Long-Term Operation – Environmental Impact Statement

Appendix AD – Responses to Comments

November 2024

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Contents

Tables

Acronyms and Abbreviations

Term	Definition
Bay-Delta	San Francisco Bay/Sacramento–San Joaquin Delta
Bay-Delta Plan	Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta Estuary
C.F.R.	Code of Federal Regulations
CDFW	California Department of Fish and Wildlife
CEQ	Council of Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
cfs	cubic feet per second
CMIP5	Coupled Model Intercomparison Project Phase 5
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
D-1641	State Water Resources Control Board Water Right Decision 1641
Delta	Sacramento–San Joaquin Delta
DWR	California Department of Water Resources
EIR	environmental impact report
EIS	2021 Consultation on the Long-Term Operation of the Central Valley Project and State Water Project Environmental Impact Statement
ESA	Endangered Species Act
FR	Federal Register
Initial Alternatives Report	Reclamation's Long-Term Operations: Initial Alternatives Report
IOP	interim operations plan
km	kilometers
LTO	Long-Term Operation
NEPA	National Environmental Policy Act
NGO	nongovernmental organization
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NOP	Notice of Preparation
OMR	Old and Middle River
psu	practical salinity units
Reclamation	United States Department of the Interior, Bureau of Reclamation

Term	Definition
ROD	Record of Decision
SIT	Science Integration Team
SMSCG	Suisun Marsh Salinity Control Gate
Southern Resident	Southern Resident killer whale
STARS	Survival, Travel Time, and Routing Simulation Model
SWP	State Water Project
SWRCB	State Water Resources Control Board
TDM	temperature dependent mortality
TRD	Trinity River Division
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VA	Voluntary Agreement
WIIN Act	Water Infrastructure Improvements for the Nation Act

Appendix AD Response to Comments

Section AD.1 Introduction and Approach to Responses to Comments

This appendix—Appendix AD, *Responses to Comments*—contains responses to comments received on the Draft Environmental Impact Statement (EIS). Prior to acting on the Final EIS and the proposed project, the United States Department of the Interior, Bureau of Reclamation (Reclamation) will consider the responses to comments in Appendix AD, along with the main body and other appendices, all of which are part of the Final EIS. This section describes the public participation and comments received on the Draft EIS; the general approach to responding to comments based on the format and types of comments received; the format, content, and organization of responses to comments; the terminology used in this appendix (Appendix AD); and the modifications contained in the main body of the EIS (Chapters 1 through 23) and other appendices.

AD.1.1 Public Participation and Comments Received on the Final EIS

The Draft EIS was released for public review on July 26, 2024, for a 45-day public review period that ended on September 9, 2024. Reclamation received approximately 91 letters amounting to about 1,077 comments, including those from federal, state, and local agencies; Tribes; elected officials; interested parties; and members of the public. Reclamation also conducted three in-person public meetings and three virtual public meetings to receive oral comments on the Draft EIS.

AD.1.2 Regulatory Context

When proposing to undertake or approve a discretionary project, federal agencies must comply with the requirements of the National Environmental Policy Act (NEPA). NEPA applies when a federal agency develops a proposal to take a major federal action. NEPA requires that an EIS "be concise, clear, and to the point, and shall be supported by evidence that the agency has made the necessary environmental analyses" (Council on Environmental Quality NEPA Regulations, 40 Code of Federal Regulations [C.F.R.] § 1502.1). The purpose of public review of the Draft EIS is to allow for continued public involvement in the process. This process gives the public an opportunity to make the agency aware of, and to consider, substantive comments provided during the public comment period.

The NEPA implementing regulations have undergone revisions. Updates became effective on May 20, 2022, and in July 2024. Projects with Notices of Intent (NOIs) published after the July 2024 regulations are subject to those regulations. Because the NOI for this EIS was published in 2022, this EIS generally adheres to the regulations that became effective on May 20, 2022. At the same time, agencies maintain discretion to apply the July 2024 NEPA regulations; thus, Reclamation aimed to make the analysis in the Draft EIS generally consistent with the intent of the new implementing regulations that took effect in July 2024, as they relate to impact descriptions and environmental justice.

AD.1.3 Approach

The responses to comments contained in Appendix AD address substantive comments (40 C.F.R. § 1503.4[a]). Addressing substantive comments typically requires clarifications of points contained in the Draft EIS released in July 2024. Lead agencies are not obligated to undertake every suggestion given them, provided that the agency responds to significant environmental issues and makes a good faith effort at disclosure in a reasoned way. Reclamation is not required to respond to comments unrelated or not germane to the alternatives or the evaluation of potential environmental impacts contained in the EIS (40 C.F.R. § 1503.4[a][5]).

Reclamation has made a good faith effort to ensure that all comments were identified, considered, and responded to in the Final EIS—in this appendix. The Final EIS presents all of the comments received on the Draft EIS during the public review period, along with responses to comments. The following summarizes the approach Reclamation took when identifying, considering, and responding to the comments received.

- Many comments received were related to the Draft EIS but were very general in nature. These general comments were reviewed and considered but may not have received unique, individual responses. While Reclamation is not required to respond to non-substantive comments, Reclamation has provided general responses to those comments in Standard Response 1, *Responses to General Comments and Comments about Public Outreach.*
- Reclamation provided individual responses to information contained in an *attachment* to a comment letter if the attachment commented on substantive issues related to the environmental analysis contained in the draft EIS. If the attachment did not meet this criterion, no specific response was provided, although the attachment was reviewed and Reclamation provided additional information in the response to assist the commenter (e.g., reference to a Standard Response). Attachments to comment letters are typically indicated using brackets [ ] in the comment response tables.
- Each of the public meetings was transcribed by a court reporter, and the transcript was reviewed and is included in the responses to comments. Individual public speakers are identified, and their transcriptions are classified as unique letters and responded to in the response to comments. In some cases, the transcripts were not clearly understood, likely due to the dynamic and conversational nature of oral comments. Every attempt was made to understand the comments in order to provide a response. However, Reclamation cannot infer the meaning or intent of comments.
- Some presenters and speakers at the three public meetings also submitted written comments via hard copy letters or emails. In an effort to be thorough, Reclamation reviewed all comments from a single commenter, even if that commenter provided comments both orally (captured in a transcript) and in a written letter. Reclamation reviewed and responded to all unique comments identified in transcripts and written materials and presentations provided at the time the oral comments were given even if they are from the same commenter. In this manner, Reclamation completely reviewed and responded to all comments from the same commenter even if they were made at different times during the public review period and in different formats.

- Reclamation reviewed the comments in the exact form they were provided by commenters.
- During the process of reviewing and responding to comments on the Draft EIS, multiple clarifications were made to the EIS. These changes did not result in changes to the types of impacts identified or the magnitude of potential impacts disclosed. Nor did these clarifications result in significant, new information that would require Reclamation to recirculate the EIS for public review.

AD.1.4 Organization of Appendix AD

All chapter references that appear in Appendix AD are Final EIS chapter numbers and references, unless otherwise noted. Appendix AD of the Final EIS is organized as follows.

- Section AD.1, *Introduction and Approach to Responses to Comments* (this section), contains a description of the public participation and public comments received on the Draft EIS; the approach to reviewing and responding to comments; the format, content, and organization of the responses to comments; and the terminology used in this appendix (Appendix AD).
- Section AD.2, *Indices of Commenters*, provides a list of the comment letter numbers and titles of commenters, when provided, from federal agencies and elected officials; Tribal governments; state agencies and elected officials; local agencies and elected officials; non-governmental organizations; and members of the public, form plus letters, and form letter commenters. These indices are organized by organization, commenter name, and letter number. Readers should use these indices to identify the letter number or numbers associated with their submissions and then find the comments and responses in the comment response tables that are contained in Section AD.4, *Responses to Comments*. Indices are organized by commenter type as described in Table AD.1-1. This section also presents the original comment letters received on the Final EIS. Each comment letter is numbered for each letter or email, corresponding to the comment letter numbers presented in the indices in Section AD.2, *Indices of Commenters*, and tabular format in Section AD.4, *Responses to Comments*.

