisa Medina [EH] RE:		
		Environmental Health Department and Public Health		
LAND	HABs folder	Department News Release, June 2016, 6/8/2016	SJC-024	В
		SJC 025 Email from Christine Joab to Lisa Medina [EH] RE:		_
LAND	HABs folder	Information on dog deaths 6/8/2016	SJC-025	В
		SJC 026 Email from Jeff Carruesco [EH] to Christine Joab RE:		
		Update on cyanobacteria conditions in Stockton Deep Water		
LAND	HABs folder	Ship Channel 6/17/2016	SJC-026	В

Entity	File Name	Document Title	Exhibit Number	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D- Unsubstantiated)
		SJC 027 Email from Christine Joab to Jeff Carruesco [EH] RE:		
		CDC launches reporting system for harmful algal blooms and		
LAND	HABs folder	associated illnesses 6/22/2016	SJC-027	В
		SJC 028 Email from Christine Joab to Lisa Medina [EH] RE:		
LAND	HABs folder	Smith Canal and cyanobacteria monitoring	SJC-028	В
		SJC 029 Email from Lisa Medina [EH] to Christinge Joab RE:		
		Update on cyanobacteia conditions in Stockton Deep Water		
LAND	HABs folder	Ship Channel 7/8/2016	SJC-029	В
		SJC 030 Email from Christine Joab to Lisa Medina [EH] and Jeff		
		Carruesco [EH] RE: Update on cyanobacteria conditions in		
LAND	HABs folder	Stockton Deep Water Ship Channel 7/28/2016	SJC-030	В
		SJC 031 Email from Lisa Medina to Christine Joab and Jeff		
		Carruesco RE: Update on cyanobacteria conditions in Stockton		
LAND	HABs folder	Deep Water Ship Channel 7/28/2016 (SJC-031	В
		SJC 032 Email from Christine Joab to Hal MacLean, etc., RE:		
		Current cyanobacteria bloom density conditions in the San		
LAND	HABs folder	Joaquin River (Stockton DWSC) 8/3/2016	SJC-032	В
		SJC 033 Email from Michelle Wood to armorales@ucdavis.edu		
LAND	HABs folder	RE: Stockton CA microcystis algae blooms 8/4/2016	SJC-033	В
		SJC 034 Email from lyris@swrcb18.wateroards.ca.gov to Linda	,	
		Turkatte [EH] RE: upcoming webinars and new videos		
LAND	HABs folder	8/11/2016	SJC-034	В
		SJC 035 Email from lyris@swrcb18.waterboards.ca.gov to Lisa		
		Medina [EH] RE: Monitoring Council releases harmful algal		
LAND	HABs folder	blooms portal 8/16/2016	SIC-035	В
		SIC 036 Email from Christine Joab to Jeff Carruesco RE: update	,	
		on cycanobacteria conditions in Stockton Deep Water Ship		
LAND	HABs folder	Channel 8/17/2016	SIC-036	В
		SIC 037 Email from Christine Joab to Hal MacLean. etc RE:		
		Current cycnobacteria bloom density conditions in the San		
LAND	HABs folder	Joaquin River (Stockton DWSC) 8/22/2016	SIC-037	В

				Categories (A-In EIR; B-In Hearing;
				C-Not a CEQA issue; D-
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
		SJC 038 Email from California Health Alert Network to Keith		
		Early RE: CAHAN Health Notification-Cauthion Related to		
LAND	HABs folder	Seasonal Blue-Green Algae Blooms 8/24/2016	SJC-038	В
		SJC 039 Email from Christine Joab to Jeff Carruesco, et.al., RE:		
		Microcystin Concentrations at Big Break Regional Shoreline,		_
LAND	HABs folder	8/29/2016	SJC-039	В
		SJC 045 Kurobe et al. SpringerPlus 2013, 2:491. Identification		
		of harmful cyanobacteria in the Sacramento-San Joaquin Delta		_
LAND	HABs folder	and Clear Lake, California by DNA barcoding	SJC-045	В
		SJC 046 Sacramento-San Joaquin Delta Regional Ecosystem		
		Restoration Implementation Plan Ecosystem Conceptual		
		Model. Delta Foodweb Conceptual Model Final Version		
		Revised in Response to Reviewer Comments. Prepared by:		
LAND	HABs folder	John Durand, University of California, Davis	SJC-046	В
		SJC 047 Integration & Application Network ecocheck		
LAND	HABs folder	(webpage) [indicator of HAB on Potomac River 2015	SJC-047	В
		SJC 048 Journal of Experimental Marine Biology and Ecology		
		460 (2014) 8-18 Major-but rare-spring blooms in 2014 in San		
		Francisco Bay Delta, California, a result of the long-tem		
		drought, increased residence time, and alteed nutrient loads		
LAND	HABs folder	and forms, P Glibert, R. Dugdale, et al.	SJC-048	В
		SJC 049 Memorandum from Marin Greenworrd, ICF to		
		Independent Review Panel, 2016 California WaterFix Science		
		Peer Review, RE: Request for graphical representation of		
		effects on Sacramento flow of the rules for water diversion and		
		the amount of water that will be diverted from North Delta		
LAND	HABs folder	(Specific panel request #1)	SJC-049	В
		SJC 050 Errata to Water Agencies' response to discharger's		
LAND	HABs folder	petition for review	SJC-050	В
		SJC 051 scientific publication: The evolutionary diversification		
		of cyanobacteria: Molecular-phylogentic and paleontological		
LAND	HABs folder	perspectives. A Tomitani, A. Knoll, et al. 2/6/2006	SJC-051	В

				Categories (A-In EIR; B-In Hearing;
				C-Not a CEQA issue; D-
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
		SJC 052 Draft technical report xxx March 2015: Factors		
		affecting growth of cyanobacteria with special emphasis on the		
LAND	HABs folder	Sacramento-San Joaquin Delta	SJC-052	В
LAND	HABs folder	SJC 053 general descriptions of Freshwater Ecosystems	SJC-053	В
		SJC 054 Technical report: San Joaquin River Up-Stream DO		
		TMDL Project ERP-02D-P63. Deliverable Title: An analysis of		
		grazing and phytoplankton communities in the lower San		
		Joaquin River above the Stockton Deep Water Ship Channel,		
LAND	HABs folder	5/19/2008	SJC-054	В
		SJC 055 American Society of Limnology and Oceanography		
		publication: Nutritional quality of food resources for		
		zooplankton (Dapnia) I a tidal freshwater system		
		(Sacramento-San Joaquin River Delta) A. Muller-Solger, A.		
LAND	HABs folder	Jassby, et al. 2002	SJC-055	В
		SJC 056 publication: Artificial mixing to control cyanobacterial		
LAND	HABs folder	blooms: a review. P Visser, B. Ibelings, et al. 2/10/2015	SJC-056	В
		SJC 057 Phycological Research 2015; 63: 56-63. Growth,		
		toxicity and oxidative stress of a cultured cyanobacterium		
		(Dolichospermmum sp.) under different CO2/pH and		
LAND	HABs folder	temperature conditions A Brutemark, J Engstrom-Ost et al.	SJC-057	В
		SJC 058 2005 Pelagic Organism Decline Program Progress		
LAND	HABs folder	Report: Microcystis biomass and toxicity 2005	SJC-058	В
		SJC 059 CA EPA, Office of Environmental Health Hazard		
		Assessment: Toxicological summary and suggested action		
		levels to reduce potential adverse health effects of six		
LAND	HABs folder	cyanotoxins	SJC-059	В
		SJC 060 US EPA Drinking Water Health Advisory for the		
LAND	HABs folder	Cyanobacterial microcystin toxins. EPA-820R15100 June 2015	SJC-060	В
		SJC 061 World Health Organization International Agency for		
		Research on Cancer, IARC Monographs on the evaluation of		
		carcinogenic risks to Humans Vol. 94, Ingested nitrate and		
LAND	HABs folder	nitrite, and cyanobacterial peptide toxins, 2010	SJC-061	В