Table AD.1-1. Summary of Indices

Index No.	Commenter Type
1	Federal Agencies, Federal Elected Officials, and Tribal Governments
2	State Agencies and Elected Officials
3	Local Agencies and Elected Officials
4	Non-Governmental Organizations
5	Individuals
6	Primary Form Submissions
7	Form Plus Submissions

- Section AD.3, *Standard Responses*, contains an introduction with a summary table identifying 11 Standard Responses and a general description of the topics addressed by each Standard Response. The Draft EIS was the subject of multiple comments on substantially similar topics or reoccurring comment themes or issues. The Standard Responses were prepared to provide responses to these frequently raised topics, themes, or issues to avoid repetition and to provide a comprehensive response. Each Standard Response provides a brief overview of the topics, issues, or themes the Standard Response addresses, a table of contents of the specific subtopics, followed by the responses. The individual responses to comments reference the Standard Responses as appropriate. Standard Responses are presented in Section AD.3 (before the presentation of responses to individual comments in Section AD.4, *Responses to Comments*) to familiarize readers with some of the most commonly raised topics and responses. References for each Standard Response are contained at the end of the Standard Response.
- Section AD.4, *Responses to Comments*, presents comments and responses in a tabular format organized in chronological numeric order. Misspellings, grammatical errors, or unintelligible writings in the comment field of these tables are the accurate representation of the comment provided to Reclamation. Comment letters, emails, and other written or transcribed comments were assigned an identifying letter number as they were received and processed by Reclamation. Section AD.4 also provides a list of unique references cited in the responses to individual public comments that are not cited to in either the main body of the EIS, the appendices, or Appendix AD, Section AD.3, *Standard Responses*, of the Final EIS.[1]

Section AD.2 Indices of Commenters

The following indices list the comment letter numbers and titles of commenters, when provided, from federal agencies and elected officials; Tribal governments; state agencies and elected officials; local agencies and elected officials; non-governmental organizations; and members of the public, and include form plus letters and form letter commenters. These indices are organized by organization, commenter name, and letter number. Readers should use these indices to identify the letter number or numbers associated with their submissions and then find the comments and responses in the comment response tables that are contained in Appendix AD, Section AD.4, *Responses to Comments*. Indices are organized by commenter type as described in Table AD.2-1. If a blank cell is shown in the table, the information was not provided, not applicable, or was not legible. Skipped letter numbers are an artifact of letter processing and are not an indication of missing information.

[1] References in the main body of the Draft EIS are contained in Appendix B, *References*, and the references for the appendices are contained at the end of each appendix and have been updated to reflect changes made in the chapters or appendix, as appropriate, in responding to comments.

Table AD.2-1. Summary of Indices

Index No	Commenter Type
1	Federal Agencies, Federal Elected Officials, and Tribal Governments
2	State Agencies and Elected Officials
3	Local Agencies and Elected Officials
4	Non-Governmental Organizations
5	Individuals
6	Primary Form Submissions
7	Form Plus Submissions

Table AD.2-2. Index 1: Federal Agencies, Federal Elected Officials, and Tribal Governments

Letter No.	First Name	Last Name	Title	Organization Name
10	Ryan	Jackson	Chairman	Hoopa Valley Tribe
30	Merrick	Burden	Executive Director	Pacific Fishery Management Council
53	Mike	Orcutt		Hoopa Valley Tribe
56	Gabriela	Baeza-Castaneda	Acting Manager, Region 9	U.S. Environmental Protection
75	Robert D.	Delizo	Resources and Scheduling Manager	Western Area Power Administration

Table AD.2-3. Index 2: State Agencies and Elected Officials

Letter No.	First Name	Last Name	Title	Organization Name
67	Dianne	Riddle	Assistant Deputy Director	State Water Resources Control Board – Division of Water Rights
92	Mike	Avina	Senior Environmental Planner	Delta Protection Commission

Table AD.2-4. Index 3: Local Agencies and Elected Officials

Letter No.	First Name	Last Name	Title	Organization Name
2	Federico	Barajas	Executive Director	San Luis & Delta Mendota Water Authority
5	Casey	Shorrock	Attorney for	County of Sacramento
5	Casey	Shorrock	Attorney for	County of Sacramento Water Agency
5	Casey	Shorrock	Attorney for	City of Stockton
5	Casey	Shorrock	Attorney for	Sacramento Area Sewer District

Letter No.	First Name	Last Name	Title	Organization Name
12	Frederico	Barajas	Executive Director	San Luis Delta Mendota Water Authority
13	Lon	Martin	General Manager	San Luis Water District
18	Josh	Watkins	Water Utility Manager	City of Redding
40	Ricardo	Ortega	General Manager	Grassland Water District
46	Randy	Howard	General Manager	Northern California Power Agency
61	Dante	Nomellini Sr.	Attorney for	Central Delta Water Agency
63	Aaron	Fukuda	General Manager	Tulare Irrigation District
63	Aaron	Fukuda	Interim General Manager	Mid-Kaweah Groundwater Sustainability Agency
64	Allison	Febbo	General Manager	Westlands Water District
64	Frederico	Barajas	Executive Director	San Luis & Delta-Mendota Water Authority
64	Jason	Phillips	CEO	Friant Water Authority
64	Jennifer	Pierre	General Manager	State Water Contractors
65	Jennifer	Pierre	General Manger	State Water Contractors
66	Deanna	Sereno	Water and Policy Manager	Contra Costa Water District
70	Michael	Vergara	General Counsel to	Byron-Bethany Irrigation District
76	Meredith	Nikkel	Attorney for	Tehama-Colusa Water Authority
78	Dante	Nomellini Jr.	Attorney for	Central Delta Water Agency
80	John	Wiersma	General Manager	Henry Miller Reclamation District 2131
80	J. Scott	Petersen	Director of Water Policy	San Luis & Delta-Mendota Water Authority
80	Allison	Febbo	General Manager	Westland's Water District
80	Anthea	Hansen	General Manager	Del Puerto Water District
80	John	Wiersma	General Manager	Henry Miller Reclamation District
80	Chris	White	Executive Director/Secretary	San Joaquin River Exchange Contract Water Authority
87	Kelley	Taber	Attorney for	City of Stockton
90	Jason	Phillips	CEO	Friant Water Authority

Table AD.2-5. Index 4: Non-Governmental Organizations

Letter No.	First Name	Last Name	Title	Organization Name
1	Erin	Wooley	Senior Policy Advisor	Sierra Club California
1	Howard	Penn	Executive Director	Planning and Conservation League
1	Connor	Everts	Facilitator	Environmental Water Caucus
1	John	Buse	Senior Counsel	Center for Biological Diversity
1	Carolee	Krieger	Executive Director	California Water Impact Networks
1	Barbara	Vlamis	Executive Director	AquAlliance
1	Barbara	Barrigan-Parrilla	Executive Director	Restore the Delta
1	Jann	Dorman	NA	Friends of the River
3	Regina	Chichizola	Executive Director	Save California Salmon
16	Trey	Hiller	NA	Battle Creek Watershed Conservancy
17	Ashley	Overhouse	NA	Defenders of Wildlife
19	Francis	Mendoza	Land and Water Justice Manager	Save California Salmon
20	Kasil	Willie	Staff Attorney	Save California Salmon
21	Regina	Chichizola	Executive Director	Save California Salmon
22	Manisha	Priyadarshini		Program Earth
29	Thomas	Cannon		California Water Impact Network, California Sportfishing Protection Alliance
36	Shankar	Parvathinathan	Advisor to	California Water Impact Network
41	Brenden	Wilce	Conservation Program Coordinator	California Native Plant Society
50	Mark	Rockwell	Vice President	Northern California Council, Fly Fishers International
51	Bob	Wright	Counsel	Sierra Club California
51	Erin	Wooley	Senior Policy Advisor	Sierra Club California
51	Howard	Penn	Executive Director	Planning and Conservation League
51	Connor	Everts	Facilitator	Environmental Water Caucus
51	John	Buse	Senior Counsel	Center for Biological Diversity

Letter No.	First Name	Last Name	Title	Organization Name
51	Carolee	Krieger	Executive Director	California Water Impact Networks
51	Barbara	Vlamis	Executive Director	AquAlliance
54	Michelle	Banonis	Manager of Strategic Affairs	Regional Water Authority
55	Stephanie	Tidwell	Engagement Director	Water Climate Trust
57	Cynthia	Manzo	NA	JEM Ranches
58	Christine	Gemperle	NA	Gemperle Orchards
59	Alexandra	Biering	Senior Policy Advisor	California Farm Bureau
68	Jann	Dorman	NA	Friends of the River
68	Jonathan	Rosenfield	NA	San Francisco Baykeeper
68	Scott	Artis	NA	Golden State Salmon Association
68	Chris	Shutes	NA	California Sportfishing Alliance
68	Regina	Chichizola	NA	Save California Salmon
68	Carolee	Krieger	NA	California Water Impact Network
68	Barbarba	Barrigan-Parrilla	NA	Restore the Delta
68	Lisa	Damrosch	NA	Pacific Coast Federation of Fishermen’s Association
68	Glen	Spain	NA	Institute for Fisheries Resources
68	Konrad	Fisher	NA	Water Climate Trust
69	Lisa	Damrosch	Executive Director	Pacific Coast Federation Fishermen's Association
71	Howard	Penn	Executive Director	Planning and Conservation League
71	John	Buse	Senior Counsel	Center for Biological Diversity
71	Glen	Spain	NW Regional Director & General Counsel	Pacific Coast Federation of Fishermen Association
71	Glen	Spain	NW Regional Director & General Counsel	Institute for Fisheries Resources
71	Frank	Egger	President	North Coast Rivers Alliance
71	Carolee	Krieger	Executive Director	California Water Impact Network
71	Barbara	Vlamis	Executive Director	AquAlliance
71	Mark	Rockwell	Vice President Conservation	Northern California Council, Fly Fishers International
71	Stephen	Green	President	Save the American River Association

Letter No.	First Name	Last Name	Title	Organization Name
71	Erin	Woolley	Senior Policy Strategist	Sierra Club California
71	Connor	Everts	Executive Director	Southern California Watershed Alliance
72	Eddie	Ocampo	Chair	Water Blueprint for San Joaquin Valley
72	Deanna	Jackson	Executive Director	Tri-County Water Authority
72	Priscilla	Rodriguez	Assistant Vice President	Western agricultural Processors Association
72	Priscilla	Rodriguez	Assistant Vice President	California Cotton Ginners and Growers Association
72	Dave	Puglia	President & CEO	Western Growers Association
72	Breanne	Vanderberg	Executive Director	Merced County Farm Bureau
72	Emily	Rooney	President	Agricultural Council of California
72	Pete	Kappelman	Senior Vice President	Land O'Lakes Inc.
72	Lynee	McBride	Executive Director	California Dairy Campaign
72	Christina	Beckstead	Executive Director	Madera County Farm Bureau
72	Cornell	Kasbergen	Board Chairman	Milkers Producers Council
72	Mike	Wade	Executive Director	California Farm Water Coalition
72	Casy	Creamer	President & CEO	California Citrus Mutual
72	Robert	Verloop	Executive Director/CEO	California Walnut Commission
72	Manuel	Cunha Jr.	NA	Nisei Farmers League
72	Renee	Pinel	President/CEO	Western Plant Health Association
72	Will	Scott Jr.	NA	African American Farmers Association
72	Daniel	Hartwig	President	California Fresh Fruit Association
72	Zachary	Fraser	President & CEO	American Pistachio Growers
72	Darrin	Monteiro	Senior Vice President, Sustainability and Member Relations	California Dairies, Inc.
72	Kirti	Mutatkar	President/CEO	United Ag.
72	Jack	Rice	NA	Madera Ag. Water Association
72	Rachel	Glauser	NA	Delta View Water Association
72	Tricia	Stever Blatter	Executive Director	Tulare County Farm Bureau
73	Leslie	James	Executive Director	Colorado River Energy Distributors Association

Letter No.	First Name	Last Name	Title	Organization Name
74	Carolee	Krieger	President and Executive Director	California Water Impact Network
74	Max	Gomberg	Secretary	California Water Impact Network
77	Murphy	Sabatino		M & M Properties
79	Meredith E.	Nikkel	Attorney for	Sacramento River Settlement Contractors
79	Brittany K.	Johnson	Attorney for	Sacramento River Settlement Contractors
86	Ashley	Overhouse	Water Policy Advisor	Defenders of Wildlife
91	Roger	Moore	Attorney for	California Water Impact Network

The following index includes comments submitted by individuals. Responses to comments are found in Section AD.4, *Responses to Comments*.

Table AD.2-6. Index 5: Individuals

Letter No.	First Name	Last Name	Title	Organization Name
4	Jason	Thatcher		
6	Kathleen	Roche		
7	Francis	Coats		
8	Sangeeta	Sarkar		
9	Stephen	Doyle		
11	Bill	Diedrich		
14	Jason	Thatcher		
15	Chelsea	Rios		
23	Deborah	Filipelli		
24	Janet	Smarr		
25	Patrick	Tierney		
33	Elektra	Mathews-Novelli		
34	Harold	Sloane		
35	Danielle	Vigil-Masten		
37	Kalina	Cruz		
39	Henry	Roller		
44	Bill	Brattain		
45	Martha	Tritt		
47	Jullie	McKee		

Letter No.	First Name	Last Name	Title	Organization Name
60	Peter	Spaulding		
62	Beth	Shwehr		
81	Candice	Heinz		
84	Richard	Ely		

Table AD.2-7. Index 6: Primary Form Submissions and Petition Signatories

Letter No.	First Name	Last Name	Title	Organization Name	Form Number
26	Alex	Robinson			1
57	Cynthia	Manzo	NA	JEM Ranches	2

Table AD.2-8. Index 7: Form Plus Submissions and Petition Signatories

Letter No.	First Name	Last Name	Title	Organization Name	Form Number
27	Barbara	Barrigan-Parrilla	Executive Director	Restore the Delta	1
28	Robin	Durston			1
31	Terence	Barton			1
32	Charles	Hammerstad			1
38	Gary	Falxa			1
42	Jean	King			1
43	Jean	Riehl			1
48	Nora	Marsh			1
49	Lowell	Ashbaugh			1
50	Mark	Rockwell	Vice President	Northern California Council, Fly Fishers International	1
58	Christine	Gemperle		Gemperle Orchards	2
82	Richard	Garcia-Kennedy			1
83	Matt	Richardson			1
85	Bruce	Hilbach-Barger			1
89	Daniel	Bays			2

Section AD.3 Standard Responses

This section provides Standard Responses to comments made on the Draft EIS. Standard Responses were crafted for comments that were typically made multiple times by different agencies, organizations, entities, or members of the public or were prepared because multiple but related subtopics could be addressed by one topical Standard Response. Table AD.3-1 summarizes the Standard Response numbers, titles, and topics covered.

If a Standard Response is referenced in a comment response table for a particular individual comment in Appendix AD, Section AD.4, *Responses to Comments*, the response to that particular comment is found within the identified Standard Response.

Table AD.3-1. Summary of Standard Responses

Standard Response No	Standard Response Title	Topics Addressed
1	*Responses to General Comments*	• Adequacy of public outreach • General support or opposition
2	*Related Regulatory Processes*	• 2019 Biological Opinions • Current Biological Assessment and Biological Opinion process • Timing and preparation of the Biological Assessment, the issuance of the Biological Opinion, and the NEPA review processes applicable to the State Water Project LTO
3	*Baseline and No Action*	• No Action Alternative (clarification regarding what is included in the No Action Alternative) • Use of the No Action Alternative as baseline
4	*Alternatives Formulation*	• Formulation of alternatives • Level of detail provided in the descriptions of each alternative • Purpose and need • Range of alternatives • Feasibility of alternatives • Selection of preferred alternative
5	*Adequacy of Analysis and Mitigation*	• Adequacy of analysis • Cumulative analysis (approach and rationale for cumulative impact analysis) • Mitigation (applicability of mitigation proposed in the EIS and the process for adopting those measures) • Lack of need for supplementation of the EIS

Standard Response No	Standard Response Title	Topics Addressed
6	*Hydrologic Modeling and Surface Water Resources*	• Concerns regarding the use of CalSim 3 and how results from the model were used to support the environmental analysis • Concerns regarding how drought years and drought periods were addressed in the modeling • Use of HEC-5Q and DSM2 to support the environmental analysis • General concerns with commonly perceived flows with the models
7	*Aquatic Resources*	• Aquatic analysis, including the level of detail requested by commenters, additional modeling and analysis, and the use of quantitative versus qualitative analysis • Application of modeling results for evaluation of potential impacts on aquatic resources, including uncertainty and process behind impact descriptors • Evaluation of project impacts, including potential changes to fall-run Chinook salmon abundance and mitigation • Sacramento River seasonal operations, spring pulse flows, and coldwater pool management
8	*Trinity River Division*	• Consideration of effects on Trinity River in LTO EIS • Evaluation of a Proposed Action and associated NEPA compliance for the Trinity River Division
9	*Climate Change*	• Consideration of climate change in the EIS • Climate change–based alternative
10	*Voluntary Agreements*	• Definition of Voluntary Agreements • Accounting for Voluntary Agreements • Uncertainty associated with Voluntary Agreements • Effectiveness and effects of Voluntary Agreements
11	*Summer Fall Habitat Action*	• Recent science developments on summer fall habitat action • Summer fall habitat action characterization in the Final EIS alternatives

AD.3.1 Standard Response 1: Responses to General Comments and Comments about Public Outreach

AD.3.1.1 Overview

The United States Department of the Interior, Bureau of Reclamation (Reclamation) has the responsibility to comply with and follow National Environmental Policy Act (NEPA) requirements. The purpose of an environmental impact statement is to ensure decision makers consider the environmental effects of an action in decision making (40 Code of Federal Regulations [C.F.R.] § 1502.1). Reclamation will consider the record of this proceeding, which includes all comments made and received during the public meetings and comment period.