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
		SJC 063 USGS Innovation in Monitoring: The U.S. Geological		
		Survey Sacramento-San Joaquin River Delta, CA, Flow-station		
LAND	HABs folder	network, January 2016	SJC-063	В
		SJC 064 Figure 3. Projected 2010-2099 changes in nine		
		environmental indicators, expressed as mean trends per		
LAND	HABs folder	decade, for the A2 scenario (red) and B1 scenario (blue)	SJC-064	В
		SJC 065 Open Access publication: Effects of the distribution of		
		a toxic mycrocystis bloom on small scale patchiness of		
LAND	HABs folder	zooplankton, E. Reichwaldt, H. son, et al. 2013	SJC-065	В
		SJC 066 Oceanography publication: Evaluation of relationship		
		between light intensity (Lux) and growth of chaetoceros		
LAND	HABs folder	muelleri. S Pal, N Sing, et al. 2013	SJC-066	В
		SJC 067 technical report: Sustainable techniques for selected		
LAND	HABs folder	live feed culture, Z Kassim, A John et al.	SJC-067	В
		SJC 068 Delta harmful Algal Blooms (HABs) California		
LAND	HABs folder	WaterFix impacts, Erik Ringelberg	SJC-068	В
San Juan	BKS clients			
Water	FEIR FEIS			
District	Comment letter	EXHIBIT SJWD-1 TESTIMONY OF SHAUNA LORANCE, P.E.	SJWD-1	В
San Juan	BKS clients			
Water	FEIR FEIS	EXHIBIT SJWD-2 STATEMENT OF QUALIFICATIONS		
District	Comment letter	FOR SHAUNA LORANCE, P.E.	SJWD-2	C
San Juan	BKS clients			
Water	FEIR FEIS	EXHIBIT SSWD-1		
District	Comment letter	TESTIMONY OF ROBERT ROSCOE	SSWD-1	В
San Juan	BKS clients			
Water	FEIR FEIS	EXHIBIT SSWD-2 STATEMENT OF QUALIFICATIONS		
District	Comment letter	FOR ROBERT ROSCOE	SSWD-2	С

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Exhibit Number	C-Not a CEQA issue; D- Unsubstantiated)
	1-30-17			
	Stockton			
	WaterFix FEIR-	Exhibit B: California WaterFix Water Right Change Petition		
City of	FEIS Comments	Hearing Transcript, Aug. 25, 201 6,		
Stockton	w-Exhs A-C	Vol. 15, pp. 108-109, and associated Exhibits	STKN-001	С
	1-30-17			
	Stockton			
	WaterFix FEIR-	Exhibit B: California WaterFix Water Right Change Petition		
City of	FEIS Comments	Hearing Transcript, Aug. 25, 201 6,		
Stockton	w-Exhs A-C	Vol. 15, pp. 108-109, and associated Exhibits	STKN-005	С
	1-30-17			
	Stockton			
	WaterFix FEIR-	Exhibit B: California WaterFix Water Right Change Petition		
City of	FEIS Comments	Hearing Transcript, Aug. 25, 201 6,		
Stockton	w-Exhs A-C	Vol. 15, pp. 108-109, and associated Exhibits	STKN-006	C
	1-30-17			
	Stockton			
	WaterFix FEIR-	Exhibit B: California WaterFix Water Right Change Petition		
City of	FEIS Comments	Hearing Transcript, Aug. 25, 201 6,		
Stockton	w-Exhs A-C	Vol. 15, pp. 108-109, and associated Exhibits	STKN-007	С
	1-30-17			
	Stockton			
	WaterFix FEIR-	Exhibit B: California WaterFix Water Right Change Petition		
City of	FEIS Comments	Hearing Transcript, Aug. 25, 201 6,	STKN-008 &	
Stockton	w-Exhs A-C	Vol. 15, pp. 108-109, and associated Exhibits	STKN-009	C
	1-30-17	Exhibit A: August 30, 2016 Testimony of Robert Granberg, P.E.,		
	Stockton	submitted in the Hearing in the Matter of California		
	WaterFix FEIR-	Department of Water Resources and United States Bureau of		
Lity of	FEIS Comments	Reclamation is Request for a Change in Point of Diversion for		
Stockton	w-Exhs A-C	Lalifornia WaterFix	STKN-010	В

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Fyhihit Number	C-Not a CEQA issue; D-
Liftity	1-30-17	Exhibit A: August 30, 2016 Testimony of Robert Granberg, P.E.		onsubstantiateuj
	Stockton	submitted in the Hearing in the Matter of California		
	WaterFix FEIR-	Department of Water Resources and United States Bureau of		
City of	FEIS Comments	Reclamatio11's Request for a Change in Point of Diversion for		
Stockton	w-Exhs A-C	California WaterFix	STKN-011	В
	1-30-17	Exhibit A: August 30, 2016 Testimony of Robert Granberg, P.E.,		
	Stockton	submitted in the Hearing in the Matter of California		
	WaterFix FEIR-	Department of Water Resources and United States Bureau of		
City of	FEIS Comments	Reclamatio11's Request for a Change in Point of Diversion for		
Stockton	w-Exhs A-C	California WaterFix	STKN-023	В
		SJC Evidence: State Board Proceeding , Evidence submittal by	Submission of	
		Local Agencies of the North Delta et al., Islands, Inc,. And the	Exhibit List for	
LAND	HABs folder	San Joaquin County Protestants	Entry into Evidence	В
	2-			
NSWA	svg_01_001.pdf	Testimony of Marc Van Camp	SVG-01-001	В
	3-			
NSWA	svg_01_002.pdf	Statement of Qualifications of Marc Van Camp	SVG-01-002	С
		Settlement Contract between the United States and Carter		
NOMA	4-	Mutual Water Company, 14-06-200-2401A-R-1, March 31,	ava 00.000	
NSWA	svg_02_028.pdf		SVG-02-028	C
NOMA	5-	Settlement Contract between the United States and Howald	010 00 001	
NSWA	svg_03_001.pdf	Farms, Inc, 14-06-200-1042A-R-1, March 18, 2005.	SVG-03-001	L
NCIAZA	0^{-}	Settlement Contract between the United States and Maxwell		C
INSWA	svg_04_056.pdi	Cattlement Contract hot usen the United States and Maridian	576-04-050	L .
	7	Settlement Contract between the Onited States and Meridian		
NSWA	7^{-}	2005	SVC-05-013	C
NSWA	3vg_05_015.pui	Sottlement Contract between the United States and Natomas	370-03-013	
	8-svg 06	Central Mutual Water Company, 14-06-200-885A-R-1 May		
NSWA	059.ndf	10. 2005.	SVG-06-059	С
	9_	Settlement Contract between the United States and Oii		<u> </u>
NSWA	svg_07_022.pdf	Brothers Farm, Inc., 14-06-200-3753A-R-1, March 4, 2005.	SVG-07-022	С