The purpose of each response to a comment on the draft version of the *2021 Consultation on the Long-Term Operation of the Central Valley Project and State Water Project Environmental Impact Statement* (EIS) is for the lead agency to address the substantive environmental issue(s) that may be raised by each comment. According to the regulations, possible responses include modifying the alternatives, including the Proposed Action; developing and evaluating new alternatives; making factual corrections; and explaining why the comments do not warrant further agency response (40 C.F.R. § 1503.4[a]).

Reclamation reviewed all comments submitted on the Draft EIS and developed this Standard Response to address comments that do not raise substantive environmental issues or that are beyond the scope of the analysis required by NEPA for an EIS. This Standard Response also addresses comments regarding the public outreach process and public comment period for the Draft EIS. Topics that do not raise substantive environmental issues include the following.

- Opposition or support of the Proposed Action or the alternatives evaluated in the EIS.
- Statements of opinion without (1) providing rationale or (2) raising any issues related to the adequacy of the environmental impact analysis.
- Additional recommendations beyond the scope of the Draft EIS.
- Paraphrased or quoted material directly from the Draft EIS that is not associated with a comment and is merely reproduced without context.

Reclamation is not responding to comments on these topics because they do not speak to the adequacy of the alternatives in the EIS, the adequacy of the analyses in the EIS, or the overall sufficiency of the EIS. Nonetheless, these comments are included in the record for consideration by decision makers. Comments within the scope of NEPA are addressed either in topic-specific Standard Responses or in the individual responses in Appendix AD, *Responses to Comments*.

Comments identified as general in nature were often related to additional subjects addressed in other Standard Responses. Accordingly, this Standard Response directs readers to other Standard Responses when the following subject matter areas are discussed.

- **Supplementation of the EIS:** Commenters requested that the Draft EIS be revised or supplemented and then distributed once more for public review. Responses to these concerns are addressed in Standard Response 5, *Adequacy of Analysis and Mitigation*.

- **NEPA and Other Regulatory Processes:** Commenters raised concerns that relate to regulatory processes other than NEPA, including California's environmental review process for operation of the State Water Project, as well as concerns about how the Endangered Species Act and NEPA processes coincide. Responses to these concerns are addressed in Standard Response 2, *Related Regulatory Processes*.

- **Purpose and Need:** Commenters raised concerns that relate to the purpose and need of the Proposed Action. Responses to these concerns are addressed in Standard Response 4, *Alternatives Formulation*.

- **Development of Action Alternatives:** Commenters raised concerns about the range and appropriateness of the alternatives evaluated, the methods for selecting the alternatives, and the level of detail provided for each alternative. Responses to these concerns are addressed in Standard Response 4, *Alternatives Formulation*. Additionally, Standard Response 4 provides information regarding refinements made to the Proposed Action since the release of the Draft EIS.

- **Adequacy of Analysis:** Commenters raised concerns regarding the overall adequacy of the analysis contained in the EIS and the cumulative analysis and mitigation. Responses to these concerns are addressed in Standard Response 5, *Adequacy of Analysis and Mitigation*.

- **Aquatic Resources:** Commenters raised concerns regarding the adequacy of the aquatics analysis, the application of modeling results to evaluate potential impacts on aquatic resources, and the evaluation of impacts to aquatic resources. Responses to these concerns are provided in Standard Response 7, *Aquatic Resources*.

- **Hydrologic Modeling:** Commenters raised concerns about the results of the hydrologic modeling used in the EIS's analysis and the appropriate use of modeling for the purposes of comparative analysis. Responses to these concerns are addressed in Standard Response 6, *Hydrologic Modeling*.

- **Trinity River Division:** Commenters raised concerns about the future operations of the Trinity River and related environmental review processes. Responses to these concerns are addressed in Standard Response 8, *Trinity River Division*.

- **Climate Change:** Commenters raised concerns regarding the incorporation of climate change in the analysis provided in the EIS. Responses to these concerns are addressed in Standard Response 9, *Climate Change*.

- **Voluntary Agreements:** Commenters raised concerns about the inclusion of Voluntary Agreements in the action alternatives and how they are characterized in the analysis provided in the EIS. Responses to these concerns are addressed in Standard Response 10, *Voluntary Agreements*.

- **Fall Delta Outflow:** Commenters raised concerns on about improving Delta Smelt habitat in an Above Normal or Wet Year by increasing Delta outflow during the fall. Responses to these concerns are addressed in Standard Response 11, *Summer Fall Habitat Action*.

AD.3.1.2 Adequacy of Public Outreach

This section addresses concerns raised regarding the Draft EIS public review and comment process.

Adequacy of Public Outreach, Availability of the Draft EIS, and Public Meetings

Some commenters suggested that the notification process for the Draft EIS and the public meetings were insufficient and did not meet the requirements under 40 C.F.R. Section 1506.10(d). In compliance with 40 C.F.R. Section 1506.10(a), the Draft EIS was filed with the Environmental Protection Agency; the Environmental Protection Agency then published the Notice of Availability in the *Federal Register* on July 26, 2024, and notifications regarding the availability of the Draft EIS for review were distributed to the project email list. Reclamation also issued a press release announcing the availability of the Draft EIS for review and comment. The Draft EIS was made available on Reclamation's Long-Term Operation (LTO) website.[2]

Three in-person and three virtual public meetings were held to solicit public comments on the Draft EIS (Table AD.3-2).

Table AD.3-2. Public Meeting Dates and Locations

Meeting Date	Meeting Location
Wednesday, August 7, 2024, 6–8 p.m.	In-person, Los Banos Community Center's Grand Room
Tuesday, August 13, 2024, 6–8 p.m.	In-person, Redding Veterans Memorial Hall
Thursday, August 15, 2024, 12–2 p.m.	Virtual via Zoom
Tuesday, August 20, 2024, 6–8 p.m.	In-person, Sacramento Capitol Event Center (M.A.Y. Building)
Thursday, August 22, 2024, 6–8 p.m.	Virtual via Zoom
Thursday, September 5, 2024, 3–5 p.m.	Virtual via Zoom

The Council for Environmental Quality's (CEQ's) NEPA Implementing Regulations (40 C.F.R. § 1506.6[d]) state that agencies shall "Hold or sponsor public hearings, public meetings, or other opportunities for public involvement whenever appropriate or in accordance with statutory requirements applicable to the agency. Agencies may conduct public hearings and public meetings by means of electronic communication except where another format is required by law. When selecting appropriate methods for public involvement, agencies shall consider the ability of affected entities to access electronic media."

The public meeting locations were consistent with those held during scoping for the EIS and were based on the best opportunities to reach those potentially interested in the Draft EIS. Meeting locations were selected from venues throughout the Central Valley Project service area that were accessible and had capacity for at least 100 meeting attendees. Spanish translation services were made available to attendees at the Los Banos meeting and the second virtual meeting, and a virtual audio presentation of the informational posters presented at the in-person

[2] The project website is at https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=54661.

public meetings was provided for those unable to attend. At all of the public meetings, handouts—including the handout of project information, comment cards, and meeting agendas—were provided in Spanish. Paired with the three virtual meetings accessible across the state and beyond, these meetings meet the spirit of the regulation to consider the ability of affected entities to access electronic media and ensure accessible options. Additionally, Reclamation held quarterly meetings pursuant to the WIIN Act and monthly meetings for interested parties to present on NEPA status and next steps during preparation of the EIS.

The distribution lists for the project are also continually updated to reflect the most current contact information provided by the public and interested parties so that they may receive timely notifications regarding project milestones.

Duration of Comment Period

Multiple commenters stated that the duration for the comment period was insufficient for review given the amount of material contained in the Draft EIS and requested an extension of the comment period. The CEQ's NEPA Implementing Regulations require a minimum of 45 days for public review and comment on an EIS (40 C.F.R. § 1506.11[d]). Reclamation circulated the Draft EIS for public review for 45 days (July 26, 2024, to September 9, 2024). The duration of the comment period therefore complied with NEPA requirements. Over the course of developing the Draft EIS, Reclamation also conducted extensive outreach to help inform the public, including two separate monthly meetings for interested parties and quarterly WIIN Act meetings. Reclamation staff and management remain available throughout the environmental review process to coordinate with interested parties and the public.

Scoping Process

Some commenters noted that a scoping report was not included as an attachment to the Draft EIS. Reclamation conducted an extensive scoping process in 2022. Chapter 1, *Introduction*, describes the public meetings that took place to gather comments and summarizes the information commenters submitted during the scoping process, including issues to be considered in the preparation of the Draft EIS. The scoping report that was prepared is cited in Chapter 3, *Alternatives*, and included as a reference in the Draft EIS (Bureau of Reclamation 2022b); additionally, the full scoping report was published on Reclamation's website.[3] Screened scoping comments were included in Reclamation's *Long-Term Operations: Initial Alternatives* report (Initial Alternatives Report), released in September 2022 (Bureau of Reclamation 2022a).[4]

[3] Reclamation's 2022 *Public Scoping Report* is available at https://www.usbr.gov/mp/bdo/docs/lto-scoping-report-2022.pdf.

[4] Reclamation's 2022 *Initial Alternatives* report is available at https://www.usbr.gov/mp/bdo/lto/index.html.

Page Limits and Document Structure

NEPA regulations limit the number of pages (40 CFR section 1502.7) and favors the use of appendices for technical information that supports the analysis. 40 CFR section 1502.10(a) states that, "Agencies should use the following standard format for environmental impact statements unless the agency determines a "standard format for environmental impact statements unless the agency determines that there is a more effective format for communication:

1. Cover.
2. Summary.
3. Table of contents.
4. Purpose of and need for action.
5. Alternatives including the proposed action (sections 102(2)(C)(iii) and 102(2)(E) of NEPA).
6. Affected environment and environmental consequences (especially sections 102(2)(C)(i), (ii), (iv), and (v) of NEPA).
7. Submitted alternatives, information, and analyses.
8. List of preparers.
9. Appendices (if any).

Section 1502.10(b) states, *"*If an agency uses a different format, it shall include paragraphs (a)(1) through (8) of this section, as further described in §§ 1502.11 through 1502.19, in any appropriate format.*"*

The Draft EIS is organized as follows, containing the required content as outlined in the Code of Federal Regulations: Cover, Table of Contents, Chapter 0: Executive Summary; Chapter 1: Introduction, Chapter 2: Purpose and Need, Chapter 3: Draft Alternatives, Chapters 4 through 22: Affected Environment and Environmental Consequences by resource area, appendices. Appendix A contains the list of preparers; Appendix B contains EIS References; Appendix C contains Facilities Descriptions; Appendix D contains Mitigation Measures; Appendix E contains Alternatives; and Appendix F contains Modeling. Appendices G through X contain the affected environment and environmental consequences by resource area. Appendix Y contains Cumulative Impacts; Appendix Z contains Delta Conveyance Project Operations; Appendix AA contains Sites; Appendix AB contains the Biological Assessment; and Appendix AC contains Terrestrial Biological Assessment. Regarding the scoping comment summary, refer to Standard Response 1.

AD.3.1.3 References Cited

Bureau of Reclamation. 2022a. *Long-Term Operations: Initial Alternatives.* Central Valley Project. Interior Region 10—California–Great Basin. September. Available: https://www.usbr.gov/mp/bdo/lto/index.html. Accessed: October 4, 2024.

Bureau of Reclamation. 2022b. *Public Scoping Report: 2021 Reinitiation of Endangered Species Act Section 7 Consultation on the Long-Term Operation of the Central Valley Project and State Water Project*. California Great Basin Region. June. Available: https://www.usbr.gov/mp/bdo/docs/lto-scoping-report-2022.pdf. Accessed: October 4, 2024.

AD.3.2 Standard Response 2: Related Regulatory Processes

This Standard Response is based on general and recurring themes found in the comments that were received during the public comment period. The topics of discussion in this response include the following.

- The 2019 Biological Opinions issued by U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) (U.S. Fish and Wildlife Service 2019; National Marine Fisheries Service 2019) and United States Department of the Interior, Bureau of Reclamation's (Reclamation's) 2020 Record of Decision (ROD)
- The Biological Assessment process
- The Biological Opinion process
- The timing and preparation of the Biological Assessment, the issuance of the Biological Opinions, and the National Environmental Policy Act (NEPA) review
- California Environmental Quality Act (CEQA) Review and California Endangered Species Act permitting of the Long-Term Operation (LTO) of the State Water Project (SWP)

AD.3.2.1 2019 Biological Opinions

Reclamation operates the Central Valley Project (CVP) in accordance with its 2020 ROD and the Biological Opinions issued by USFWS and NMFS in 2019. Reclamation transmitted the *Reinitiation of Consultation on the Coordinated Long-Term Operation of the Central Valley Project and State Water Project Biological Assessment* to the regional director of the USFWS and the regional administrator of NMFS on January 31, 2019 (Bureau of Reclamation 2019a).

On October 21, 2019, USFWS issued a non-jeopardy Biological Opinion on the coordinated operation of the CVP and SWP for Delta smelt; on the same day, NMFS issued a non-jeopardy Biological Opinion for winter-run Chinook salmon, spring-run Chinook salmon, Central Valley steelhead, green sturgeon, and killer whale. The final Proposed Action evaluated in the 2019 Biological Opinions was the preferred alternative (Alternative 1) in the *Final 2019 Reinitiation of Consultation on the Coordinated Long-Term Operation Environmental Impact Statement* (Bureau of Reclamation 2019b).

AD.3.2.2 Biological Assessment Process

On September 30, 2021, Reclamation requested to reinitiate consultation on the LTO of the CVP and SWP under Section 7 of the Endangered Species Act (ESA) due to anticipated modifications to the previous Proposed Action that may cause effects on ESA-listed species or designated critical habitat not analyzed in the 2019 Biological Opinions. Modifications would address the review of the 2019 Biological Opinions required by Executive Order 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis* (86 *Federal Register* 7037), and voluntarily harmonize CVP operating criteria, as appropriate, with requirements for the SWP under the California Endangered Species Act (CESA). USFWS and NMFS responded to the request and offered technical assistance.

Reclamation submitted a qualitative aquatic Biological Assessment to NMFS and USFWS in June 2023 for their initial review on the approach and framework and then submitted a quantitative aquatic Biological Assessment in November 2023. The draft terrestrial Biological Assessment was submitted to USFWS in July 2023, and the final terrestrial Biological Assessment was submitted to USFWS in November 2023. The aquatic and terrestrial Biological Assessments support Reclamation's consultation and conference under the requirements of ESA Section 7 and document the potential effects of the Proposed Action on federally listed or proposed endangered and threatened species that have the potential to occur in California's Central Valley and on designated critical habitat for these species.

Pursuant to Section 305(b) of the Magnuson-Stevens Act (16 United States Code 1855(b)), federal agencies are required to consult with NMFS on actions that may adversely affect essential fish habitat (EFH) for species managed under the associated fishery management plans (FMP). The EFH assessment allows NMFS to promptly develop EFH conservation recommendations that are based on complete information about the proposed action. Reclamation provided an EFH analysis in October 2024 to initiate the process for meeting the consultation requirements for the Magnuson-Stevens Fishery Conservation and Management Act of 1976 for EFH. The analysis of EFH focuses on three management units represented by FMPs (NMFS 2017): Pacific coast salmon, coastal pelagic species, and Pacific coast groundfish. The final EFH report will be sent to NMFS for its review and recommendations.

Alternative 2 in the draft version of the *2021 Consultation on the Long-Term Operation of the Central Valley Project and State Water Project Environmental Impact Statement* (EIS) represents the Proposed Action in the November 2023 Biological Assessments that Reclamation submitted to USFWS and NMFS regarding the coordinated LTO of the CVP and SWP (Appendix AB, *Biological Assessment*). Since submitting the 2023 Biological Assessments, Reclamation has made revisions to its preferred alternative, as reflected in Alternative 2B components. At the time of the public Draft EIS release, the components of Alternative 2B were disclosed qualitatively. The Final EIS incorporates elements of Alternative 2B with those of the parent Alternative 2 supported by quantitative analysis. The modeled impacts in the Final EIS are consistent with the qualitative analysis of the Draft EIS. The Final EIS does not include a separate Alternative 2B.

AD.3.2.3 Biological Opinion Process

On July 11, 2024, in compliance with the Water Infrastructure Improvements for the Nation Act (WIIN Act), USFWS provided a draft Biological Opinion for review as part of the ongoing reinitiated ESA Section 7 consultation with Reclamation and DWR regarding the Coordinated LTO the SWP.

In compliance with the WIIN Act, NMFS provided sections of the draft Biological Opinion for review on July 18, 2024, as part of the ongoing reinitiated ESA Section 7 consultation with Reclamation and DWR regarding the Coordinated LTO of the CVP and SWP.

Reclamation provided both draft Biological Opinions to the required WIIN Act parties. In addition, Reclamation distributed the draft Biological Opinions to a broad list of stakeholders, including nongovernmental organizations.

Following issuance of the USFWS's and NMFS's Biological Opinions, Reclamation would implement all reasonable and prudent measures and their terms and conditions within the Incidental Take Statement.