Entity	File Name	Document Title	Exhibit Number	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D- Unsubstantiated)
NOMA	10-	Settlement Contract between the United States and Oji Family		
NSWA	svg_08_017.pdf	Partnership, 4-06-200-242/A-R-1, March 4, 2005.	SVG-08-017	C
		Settlement Contract between the United States and Pelger		
	11-	Mutual Water Company, 14-06-200-2073A-R-1, February 28,		
NSWA	svg_09_019.pdf	2005.	SVG-09-019	C
	10	Settlement Contract between the United States and Pleasant-		
NOTATA	12-	Grove Verona Mutual Water Company, 14-06-200-5520A-R-1,	0110 40 004	
NSWA	svg_10_097.pdf	February 28, 2005.	SVG-10-031	C
	10 11	Settlement Contract between the United States and Princeton		
	13-svg 11	Codora-Glenn Irrigation District, 14-06-200-849A-R-1, March		
NSWA	031.pdf	4, 2005.	SVG-11-031	C
NOTATA	14-	Settlement Contract between the United States and Provident	0110 40 040	
NSWA	svg_12_049.pdf	Irrigation District, 14-06-200-856A-R-1, March 4, 2005.	SVG-12-049	C
	45	Settlement Contract between the United States and		
NICIALA	15-	Reclamation District 108, 14-06-200-876A-R-1, February 28,	010 10 050	
NSWA	svg_13_079.pdf	2005.	SVG-13-079	C
NOTATA	16-	Settlement Contract between the United States and Henry D.	0110 4 4 000	
NSWA	svg_14_023.pdf	Richter, et al., 14-06-200-4362A-R-1, March 9, 2005.	SVG-14-023	C
		Settlement Contract between the United States and River		
	17-	Garden Farms Company, 14-06-200-878A-R-1, February 28,		
NSWA	svg_15_036.pdf	2005.	SVG-15-036	C
	18-	Settlement Contract between the United States and Sutter		
NSWA	svg_16_104.pdf	Mutual Water Company, 14-06-200-815A-R-1, March 2, 2005.	SVG-16-104	C
		Settlement Contract between the United States and Tisdale		
	19-svg_	Irrigation and Drainage Company, 14-06-200-2781A-R-1, April		
NSWA	17_015.pdf	4, 2005.	SVG-17-015	С
		Settlement Contract between the United States and		
	20-svg_	Windswept Land and Livestock Company, 14-06-200-2045A-		
NSWA	18_008.pdf	R-1, April 7, 2006.	SVG-18-009	C
	21-svg_	Reclamation Report of Monthly Sacramento River Deliveries		
NSWA	19_001.pdf	(Long-Term Contracts) Table 28 (2010)	SVG-19-001	I C

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Fyhihit Numbor	C-Not a CEQA issue; D-
Entity		Pocument The		Unsubstantiateu)
NSWA	19.002. ndf	(Long-Term Contracts) Table 28 (2011)	SVG-19-002	С
	23-svg	Reclamation Report of Monthly Sacramento River Deliveries		
NSWA	19_003.pdf	(Long-Term Contracts) Table 28 (2012)	SVG-19-003	С
	24-svg_	Reclamation Report of Monthly Sacramento River Deliveries		
NSWA	19_004.pdf	(Long-Term Contracts) Table 28 (2013)	SVG-19-004	С
	25-svg_	Reclamation Report of Monthly Sacramento River Deliveries		
NSWA	19_005.pdf	(Long-Term Contracts) Table 28 (2014)	SVG-19-005	С
	26-svg_	Reclamation Report of Monthly Sacramento River Deliveries		
NSWA	19_006.pdf	(Long-Term Contracts) Table 28 (2015)	SVG-19-006	С
		Agreement between Department of Water Resources and the		
	27-	Joint Water Districts Board on Diversion of Water from the		
NSWA	svg_20_072.pdf	Feather River, May 27, 1969	SVG-20-072	C
NCMAA	28-	Joint Water Districts Deard Undralage Depart 2015	SVC 20 072	σ
NSWA	svg_20_073.pdf	Joint Water Districts Board Hydrology Report, 2015	576-20-073	В
		Fl Dorado Irrigation District Providing for Project Water		
	29-	Service from the American River Division 14-06-1357A-LTR1		
NSWA	svg 22 180.pdf	February 28, 2006.	SVG-22-180	С
		Draft Long-Term Renewal Contract between the United States		
		and Sacramento Municipal Utility District Providing for Project		
	30-	Water Service from the American River Division, 14-06-200-		
NSWA	svg_23_062.pdf	5198A-LTR1, October 18, 2012	SVG-23-062	С
		Interim Renewal Contract between the United States and		
		Sacramento Municipal Utility District Providing for Project		
	31-	Water Service from the American River Division, 14-06-200-		
NSWA	svg_23_063.pdf	5198A-IR2	SVG-23-063	С
	32-svg_24_			
NSWA	001.pdf	American River Contractors, CVP Deliveries, 2002-2014	SVG-24-001	С
NCIALA	33-svg_25_037			
NSWA	.pat	Bay-Delta Settlement Agreement with SSWD and DWR	576-25-037	L

				Categories (A-In EIR; B-In Hearing;
Entity	File Nome	Dogument Title	Ewhihit Number	C-Not a CEQA issue; D-
Entity		Document Title	EXIIIDIL NUIIIDEI	Unsubstantiated)
NSMA	1-37 WU-1 (folder)	WaterFix	SVANUL-1	R
NSWA			5000-1	D
NSWA	100.ndf	Testimony of Walter Bourez	SVWU-100	В
NSWA	4-svwu 101.pdf	Statement of Oualifications for Walter Bourez	SVWU-101	C
	5-	MBK Report on Review of Bay Delta Conservation Program		
NSWA	svwu_102.pdf	Modeling, June 20, 2014	SVWU-102	В
		MBK Technical Comments on the Bay Delta Conservation		
	6-svwu_	Plan/California WaterFix Partially Recirculated Draft		
NSWA	103.pdf	BIR/Supplemental Draft EIS, October 28, 2015	SVWU-103	В
		MBK Technical Comments on Coordinated Long-Term		
	7-svwu_	Operation of the Central Valley Project and State Water Project		
NSWA	104.pdf	Draft Environmental Impact Statement, September 29, 2015	SVWU-104	В
	8-			
NSWA	svwu_105.pdf	Testimony of Dan Easton	SVWU-105	В
	9-svwu_			_
NSWA	106.pdf	Statement of Qualifications for Dan Easton	SVWU-106	С
	10-svwu_			
NSWA	107.pdf	MBK California WaterFix Modeling Review, August 30, 2016	SVWU-107	В
NOMA	11-		0171111 4 0 0	
NSWA	svwu_108.pdf	MBK Technical Memorandum with example 2-year injury	SVWU-108	В
NCIAZA	12-	MBK Technical Memorandum regarding BL, H3, and H4	CUMMUL 100	D
NSWA	svwu_109.pdf	scenarios	SVWU-109	В
NCMAA	13-svwu_i	Walter Deurez Deurez Deint Dresentation	CV/14/11 110	П
INSWA	10.pdi	Walter Bourez PowerPoint Presentation	5000-110	В
NSMA	2 cran 2 ndf	Monuny Probability of Exceedance - Storage at Shasta	STATE 2	P
INSWA	2-svwu_2.pul	Testimony of leffroy D Sytten on behalf of Teherra Calves	3 V VV U-2	D
		Canal Authority and Water Service Contractors Within its		
тсса	2-tcca 01	Service Area	TCCA-1	В