AD.3.2.4 Timing and Preparation of the Biological Assessment, Issuance of the Biological Opinion, and NEPA Review

Commenters raised concerns regarding the timing and sequence of the NEPA and ESA consultation processes. Generally, commenters offered opinions and suggestions as to which order or sequence the processes should follow. The Draft EIS is prepared and made available pursuant to NEPA, whereas the Biological Assessment and the Biological Opinions are prepared pursuant to ESA Section 7. Although the Proposed Action triggers both NEPA and ESA Section 7, these are separate statutory schemes and processes. The ESA sets forth guiding principles to ensure that consultation occurs at the appropriate time to effectuate Section 7's purpose. Per 50 Code of Federal Regulations (C.F.R.) Section 402.14(a), each federal agency is directed to "review its actions at the earliest possible time to determine whether any action may affect listed species or critical habitat," and if such determination is made, then "formal consultation is required." Reclamation has proceeded with ESA compliance concurrent with NEPA review, and the various documents prepared pursuant to the respective statutory schemes were completed and made available consistent with the applicable legal requirements.

Coordinated NEPA Review and ESA Studies and Processes

The relationship between NEPA and ESA review processes is addressed in 40 C.F.R. Section 1502.24(a), one of the Council on Environmental Quality's NEPA Implementing Regulations: "To the fullest extent possible, agencies shall prepare draft environmental impact statements concurrent and integrated with environmental impact analyses and related surveys and studies required by … the Endangered Species Act of 1973." This regulation furthers the public's interest in agency efficiency and cost-effectiveness by encouraging coordination between NEPA and ESA efforts on a singular action, but it does not require agencies to prepare documents in a specific order. Reclamation complied with 40 C.F.R. Section 1502.24(a) by coordinating the NEPA review and ESA studies, and it followed a process that is consistent with the general timing for Section 7 consultations.

Some commenters requested clarification regarding the next steps and approvals for the EIS process or provided opinions about what is required for final approval. On publication of the Final EIS, Reclamation will prepare a ROD. The ROD will specify Reclamation's decision on a selected preferred action, discuss the action alternatives considered, and explain the rationale for the ultimate decision. The ROD will also state whether the agency has adopted all practicable means to mitigate environmental harm from the alternative selected (40 C.F.R. § 1505.2). The ROD will be issued no sooner than 30 days after the Environmental Protection Agency has published the Final EIS in the *Federal Register* (40 C.F.R. § 1506.10[b][2]).

AD.3.2.5 Requirements Applicable to the State Water Project

Reclamation and DWR have elected to meet their respective environmental review requirements under NEPA and CEQA independent of one another. Reclamation manages the CVP, and DWR manages the SWP. Because Reclamation is a federal agency, the Proposed Action is subject to NEPA review. DWR, as a state entity, is conducting separate CEQA review for the decisions that must be made regarding operation of the SWP. On June 16, 2023, DWR issued a Notice of Preparation (NOP) (California Department of Water Resources 2023) notifying interested parties that DWR would commence preparation of an environmental impact report (EIR) for the LTO of the SWP pursuant to CEQA. The NOP for the EIR states that DWR intends to seek a new Incidental Take Permit (ITP) from the California Department of Fish and Wildlife (CDFW), which would provide CESA authorization for SWP operations regardless of whether there are changes to federal law during the term of the ITP. DWR subsequently released its Draft EIR for public review from May 29, 2024, to July 15, 2024—a period that was subsequently extended to August 5, 2024.

While coordination between Reclamation, DWR, and other cooperating agencies has occurred in development of this EIS and DWR's EIR, the EIS alternatives and scope of analysis are not identical to DWR's EIR or proposed project described in the ITP application. Reclamation is disclosing the potential environmental effects of its broader proposed CVP LTO alternatives. Reclamation has voluntarily chosen to harmonize LTO of CVP as appropriate with operation of the SWP where they are consistent with Reclamation's statutory authorities.

AD.3.2.6 References Cited

Bureau of Reclamation. 2019a. *Reinitiation of Consultation on the Coordinated Long-Term Operation of the Central Valley Project and State Water Project Final Biological Assessment.* Central Valley Project, California Mid-Pacific Region. Prepared by ICF. Sacramento, CA.

Bureau of Reclamation. 2019b. *Reinitiation of Consultation on the Coordinated Long-Term Operation of the Central Valley Project and State Water Project Final Environmental Impact Statement.* Region 10—California–Great Basin. December. Sacramento, CA. Available: https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=41664. Accessed: July 2, 2024.

California Department of Water Resources. 2023. *Notice of Preparation of an Environmental Impact Report for Long-Term Operations of the State Water Project.* June 16. Sacramento CA. Available: https://water.ca.gov/-/media/DWR-Website/Web-Pages/News/Public-Notices/Files/NOP-for-ITP-SWPDeltaOps_Final_ADA.pdf. Accessed: July 23, 2024.

National Marine Fisheries Service. 2019. *Biological Opinion on the Long-Term Operation of the Central Valley Project and State Water Project*. Consultation tracking number WCRO-2016-00069. October 21. National Marine Fisheries Service, West Coast Region.

U.S. Fish and Wildlife Service. 2019. *Biological Opinion for the Reinitiation of Consultation on the Coordinated Operations of the Central Valley Project and State Water Project*. Service File No. 08FBTD00-2019-F-0164. October 21. Sacramento, CA.

AD.3.3 Standard Response 3: Baseline and No Action

AD.3.3.1 No Action Alternative

The National Environmental Policy Act (NEPA) regulations, including the 2022 regulations applicable to this EIS, direct the agency to consider the environmental impacts of a proposed action and the alternatives in comparative form, including the No Action Alternative (40 C.F.R. § 1502.14). In that regard, the No Action Alternative provides a baseline against which to compare the action alternatives. This approach is long-standing practice under NEPA and has remained in each version of the regulations.

Under the definition of the No Action Alternative in the Department of the Interior's National Environmental Policy Act Implementing Regulations (43 Code of Federal Regulations [C.F.R.] Part 46 § 46.30), the United States Department of the Interior, Bureau of Reclamation (Reclamation) NEPA Handbook, and Question 3 of the Council of Environmental Quality's (CEQ's) *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations* (46 *Federal Register* 18026 [March 23, 1981]), the No Action Alternative could represent a future condition with "no change" from current management direction or level of management intensity, or it could represent future "no action" conditions without implementation of the actions being evaluated in the *2021 Consultation on the Long-Term Operation of the Central Valley Project and State Water Project Environmental Impact Statement* (EIS).

The No Action Alternative in the EIS is described in detail in Chapter 3, *Alternatives*, Section 3.1, *Common Components*, and Section 3.2, *No Action Alternative*. Section 3.1 describes information applicable to the No Action Alternative and all action alternatives by defining their common components. Section 3.2 addresses the components of the No Action Alternative that are not common components with the action alternatives ("variable components"). Additional details are provided in Appendix E, *Alternatives*. Detailed modeling assumptions for the No Action Alternative are also provided in Appendix F, *Modeling*. In summary, the No Action Alternative is continued operation of the Central Valley Project (CVP) and State Water Project (SWP) as described in the 2020 Record of Decision (ROD) and subject to the 2019 Biological Opinions (U.S. Fish and Wildlife Service 2019; National Marine Fisheries Service 2019). Under the No Action Alternative, the California Department of Water Resources (DWR) would also continue to operate the SWP consistent with the California Department of Fish and Wildlife's 2020 Incidental Take Permit (ITP) for the SWP (California Department of Fish and Wildlife 2020). The No Action Alternative in this EIS is therefore consistent with the definition of "no change" from current management direction or level of management and complies with NEPA regulations and guidance regarding the definition of the No Action Alternative.

The 2020 ROD and the 2019 Biological Opinions represent the most current analysis of past, current, and future CVP and SWP operations, including the most recent scientific information as of the 2020 ROD. The Proposed Action adopted in the 2020 ROD was thoroughly analyzed and will best provide the basis for evaluating new alternatives.

AD.3.3.2 Sufficient NEPA "Baseline"

Multiple comments were received regarding the appropriate assumptions for the No Action Alternative. For example, some commenters believed the interim operations plan (IOP) should be used for the No Action Alternative. However, IOPs are interim in nature, not precedent setting, and specific to operations for water years 2022 through 2024. As discrete, temporary actions, the IOPs do not provide the range of hydrological conditions needed to provide a thorough comparison of alternatives. Other commenters thought the 2008/2009 Biological Opinions should have been used for the No Action Alternative, but these biological opinions are not currently governing the Coordinated LTO of the CVP and SWP. The 2019 Biological Opinions, which were remanded back to the agencies and not vacated, are largely governing operations.

In addition, some commenters have confused the term *baseline* as used in the Endangered Species Act (ESA) as requiring the equivalent analysis under NEPA. For ESA purposes, the environmental baseline refers to the current condition of the species in the action area without the consequences to the listed species caused by the proposed action. The environmental baseline includes the past and present impacts of all federal, state, or private actions and other human activities in the action area; the anticipated impacts of all proposed federal projects in the action area that have already undergone formal or early Section 7 consultation; and the impact of state or private actions that are contemporaneous with the consultation in process (50 C.F.R. § 402.02). The bases of comparison required by the two laws contain different requirements and contemplate different analyses and may not be used interchangeably, see Standard Response 2, *Related Regulatory Processes*.

Reclamation's continued operation of the CVP and SWP is described in the 2020 ROD and is subject to the 2019 Biological Opinions. The No Action Alternative, and therefore the baseline, also includes DWR's continued operation of the SWP consistent with the California Department of Fish and Wildlife's 2020 ITP for the SWP. As demonstrated throughout the EIS, all action alternatives' effects on the analyzed resources (Alternatives 1 through 4) are compared against the No Action Alternative.

AD.3.3.3 References Cited

California Department of Fish and Wildlife. 2020. Incidental Take Permit for Long-Term Operation of the State Water Project in the Sacramento–San Joaquin Delta 2081-2019-066-00. March. Sacramento, CA.

National Marine Fisheries Service. 2019. *Biological Opinion on the Long-Term Operation of the Central Valley Project and State Water Project*. Consultation tracking number WCRO-2016-00069. October 21. National Marine Fisheries Service, West Coast Region.

U.S. Fish and Wildlife Service. 2019. *Biological Opinion for the Reinitiation of Consultation on the Coordinated Operations of the Central Valley Project and State Water Project*. Service File No. 08FBTD00-2019-F-0164. October 21. Sacramento, CA.

AD.3.4 Standard Response 4: Alternatives Formulation

AD.3.4.1 Overview

This Standard Response includes a description of the process used to identify, evaluate, refine, and select a reasonable range of feasible action alternatives evaluated in the Draft EIS. The topics of discussion include the following.

- Formulation of alternatives (e.g., the process used to identify alternatives, the sufficient range of alternatives, and the feasibility of the alternatives identified).
- Level of detail provided in the descriptions of each alternative.

AD.3.4.2 Development of Alternatives

Some commenters expressed concern with the alternatives evaluated in the Draft EIS. This included concerns with the process used by Reclamation to formulate the alternatives, with the specific alternatives, with the range of the alternatives, and with the feasibility of the alternatives included in the EIS.

Purpose and Need

To satisfy NEPA requirements, an EIS must include a range of reasonable alternatives that would meet the purpose and need of the Proposed Action (42 United States Code § 4332[C][iii]). The purpose and need is a critical element that sets the overall direction of the process and serves as an important screening criterion for determining which alternatives are reasonable. All reasonable alternatives examined in detail must meet the defined purpose and need. The CEQ's NEPA Implementing Regulations (40 C.F.R. § 1502.13) state that the statement of purpose and need "shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action."

As indicated in Chapter 2, *Purpose and Need*, Section 2.1, *Purpose and Need*, the purpose of the action being considered is to continue the operation of the CVP and SWP, for authorized purposes, in a manner that achieves the following:

- Meets requirements under federal Reclamation law; other federal laws and regulations; and State of California water rights, permits, and licenses pursuant to Section 8 of the Reclamation Act.
- Satisfies Reclamation contractual obligations and agreements.
- Implements authorized CVP fish and wildlife project purposes and meets federal trust responsibilities to tribes, including those in the Central Valley Project Improvement Act (CVPIA).

Operation of the CVP and SWP is needed to meet multiple authorized purposes, including flood control and navigation; water supply; fish and wildlife mitigation, protection, and restoration and enhancement; and power generation. Operation of the CVP and SWP also provides recreation and water quality benefits. Congress established the CVP to improve navigation, regulate river flows, prevent flooding, and store and deliver water for the purposes of reclaiming arid and semiarid land and Indian reservations. The CVP also supplies water for municipal and industrial

purposes; however, the largest demand for CVP water is for agriculture. In 1992, Congress passed the CVPIA, modifying the purposes of the CVP (Public Law 102-575). The CVPIA established comprehensive purposes necessary to support California's economy, agriculture, and environment: protecting, restoring, and enhancing fish and wildlife habitats; addressing the CVP's impacts on fish and wildlife habitat; improving the operational flexibility of the CVP; increasing the CVP's water-related benefits to California; and contributing to California's efforts to protect the Bay-Delta (CVPIA § 3402(a)–(e)). Congress directed the Secretary of the Interior to "achieve a reasonable balance among competing demands for the use of Central Valley Project water, including the requirements of fish and wildlife, agricultural, municipal and industrial and power contractors" (CVPIA § 3402(f)).

The purpose and need description was refined with consideration of scoping comments. As explained in the Initial Alternatives Report, Reclamation received comments on the purpose and need for this action during scoping and made revisions (Bureau of Reclamation 2022). The purpose and need statement in the Draft EIS adequately discusses the underlying purpose of the project and, therefore, Reclamation is not making additional revisions.

Reclamation considers the range of reasonable alternatives in this EIS to meet the purpose and need. As discussed in greater detail in Appendix V, *Screened Scoping Comments*, of *Long-Term Operations: Initial Alternatives* (Bureau of Reclamation 2022) and noted below in the section titled *Development of Alternatives*, screening criteria guided Reclamation to identify components that could be combined into alternatives. Through implementation of this screening effort, Reclamation retained components to establish a range of reasonable alternatives. Each criterion was considered consecutively, so if a component was screened out after the first criterion, it was not compared to the subsequent criteria. Meeting purpose and need served as Screening Criterion #1, such that alternatives not meeting the purpose and need were immediately screened from further consideration in the Draft EIS.

Development of Alternatives

Reclamation undertook a multiyear process to develop and select an appropriate range of alternatives to be analyzed in the Draft EIS (and presented in the Final EIS) that fully comply with all applicable legal requirements. This process is described in Appendix E, *Alternatives*, Section E.1, *Introduction*.

Reclamation formulated draft alternatives for the proposed LTO of the CVP and SWP through the NEPA scoping process, coordination with public water agencies pursuant to the WIIN Act, interagency coordination teams, and outreach to interested parties and based on Reclamation's decades of experience in operating the CVP and DWR's similar experience in operating the SWP. A Notice of Intent (NOI) (87 FR 11093–11095), published February 28, 2022, sought public comments. Reclamation requested comments by mail and by email and held six virtual public meetings identified geographically, each of which was open to virtual attendance by anyone.

1. Tuesday, March 8, 2022, 2 p.m. to 4 p.m., Sacramento, CA, virtual meeting
2. Wednesday, March 9, 2022, 5:30 p.m. to 7:30 p.m., Red Bluff, CA, virtual meeting
3. Thursday, March 10, 2022, 2 p.m. to 4 p.m., Fresno, CA, virtual meeting

4. Tuesday, March 15, 2022, 5:30 p.m. to 7:30 p.m., Los Banos, CA, virtual meeting
5. Wednesday, March 16, 2022, 2 p.m. to 4 p.m., Tracy, CA, virtual meeting
6. Thursday, March 17, 2022, 2 p.m. to 4 p.m., Chico, CA, virtual meeting

The subsequent scoping report includes the public comments received from the NOI and during scoping meetings (Bureau of Reclamation 2022: Appendix V). Reclamation received 47 letters, emails, and verbal comments during the scoping period. Interest groups that provided comments included public water management agencies, Tribes, local governments, farmers and producers, conservation organizations, commercial water developers, federal agencies, private citizens, and nongovernmental organizations (NGOs). An initial disposition of scoping comments related to alternatives and to the analysis of alternatives is described in Appendix V of the Initial Alternatives Report (Bureau of Reclamation 2022).

The Initial Alternatives Report explored the bounds of different potential approaches (Bureau of Reclamation 2022) and provided an initial screening of comments received during scoping based on identified screening criteria. Agencies are required to briefly discuss their reasons for eliminating alternatives from detailed study (40 C.F.R. § 1502.14[a]). Reclamation's use of these screening criteria supports its clear and consistent description of its methodology for selecting which alternatives to analyze in detail. Screening criteria guide Reclamation in identifying—early in the development of the alternatives process—which alternatives may or may not be appropriate to analyze in detail. Under NEPA regulations, "reasonable alternatives means a reasonable range of alternatives that are technically and economically feasible, and meet the purpose and need for the proposed action" (40 C.F.R. § 1508.1[z]). If an alternative is flagged as inconsistent with this definition, it should not be analyzed in detail. The following are the screening criteria used by Reclamation.