				Categories (A-In EIR; B-In Hearing;
Fntity	File Name	Document Title	Fyhihit Number	C-Not a CEQA issue; D-
Entity	rne name	Long-Term Renewal Contract Between the United States and		Ulisubstantiateuj
TCCA	9-tcca_10	Davis Water District	TCCA-10	С
		Long-Term Renewal Contract Between the United States and		
TCCA	10-tcca_11	Dunnigan Water District	TCCA-11	С
		Subcontract Between the County of Colusa and the Glenn		
TCCA	11-tcca_12	Valley Water District	TCCA-12	С
		Long-Term Renewal Contract Between the United States and		
TCCA	12-tcca_13	Glide Water District	TCCA-13	С
		Subcontract Between the County of Colusa and the Holthouse		
TCCA	13-tcca_14	Water District	TCCA-14	С
		Long-Term Renewal Contract Between the United States and		
TCCA	14-tcca_15	Kanawha Water District	TCCA-15	С
		Long-Term Renewal Contract Between the United States and		
TCCA	15-tcca_16	Kirkwood Water District	TCCA-16	С
		Long-Term Renewal Contract Between the United States and		
TCCA	16-tcca_17	La Grande Water District	TCCA-17	C
		Subcontract Between the County of Colusa and the La Grande		
TCCA	17-tcca_18	Water District	TCCA-18	С
		Subcontract Between the County of Colusa and the Myers-		
TCCA	18-tcca_19	Marsh Mutual Water Company	TCCA-19	С
		Tehama-Colusa Canal Authority 1996 Amended Joint Powers		
TCCA	3-tcca_02	Agreement	TCCA-2	С
		Long-Term Renewal Contract Between the United States and		
TCCA	19-tcca_20	Orland-Artois Water District	TCCA-20	С
		Long-Term Renewal Contract Between the United States and		
TCCA	20-tcca_21	Proberta Water District	TCCA-21	С
		Long-Term Renewal Contract Between the United States and		
TCCA	21-tcca_22	Thomes Creek Water District	TCCA-22	С
		Long-Term Renewal Contract Between the United States and		
TCCA	22-tcca_23	Westside Water District	TCCA-23	C

				Categories (A-In EIR; B-In Hearing;
E-dit-	Eile News		Fashihit Nameh an	C-Not a CEQA issue; D-
Entity	File Name	Document little	Exhibit Number	Unsubstantiated)
<i>maa</i>		Contract between the County of Colusa and 4M Water District -	maga F	
ТССА	4-tcca_05	February 25, 2005	TCCA-5	C
		Long-Term Renewal Contract Between the United States and		
TCCA	5-tcca_06	Colusa County Water District - February 25, 2005	TCCA-6	С
		Subcontract between the County of Colusa and the Colusa		
TCCA	6-tcca_07	County Water District - February 25, 2005	TCCA-7	C
		Long-Term Renewal Contract Between the United States and		
TCCA	7-tcca_08	Corning Water District - February 25, 2005	TCCA-8	С
		Subcontract between the County of Colusa and the Cortina		
TCCA	8-tcca_09	Water District - February 25, 2005	TCCA-9	С
	15-			
	dfcg re direct	Excerpt from Hearing Transcript Vol. 25, Part 1B; Re-direct of		
CCVFCA	10-28	Delta Flood Control Group - October 28, 2016	Transcript	С
LAND	Salinity Folder	16.11.04 California WaterFix Hrg Transcript	Transcript	С
	Physical Injury	16.11.10 California WaterFix Hrg Transcript November 10,	•	
LAND	folder	2016, Part 1b: Volume 28	Transcript	С
LAND	HABs folder	16.11.17 California WaterFix Hrg Transcripts	Transcript	С
		Attachment 3 -		
	Exponent	Transcript of Jennifer Pierre's		
	Technical	direct testimony and cross examination		
Brentwoo	Comments and	during the WaterFix		
d. Citv of	Attachments 2	Change Petition Proceedings, July		
Antioch	7ian2017	29. 2016.	Transcript	С
	8-12-2016 Part		1	
	1A Transcript	California WaterFix Water Right Change Petition Hearing Part		
SDWA	Volume 10	1A Volume 10	Transcript	С
	8-24-16 Part			-
	1A transcript	California WaterFix Water Right Change Petition Hearing Part		
SDWA	Volume 14	1A Volume 14	Transcript	С

				Categories (A-In EIR; B-In Hearing;
Entity	File Name	Document Title	Exhibit Number	C-Not a CEQA issue; D- Unsubstantiated)
V	8-25-16 Part			
	1A transcript	California WaterFix Water Right Change Petition Hearing Part		
SDWA	Volume 15	1A Volume 15	Transcript	С
	11-17-16 Part			
ODIALA	1B transcript	California WaterFix Water Right Change Petition Hearing Part	m	
SDWA	Volume 29	1B Volume 29	Transcript	C
	11-18-16 Part	California Water Fix Water Dight Change Detition Hearing Dert		
SDWA	Volume 30	18 Volume 30	Transcrint	C
SDWA	12-8-16 Part			
	1B Transcript	California WaterFix Water Right Change Petition Hearing Part		
SDWA	Volume 33	1B Volume 33	Transcript	С
	19-			
	svwu_modeling	Excerpt from Hearing Transcript Vol. 13, Part l A: SVWU Cross		
NSWA	_ cross 1.pdf	of Modeling Panel 1.	Transcript	С
	20-			
	svwu_modeling	Excerpt from Hearing Transcript Vol. 14, Part l A: SVWU Cross		
NSWA	_ cross2.pdf	of Modeling Panel 2.	Transcript	C
	21-svwu_wtr			
	Cross of Water			
NSWA	Rights Panel	Excernt from Hearing Transcript Vol. 17 Part I A: SVWII	Transcrint	C
	23-svwu cross			3
	10-20.pdf			
	Examination of			
NSWA	SVWU 1	Excerpt from Hearing Transcript Vol. 20, Part l B: Cross	Transcript	С
	22-			
	svwu_direct_l			
NOW	0-20.pdf Direct		_	6
NSWA	Testimony	Excerpt from Hearing Transcript Vol. 20, Part I B: SVWU	Transcript	C
NCMAA	34-svg_direct_	Excerpt from Hearing Transcript Vol. 21, Part I B: SVG Direct	Transarint	C
INDAA	10-21.pdf	resumony	Transcript	L L

				Categories (A-In EIR; B-In Hearing;
Fntity	File Name	Document Title	Fyhihit Number	C-Not a CEQA issue; D-
Lintity	35-svg cross	Excerpt from Hearing Transcript Vol. 21 . Part l B: Cross		Onsubstantiateuj
NSWA	10-21.pdf	Examination of SVG	Transcript	С
	24-svwu_cross_ 10-21.pdf			
	Examination of			
NSWA	SVWU 2	Excerpt from Hearing Transcript Vol. 21, Part l B: Cross	Transcript	С
	26-			
NCMA	svwu_recross_	Everyont from Uppying Transprint Vol. 21 Dort D. D. Cross of	Transprint	C
INSWA	25 gran no	Excerpt from Hearing Transcript vol. 21, Part I B: Re-cross of	Transcript	L L
	direct 10-	Excernt from Hearing Transcript Vol. 21 Part B. Pe-Direct of		
NSWA	21 ndf	sywii	Transcrint	C
	27-	Stitu		G
	tcca direct 10-	Excerpt from Hearing Transcript Vol. 23. Part 1B: TCCA Direct		
TCCA	26	Testimony	Transcript	С
	14-	Excerpt from Hearing Transcript Vol. 25, Part 1B: Cross		
	dfcg_cross_10-	Examination of Delta Flood Control Group - Friday October 28,		
CCVFCA	28	2016	Transcript	С
	13-			
	dfcg_direct_10	Excerpt from Hearing Transcript Vol. 25, Part 1B: Delta Flood		
CCVFCA	-28	Control Group Direct Testimony - Friday, October 28, 2016	Transcript	С
	24-			
THE	tcca_overview_	Excerpt from Hearing Transcript Vol. 4 Part 1A: TCCA Cross	m • •	
TCCA	Cross	Examination of Overview Panel	Transcript	L
	15-	Eucount from Uccurring Transport Vol 4 Dout I A. SWAUL Cross		
NSWA	svwu_overview	ef Overview Panel	Transcript	C
NOVA	_ cross.pui			
	SVWII OVERVIEW	Fycernt from Hearing Transcript Vol 5 Part I A. SVWII Re-		
NSWA	_recross.pdf	Cross of Overview Panel.	Transcript	С

				Categories (A-In EIR; B-In Hearing;
Fntity	File Name	Document Title	Fyhihit Number	C-Not a CEQA issue; D-
Littly	17-			onsubstantiateuj
	svwu_engineeri	Excerpt from Hearing Transcript Vol. 6, Part l A: SVWU Cross		
NSWA	ng_cross.pdf	of Engineering Panel.	Transcript	С
	18-			
	svwu_operatio	Excerpt from Hearing Transcript Vol. 8, Part l A: SVWU Cross		
NSWA	ns_cross.pdf	of Operations Panel.	Transcript	С
<i>maat</i>	25-tcca_wtr	Excerpt from Hearing Transcript Vol.17 Part 1A: TCCA Cross		
ТССА	rts_cross1	Examination of Water Rights Panel 1	Transcript	C
TOCA	26-tcca_wtr	Excerpt from Hearing Transcript Vol.18 Part 1A: TCCA Cross	The second second	C
ICCA	rts_cross2	Examination of water Rights Panel 1	Transcript	L
	$\frac{28}{10}$	Excorpt from Hoaring Transcript Vol 22 Part 1B. Cross		
ТССА	26	examination of TCCA	Transcrint	C
10011	Regional San			G
	FEIR-EIS			
	Comments			
	Final 2017-01-			
Regional	30 w-			
San	Attachment.pdf	Exhibit B	Transcript	С
	1-30-17			
	Stockton			
	WaterFix FEIR-	Exhibit B: California WaterFix Water Right Change Petition		
City of	FEIS Comments	Hearing Transcript, Aug. 25, 2016,	Transariat	C
Stockton	W-EXIIS A-C	Vol. 15, pp. 108-109, and associated Exhibits	Transcript	L.
	ndwa engineeri	Volume 13 Computerized Transcript of California WaterFix		
NDWA	ng cross2	Water Right Change Petition Hearing Part 1A	Transcrint	C
	47-			
	ndwa modeling	Volume 14, Computerized Transcript of California WaterFix		
NDWA	_cross	Water Right Change Petition Hearing Part 1A	Transcript	С
	48-ndwa_wtr	Volume 18, Computerized Transcript of California WaterFix		
NDWA	rights_cross	Water Right Change Petition Hearing Part 1A	Transcript	C

				Categories (A-In EIR; B-In Hearing; C-Not a CEOA issue: D-
Entity	File Name	Document Title	Exhibit Number	Unsubstantiated)
	49-			
	ndwa_direct_10	Volume 25, Computerized Transcript of California WaterFix		
NDWA	-28	Water Right Change Petition Hearing Part 1B	Transcript	С
	50-			
	ndwa_cross_10	Volume 25, Computerized Transcript of California WaterFix		
NDWA	-28	Water Right Change Petition Hearing Part 1B	Transcript	C
	51-			
	ndwa_re_direct	Volume 25, Computerized Transcript of California WaterFix		
NDWA	_10-28	Water Right Change Petition Hearing Part 1B	Transcript	C
	52-			
	ndwa_recross_	Volume 25, Computerized Transcript of California WaterFix		
NDWA	10-28	Water Right Change Petition Hearing Part 1B	Transcript	С
	43-			
	ndwa_overview	Volume 4, Computerized Transcript of California WaterFix		
NDWA	_cross	Water Right Change Petition Hearing Part 1A	Transcript	С
	44-			
	ndwa_engineeri	Volume 6, Computerized Transcript of California WaterFix		
NDWA	ng_cross1	Water Right Change Petition Hearing Part 1A	Transcript	C
	46-			
	ndwa_operatio	Volume 9, Computerized Transcript of California WaterFix		
NDWA	ns_cross	Water Right Change Petition Hearing Part 1A	Transcript	C

Assessment of June and July 2017 Final EIR Comments from Parties to State Water Board Change Point of Diversion Hearing

Entity	File Name	Document Title	Exhibit Number	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D- Unsubstantiated)
ARWA	ARWA 300e	Testimony of Tom Gohring - Revised	ARWA 300e	A, B, C
ARWA	ARWA_303	Memorandum of Understanding on Lower American River Flow Management Standard, dated October 4, 2004	ARWA_303	C
ARWA	ARWA_304	National Marine Fisheries Service Biological Opinion and Conference Opinion on the Long-Term Operations of the Central Valley Project and State Water Project, June 2009, Actions II.1 to II.2 and Appendix 2-D	ARWA_304	A
ARWA	ARWA_305	2013 Public Review Draft BDCP EIR/EIS, Appendix 5A, Section C (excerpt)	ARWA_305	A
ARWA	ARWA_306	2016 California WaterFix Final EIR/EIS, Appendix 5A, Section C (excerpt)	ARWA_306	A
ARWA	ARWA_307	Bay Delta Conservation Plan/California WaterFix Final EIR/EIS, Volume II, Master Response 47	ARWA_307	A
ARWA	ARWA_308	Proposed Water-Right Terms and Conditions	ARWA_308	С
ARWA	ARWA 400	Testimonv of Jeffrev Weaver	ARWA 400	С
ARWA	ARWA 401	Modeling Assumptions	ARWA 401	В
ARWA	ARWA 402	Key Modeling Results for the Modified FMS	ARWA 402	В
ARWA	CITYSAC_36	Surrebuttal Testimony of Bonny L. Starr	CITYSAC_36	В
ARWA	CITYSAC_37	Daily Raw Temperature for SRWTP and EAFWTP for Jan 2012-Dec 2015	CITYSAC_37	А, В
ARWA	SJWD_17	Testimony of Keith Durkin, P.E.	SJWD_17	B, C
ARWA	SJWD_18	Water Right Order 2015-0043, Corrected	SJWD_18	С
ARWA	SJWD_19	March 2015 Sacramento River Temperature Model Runs	SJWD_19	A, B

Entity	File Name	Document Title	Exhibit Number	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D- Unsubstantiated)
ARWA	SJWD_20	March 30, 2015 Request from SWRCB to Reclamation for Refined Sacramento River Temperat ure Modeling Information and a Plan for New Melones Operations to Reasonably Protect Fish and Wildlife	SJWD_20	C
ARWA	SJWD_21	Shasta Temperature Management Plan - Key Components	SJWD_21	С
ARWA	SJWD_22	Draft Order Denying in Part and Granting in Part Petitions for Reconsideration of and Addressing Objections to the Executive Director's February 3, 2015 Order, Etc.	SJWD_22	C
ARWA	SJWD_23	Reclamation Comment Letter Regarding Draft Temporary Urgency Change Petition Order	SJWD_23	С
ARWA	SJWD_24	State Water Contractors Comment Letter Regarding Draft Temporary Urgency Change Petition Order	SJWD_24	С
ARWA	SJWD_25	San Luis & Delta-Mendota Water Authority, et al. Comment Letter Regarding Draft Temporary Urgency Change Petition Order	SJWD_25	C
ARWA	SJWD_26	May 2016 CVP and SWP 2016 Drought Contingency Plan for Water Project Operations	SJWD_26	С
ARWA	Folsom 28	Testimony of Marcus Yasutake, P.E.	Folsom 28	B, C
ARWA	BKS-50	State Water Board Draft Order WR 2015, dated December 7, 2015, Denying in Part and Granting in Part Petitions for Reconsideration and Addressing Objections	BKS-50	С

Entity	File Name	Document Title	Exhibit Number	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D- Unsubstantiated)
ARWA	BKS-51	Letter dated December 11, 2015 from David G. Murillo, U.S. Bureau of Reclamation, to the State Water Board	BKS-51	С
ARWA	BKS-53	Excerpt from the Cal. WaterFix Biological Assessment	BKS-53	А
ARWA	BKS-100	Exhibit DOI-33 Errata, marked	BKS-100	В
ARWA	BKS-101	July 2016 California WaterFix Biological Assessment App. 5.A, marked excerpts	BKS-101	А
ARWA	BKS-102	December 2016 California WaterFix Final EIR/EIS Chapter 2, marked	BKS-102	А
ARWA	BKS-103	Biological Assessment QO Modeling Results	BKS-103	A
ARWA	BKS-104	Biological Assessment Q5 Modeling Results	BKS-104	A
ARWA	1_Cover_TitlePa ge_TOC_Revised DraftBA	April 27, 2017 Hearing Transcript (excerpts)	Transcript-2017-04- 27.pdf	В
ARWA	Ch_1_Introducti on_RevisedDraft BA	May 4, 2017 Hearing Transcript (excerpts)	Transcript-2017-05- 04.pdf	В
ARWA	Ch_2_Consultati on_History_Revi sedDraftBA	May 5, 2017 Hearing Transcript (excerpts)	Transcript-2017-05- 05.pdf	В
ARWA	Ch_3_Proposed_ Action_Revised DraftBA	May 11, 2017 Hearing Transcript (excerpts	Transcript-2017-05- 11.odf	В
ARWA	Ch_4_Action_Are a_and_Environm ental_Baseline_ RevisedDraftBA	May 12, 2017 Hearing Transcript (excerpts)	Transcript-2017-05- 12.pdf	В

Entity	File Name	Document Title	Exhibit Number	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D- Unsubstantiated)
ARWA	Ch_5_Effects_An alysis_NMFS_sp ecies_RevisedDr aftBA	Mav 18, 2017 Hearing Transcript (excerpts)	Transcriot-2017-05- 18.odf	В
City of Stockton	Ch_6_Effects_An alysis_USFWS_s pecies_RevisedD raftBA	March 23, 2017 Rebuttal Testimony of Susan Paulsen, Ph.D., P.E., submitted in the Hearing in the Matter of California Department of Water Resources and United States Bureau of Reclamation's Request for a Change in Point of Diversion for California WaterFix (WaterFix Change Petition Hearing)	STKN 25	А, В
City of Stockton	Ch_7_Effects_De terminations_Re visedDraftBA	March 22, 2017 Exponent Report on the Effects of the California WaterFix Project on the City of Stockton, submitted in the WaterFix Change Petition Hearing	STKN 26	А, В
City of Stockton	App_5.A_CALSI M_RevisedDraft BA	June 9, 2017 Sur-Rebuttal Testimony of Susan Paulsen, Ph.D., P.E:, submitted in the WaterFix Change Petition Hearing	STKN 47	А, В,
City of Stockton	Transcript- 2017-04-27	June 9, 2017 Exponent Technical Response to Petitioners' Rebuttal Testimony in the WaterFix Proceedings, submitted in the WaterFix Change Petition Hearing	STKN48	А,В,
City of Stockton	Transcript- 2017-05-04	June 9, 2017 Sur-Rebuttal Testimony of Robert Granberg, submitted in the WaterFix Change Petition Hearing	STKN 39	В
NDWA	Transcript- 2017-05-05	Written Testimony of Gomathishankar Parvathinathan	ndwa 300	В
NDWA	Transcript- 2017-05-11	Written Testimony of Gary Kienlen	ndwa 301	В
NDWA	Transcript- 2017-05-12	Rebuttal Testimony of Michelle Leinfelder-Miles	land 78	В
NDWA	Transcript- 2017-05-18	Michelle Leinfelder-Miles Project Report, 2016	land 79	В

Entity	File Name	Document Title	Exhibit Number	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D- Unsubstantiated)
NDWA	no att just listed	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 37 (Cross Examination of Pane12. Operations, Modeling, Water Quality, and Water Rights)	20170428_transcrip t-sergent- cross.pdf	В
NDWA	20170505_trans cript-leahigh- nader-tehrani- cross.pdf	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 40 (Cross Examination of Pane12. Operations, Modeling, Water Quality, and Water Rights)	20170505_transcrip t-leahigh- nader- tehrani-cross.pdf	В
NDWA	20170510_trans cript- kimmelshue- cross. pdf	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 42 (Cross Exa m ina ti on of Pane13: Agricultural Practice and Economics)	20170510_transcrip t- kimmelshue- cross. pdf	В
NDWA	2017051 l_transcript- nader- tehrani- recross.pdf	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 43 (Recross Examination of Panel 2. Operations, Modeling, Water Quality, and Water Rights)	2017051 l_transcript-nader- tehrani-recross.pdf	В
NDWA	20170518_trans cript-shankar- direct.pdf	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 45 (Direct Testimony of NDWA Panel)	20170518_transcrip t-shankar- direct.pdf	В
NDWA	20170518_trans cript-shankar- cross.pdf	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 45 (Cross Examination of NDWA Panel)	20170518_transcrip t-shankar- cross.pdf	В
NDWA	20170519_trans cript-leinfelder- miles-cross	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 46 (Direct Testimony of Dr. Leinfelder-Miles)	20170519_transcrip t-leinfelder- miles- direct.pdf	В
NDWA	20170519_trans cript-leinfelder- miles-direct.pdf	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 46 (Cross Examination of Dr. Leinfelder-Miles)	20170519_transcrip t-leinfelder- miles- direct.pdf	В

Entity	File Name	Document Title	Exhibit Number	Categories (A-In EIR; B-In Hearing;
				Unsubstantiated)
NDWA	20170428_trans	Excerpt from Hearing Transcript, Part 1, Volume 38, April 28,	20170428_transcrip	В
	cript-sergent- cross	2017	t-sergent-cross	
SVWU	svwu_200	Rebuttal Testimony of Walter Bourez	svwu_200	А, В
SVWU	svwu_201	Modeling Output Tables	svwu_201	В
SVWU	svwu_202	MBK Technical Memorandum Regarding Modeling Drought Conditions	svwu_202	B, C
SVWU	svwu_202 errata	MBK Technical Memorandum Regarding Modeling Drought Conditions - Errata	svwu_202 errata	B, C
SVWU	svwu_203	Rebuttal Testimony of Dan Easton	svwu_203	В
SVWU	db_l	Excerpt of DWR-86, p. 3	db_l	В
SVWU	db_3	Excerpt of SVWU-108, p. 9	db_3	В
SVWU	db_4	Excerpt of DWR-86, pp. 4-5	db_4	В
SVWU	db_7	Excerpt of DWR-86, p. 12	db_7	В
SVWU	db_8	Excerpt of DWR-86, p. 9	db_8	В
SVWU	db_9	Excerpt of DWR-86, p. 12	db_9	В
SVWU	db_l O	Excerpt of DWR-86, p. 14	db_l 0	В
SVWU	db_l l.	Excerpt of DWR-86, pp. 14-15	db_l l.	В
SVWU	db_13	Excerpt of DWR-86, p. 15	db_13	В
SVWU	db_15	Excerpt of DWR-86, p. 16	db_15	В
SVWU	db_16	Excerpt of DWR-86, p. 31	db_16	В
SVWU	svwu_300	Testimony of Walter Bourez	svwu_300	А, В
SVWU	svwu_301	Testimony of Dan Easton	svwu_301	А, В
SVWU	svwu_302	California WaterFix MBK Modeling Surrebuttal Technical Report	svwu_302	А, В
SVWU	svwu_303	MBK PowerPoint	svwu_303	A, B
SVWU	svwu_304	BA Appendix A_Foresight	svwu_304	А

Entity	File Name	Document Title	Exhibit Number	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D-
				Unsubstantiated)
SVWU	svwu_305	WY Type CalSim	svwu_305	С
SVWU	svwu_306.	July 16, 2015 Tech Memo re Improvements to CalSim San Luis Operations	svwu_306.	В
SVWU	SWRCB-104	Biological Assessment for the California WaterFix, July 2016	SWRCB-104	А
	folder	(Published August 2nd, 2016)		
SVWU	20170425_trans	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 36	20170425_transcrip	В
	cript- bucholz- cross.pdf	(Cross Examination of Panel 1: Engineering and Groundwater)	t- bucholz-cross.pdf	
SVWU	20170427_trans	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 37	20170427_transcrip	В
	cript- milligan- cross.pdf	(Cross Examination of Panel 2: Operations, Modeling, Water Quality, and Water Rights)	t- milligan-cross.pdf	
SVWU	20170428_trans	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 38	20170428_transcrip	В
	cript- sergent- cross.pdf	(Cross Examination of Panel 2: Operations, Modeling, Water Quality, and Water Rights)	t- sergent-cross.pdf	
SVWU	20170504_trans	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 39	20170504_transcrip	В
	cript- leahigh- cross.pdf	(Cross Examination of Panel 2: Operations, Modeling, Water Quality, and Water Rights)	t- leahigh-cross.pdf	
SVWU	20170504_trans	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 39	20170504_transcrip	В
	cript- parker-	(Cross Examination of Panel 2: Operations, Modeling, Water	t- parker-cross-1.	
	cross-1. pdf	Quality, and Water Rights)	pdf	
SVWU	20170505_trans	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 40	20170505_transcrip	В
	cript- munevar-	(Cross Examination of Panel 2: Operations, Modeling, Water	t- munevar-cross-1.	
	cross-1. pdf	Quality, and Water Rights)	pdf	
SVWU	20170505_trans	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 40	20170505_transcrip	В
	cript- munevar-	(Cross Examination of Panel 2: Operations, Modeling, Water	t- munevar-cross-	
	cross-2.pdf	Quality, and water Rights)	2.pdf	

Entity	File Name	Document Title	Exhibit Number	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D- Unsubstantiated)
SVWU	20170505_trans cript- parker- cross-2.pdf	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 40 (Cross Examination of Panel 2: Operations, Modeling, Water Quality, and Water Rights)	20170505_transcrip t- parker-cross- 2.pdf	В
SVWU	2017051 l_transcript- parker- recross.pdf	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 43 (Recross Examination of Panel 2: Operations, Modeling, Water Quality, and Water Rights)	2017051 l_transcript- parker- recross.pdf	В
SVWU	20170512_trans cript- bourez- direct.pdf	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 44 (Direct Testimony of SVWU Panel)	20170512_transcrip t- bourez-direct.pdf	В
SVWU	20170512_trans cript- bourez- cross.pdf	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 44 (Cross Examination of SVWU Panel)	20170512_transcrip t- bourez-cross.pdf	В
SVWU	20170518_trans cript- gohring- cross.pdf	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 44 (Cross Examination of ARWA Panel)	20170518_transcrip t- gohring-cross.pdf	В
SVWU		Excerpt from Hearing Transcript, Part 1 Surrebuttal, Vol (SVWU's Cross Examination of Erik Reyes and Nancy Parker)	transcript will be made available at: http://www.waterb oards. ca. gov/waterrights/wa ter_issu es/programs/bay_ delta/calif omia_waterfix/trans cripts .s html	В

Entity	File Name	Document Title	Exhibit Number	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D- Unsubstantiated)
SVWU		Excerpt from Hearing Transcript, Part 1 Surrebuttal, Vol (Direct Testimony of SVWU Panel)	transcript will be made available at: http://www.waterb oards. ca. gov/waterrights/wa ter_issu es/programs/bay_ delta/calif omia_waterfix/trans cripts .s html	В
SVWU		Excerpt from Hearing Transcript, Part 1 Surrebuttal, Vol (Cross Examination SVWU Panel)	transcript will be made available at: http://www.waterb oards. ca. gov/waterrights/wa ter_issu es/programs/bay_ delta/calif omia_waterfix/trans cripts .s html	В
SVWU	20170518_trans cript-gohring- cross	Excerpt from Hearing Transcript, Part 1 Rebuttal, Volume 45, May 18, 2017 (Page 99-113)	20170518_transcrip t-gohring-cross	В
Entity	File Name	Document Title	Exhibit Number	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D- Unsubstantiated)
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SCWA	Sacramento County 6-20-17 Final WaterFix EIR Additional Comment	Surrebuttal Testimony of Steffen Mehl. (Exh. SCW A- 200; WaterFix Change Petition Hearing)	SCWA-200	В
SCWA	Sacramento County 6-20-17 Final WaterFix EIR Additional Comment	Applied Groundwater Modeling, pp. 99-100, 2015, Anderson, Woessner and Hunt. (Exh. SCWA - 201; WaterFix Change Petition Hearing)	SCWA-201	В
SCWA	Sacramento County 6-20-17 Final WaterFix EIR Additional Comment	Guidelines for Evaluating Ground-Water Flow Models: U.S. Geological Survey Scientific Investigations Report 2004-5038, pp. 20-21. (Exh. SCWA-202; WaterFix Change Petition Hearing)	SCWA-202	В
SCWA	Sacramento County 6-20-17 Final WaterFix EIR Additional Comment	Techniques of Water-Resources Investigation, Book 6. U.S. Geological Survey, A modular three-dimensional finite-difference ground-water flow model, McDonald and Harbaugh, 1998, p. 2-23. (SCWA-203; WaterFix Change Petition Hearing)	SCWA-203	В
SCWA	Sacramento County 6-20-17 Final WaterFix EIR Additional Comment	A New Streamflow-Routing (SFR 1) Package to Simulate Stream Aquifer Interaction with MODFLOW-2004: U.S. Geological Survey Open File Report.2004-1042, pp. 40-41, Prudic, D.D., Konikow, L.F., and Banta, E.R. 2004. (SCWA- 204; WaterFix Change Petition Hearing)	SCWA-204	В

Entity	File Name	Document Title	Exhibit Number	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D- Unsubstantiated)
SCWA	Sacramento County 6-20-17 Final WaterFix EIR Additional Comment	Surrebuttal Power Point Presentation of Steffen Mehl. (SCW A - 205; WaterFix Change Petition Hearing)	SCWA-205	В
TCCA	not included as att	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 36 (Cross . Examination of Pane12. Operations, Modeling, Water Quality, and Water Rights)		В
TCCA	not included as att	Excerpt from Hearing Transcript, Part 1 Surrebuttal, Vol. (Cross Examination of Nancy Parker)		В
TCCA	20170427_trans cript-milligan- cross	Excerpt from Hearing Transcript, Part 1, April 27, 2017, Vol. 37 (Page 75-85)		В
Brentwo od	brentwood_118	Highlighted Testimony of Dr. Parviz Nader-Tehrani	brentwood_118	В
Brentwo od	brentwood_120	Surrebuttal Testimony of Dr. Susan Paulsen	brentwood_120	А, В
Brentwo od	brentwood_121	Technical Comments on Petitioners' WaterFix Rebuttal Testimony	brentwood_121	А, В
Brentwo od	brentwood_122	PowerPoint Presentation: Technical Comments on Petitioners' WaterFix Rebutal Testimony	brentwood_122	А, В
Brentwo od	20170511_trans cript-nader- tehrani- cross.pdf	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 43 (Cross Examination of Panel 2: Operations, Modeling, Water Quality, and Water Rights)	20170511_transcrip t-nader- tehrani- cross.pdf	В

Entity	File Name	Document Title	Exhibit Number	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D-
				Unsubstantiated)
Brentwo	20170512_trans	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 44	20170512_transcrip	В
od	cript-nader-	(Recross Examination of Panel 2: Operations, Modeling,	t-nader- tehrani-	
	tehrani-recross.	Water Quality, and Water Rights)	recross. pdf	
	pdf			
Brentwo		Excerpt from Hearing Transcript, Part 1 Surrebuttal, Vol	Transcript will be	В
od		(Direct Testimony of Dr. Susan Paulsen)	made available at:	
			http://www.waterb	
			oards.ca.	
			gov/waterrights/wa	
			ter_issue	
			s/programs/bay_del	
			ta/califor	
			nia_waterfix/transcr	
			ipts.sht ml.	
Brentwo		Excerpt from Hearing Transcript, Part 1 Surrebuttal, Vol	Transcript will be	В
od		(Cross Examination of Dr. Susan Paulsen)	made available at:	
			http://www.waterb	
			oards.ca.	
			gov/waterrights/wa	
			ter_issue	
			s/programs/bay_del	
			ta/califor	
			nia_waterfix/transcr	
			ipts.sht ml.	
NSWA	20170512_trans	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 44	20170512_transcrip	В
	criptarwa-	(Cross Examination of ARWA Panel)	tarwa- cross-Ipdf	
	cross-Ipdf pdf		pdf	

Entity	File Name	Document Title	Exhibit Number	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D- Unsubstantiated)
NSWA	20170518_trans cript-arwa- cross-2.pdf	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 45 (Cross Examination, Redirect Testimony, and Recross Examination of ARWA Panel)	20170518_transcrip t-arwa- cross-2.pdf	В
DFCG	dfcg_20	Written Testimony of Gilbert Cosio	dfcg_20	B, C
DFCG	dfcg_21	BDCP/WaterFix Final EIR/EIS, Appendix 6A	dfcg_21	А
DFCG	dfcg_22	USACE Engineer CircularUSACE Engineer Circular (EC) No. 1165-2-216, Policy and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 U.S.C. 408, June 21, 2016.	dfcg_22	A
DFCG	dfcg_23	USACE Engineer Circular (EC) No. 1165-2-214, Civil Works Review, December 15, 2012.	dfcg_23	А
DFCG	dfcg_24	Urban Flood Risk Reduction Program Guidelines	dfcg_24	A, B
DFCG	dfcg_25	USACE Engineering Manual (EM) No. 1110-2-1913, Design and Construction of Levees, April 30, 2000.	dfcg_25	А
DFCG	20170425_trans cript- bednarski-cross. pdf	Excerpt from Hearing Transcript, Part 1 Rebuttal, Vol. 36 (Cross Examination of Panel 1: Engineering and Groundwater)	20170425_transcrip t- bednarski-cross. pdf	В

Entity	File Name	Document Title	Exhibit Number	Categories
				(A-III EIR; D-III fleating;
				Unsubstantiated)
DFCG	Transcript will	Excerpt from Hearing Transcript, Part 1 Surrebuttal, Vol.	Transcript will be	В
	be made	(Direct Testimony of DFCG)	made available at:	
	available at:		http://www.waterb	
	http://www.wa		oards.ca.	
	terboards.ca.		gov/waterrights/wa	
	gov/waterrights		ter_issue	
	/water_issue		s/programs/bay_del	
	s/programs/ba		ta/califor	
	y_delta/califor		nia_waterfix/transcr	
	nia_waterfix/tra		ipts.sht ml.	
	nscripts.sht ml.			
DFCG	Transcript will	Excerpt from Hearing Transcript, Part 1 Surrebuttal, Vol	Transcript will be	В
	be made	(Cross Examination of DFCG)	made available at:	
	available at:		http://www.waterb	
	http://www.wa		oards.ca.	
	terboards.ca.		gov/waterrights/wa	
	gov/waterrights		ter_issue	
	/water_issue		s/programs/bay_del	
	s/programs/ba		ta/califor	
	y_delta/califor		nia_waterfix/transcr	
	nia_waterfix/tra		ipts.sht ml.	
	nscripts.sht ml.			
STCDA	testimony of	SUR-REBUTTAL TESTIMONY OF MICHAEL T. BRETT, Ph.D.	SJC-200	В
	Tom Burke	CONCERNING HARMFUL ALGAL BLOOMS RESULTING FROM		
		THE CALIFORNIA WATERFIX		
1	1		1	

Entity	File Name	Document Title	Exhibit Number	Categories (A-In EIR; B-In Hearing; C-Not a CEQA issue; D- Unsubstantiated)
STCDA	scda_1 aquatic science peer review copy	Independent Review Panel Report for the 2016 California WaterFix Aquatic Science Peer Review	SCDA-1	В
STCDA	SCDA Comments 7.9.2017	SCDA-3, Handmade graph	SCDA-3	В
STCDA	SCDA Comments 7.9.2017	SCDA-2, 8/19/2016 printout from Sacramento river flow	SCDA-2	B, D