1. **Purpose and Need:** How well each component would meet the purpose and need.
2. **Completeness:** Whether sufficient information is available and can be analyzed through quantitative or qualitative means.
3. **Technically and Economically Feasible:** Capable of being provided (1) through technology that is readily available and has been demonstrated in actual operating conditions (not simply through tests or experiments) to operate in a workable manner and (2) in a manner that does not require relatively large financial investments for relatively minor or unproven benefits.
4. **Value Added:** Alternatives or components that may be considered unnecessary because a different or simpler configuration likely offers similar or better performance in terms of resulting impacts.

Previous consultations with USFWS and NMFS identified measures to protect fish species listed under the ESA, and those measures primarily differentiate alternative approaches. Exploratory modeling simulated potential water operations under layers of operational objectives, and potential modifications and limitations on the seasonal operation of the CVP and SWP were informed by those modeling results. The seasonal water operations and the conservation measures anticipated for inclusion in each alternative were identified as common components because no unresolved conflicts necessitated consideration of different approaches.

Reclamation held monthly status meetings with water agencies and separate monthly meetings with environmental NGOs to inform the formulation of alternatives. At a second parallel series of monthly meetings, Reclamation reviewed and developed modeling (Chapter 23, *Other NEPA Considerations*, Attachment 1, *Consultation and Coordination*). Reclamation held quarterly WIIN Act meetings to discuss various topics, starting with scoping under the NOI in March 2022; the scoping report on June 14, 2022; the Initial Alternatives Report on September 13, 2022; lines of evidence for analyses on December 13, 2022; the affected environment on March 14, 2023; and the Proposed Action and alternatives on June 13, 2023.

Reclamation developed the following potential action alternatives, described later in this Standard Response.

- **Alternative 1—Water Quality Control Plan (State Water Resources Control Board Water Right Decision 1641 [D-1641], Water Rights Order 90-5, etc.):** Operation to water right terms and conditions implementing the CVP and SWP contributions and obligations for state water quality control plan objectives for the San Francisco Bay/Sacramento–San Joaquin Delta (Bay-Delta), CVP tributaries, and other water quality control plan settlements. Additionally, this alternative includes habitat restoration, hatchery intervention, and other non-flow measures.
- **Alternative 2—Multi-Agency Consensus Proposal:** Actions developed with agency coordination to harmonize, as appropriate, operations of the CVP with CESA requirements for the SWP. Reclamation met weekly with the CDFW, DWR, NMFS and USFWS. Ultimately, 65 small groups of agency representatives were tasked with reviewing the 2019 Long-Term Operation Proposed Action and 2020 Incidental Take Permit Action to identify substantial physical and biological science disagreements and to reconcile, as appropriate, operating criteria for the state and the federal projects. Senior agency management and directors developed the actions necessary for a consensus proposal.
- **Alternative 3—Modified Natural Hydrograph:** Actions developed with environmental NGOs through discussions with Reclamation to increase Delta outflow to meet certain targets with up to 65% of unimpaired Delta outflow and with carryover storage requirements to protect coldwater pools in upstream reservoirs. Reclamation met with several environmental NGOs approximately monthly for the development of this alternative.
- **Alternative 4—Risk-Informed Operations:** Modifications to the 2019 Proposed Action to incorporate new science and tools for considering population-level effects to listed species and for responding to conditions in weekly "real-time" groups.

Refinements from the options in the Initial Alternatives Report to public Draft EIS alternatives included the following:

- Excluded most non-flow conservation measures to focus Alternative 2 on operational actions.
- Reformulated Shasta Reservoir coldwater pool options into alternatives with consideration of additional options.

- Reformulated Old and Middle River (OMR) flow management options into alternatives.
- Refined spring pulses and Delta outflow options into alternatives under winter and spring flows.
- Developed New Melones Reservoir Stepped Release Plan alternatives.
- Incorporated the installation of a non-physical barrier at Georgiana Slough within the existing environment.
- Developed monitoring and drought components.
- Screened the Head of Old River Barrier.
    - This action was proposed for inclusion but did not meet screening criteria for these reasons: (1) It did not meet the purpose and need criterion for the operation of the CVP and SWP because it is not a CVP or SWP facility and it did not contribute to the operation of a facility; (2) it did not meet the technical and economic feasibility criterion due to relatively minor and unproven benefits despite large financial investments and changes in Delta hydrodynamics; and (3) it did not meet the value added criterion due to equivocal changes in survival and an increased need for OMR constraints. The analysis is described in Appendix R, *Head of Old River Barrier,* of the Initial Alternatives Report (Bureau of Reclamation 2022).

Range of Reasonable Alternatives

Some commenters communicated general concern with the range of alternatives evaluated in the Draft EIS. Such comments often identified issues that were general in nature, and some indicated that the alternatives evaluated were not reasonable because they did not include measures the commenters felt were necessary to ensure compliance with regulatory requirements and legal obligations.

The CEQ's NEPA Implementing Regulations provide that lead agencies shall "Evaluate reasonable alternatives to the proposed action, and, for alternatives that the agency eliminated from detailed study, briefly discuss the reasons for their elimination" (40 C.F.R. § 1502.14[a]). Agencies shall "Limit their consideration to a reasonable number of alternatives" (40 C.F.R. § 1502.14[f]). According to 40 C.F.R. Section 1508.1(z), "Reasonable alternatives means a reasonable range of alternatives that are technically and economically feasible, and meet the purpose and need for the proposed action." Appendix E of the Draft EIS includes a wide range of alternative components representing diverse viewpoints and needs based on Reclamation's internal deliberation and public scoping previously described in this standard response. The Draft EIS ultimately presents four potential action alternatives and the No Action Alternative, as described in the EIS Executive Summary.

Feasibility of Alternatives Identified

Some commenters communicated general concern with the feasibility of the alternatives evaluated in the Draft EIS. Such comments often identified issues that were general in nature, and some conveyed the commenter's belief that the alternatives evaluated were not feasible due to their potential impacts on a resource or on multiple resources of importance to the commenter.

Alternatives are not rendered infeasible simply due to their potential to result in environmental impacts; NEPA is a procedural statute that requires only that an agency take a "hard look" at the consequences of its actions. Appendix E of the Draft EIS presents the full spectrum of individual components considered during the formulation of the alternatives evaluated in the Draft EIS. Appendix E of the Draft EIS also presents (as provided previously in this Standard Response) the screening exercise that was completed by Reclamation to support the narrowing and refinement of these components to formulate the alternatives evaluated in the EIS, which included feasibility considerations.

Multiple commenters have raised concerns about the legality of Alternatives 2 and 3, including that they are potentially inconsistent with Reclamation's statutory authorities, regulations, and contracts. Reclamation may consider potentially reasonable alternatives beyond its own jurisdiction and the jurisdictions of other agencies (federal and otherwise) when determining what reasonable alternatives should be considered. NEPA is intended to facilitate public engagement in decisions that affect the quality of the human environment, including developing appropriate "alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources" (40 C.F.R. § 1501.2(b)(3). CEQ has explained that reasonable alternatives may include alternatives that are "outside the agency's jurisdiction because the agency concludes that they are useful for the agency decision maker and the public to make an informed decision" (87 C.F.R. 23470). The range of alternatives considered in the EIS is feasible and intends to implement the alternatives selected in the ROD consistent with its legal obligations.

Selection of Preferred Alternative

Per 40 C.F.R. Section 1502.14(d), agencies shall "identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference." As stated in Chapter 1, *Introduction*, Section 1.3, *Selection of Preferred Alternative*, Reclamation identified Alternative 2B as the preferred alternative. Alternative 2B was developed through a multi-agency consensus process including CDFW, DWR, NMFS, and USFWS. Reclamation has determined that Alternative 2B best meets the purpose and need, including the goals of Executive Order 13990 because NMFS and USFWS reached consensus with Reclamation on an alternative for consultation.

The Final EIS incorporates the components of Alternative 2B into the updated modeling and analysis of Alternative 2. The Final EIS does not contain a separate Alternative 2B.

AD.3.4.3 References Cited

Bureau of Reclamation. 2022. *Long-Term Operations: Initial Alternatives.* Central Valley Project. Interior Region 10—California–Great Basin. Available: https://www.usbr.gov/mp/bdo/lto/index.html. Accessed: July 19, 2024.

AD.3.5 Standard Response 5: Adequacy of Analysis and Mitigation

AD.3.5.1 Overview

This Standard Response provides an overview of how the EIS meets NEPA adequacy requirements, including the EIS's approach to conducting impact assessments, the process for conducting the cumulative impact analysis, and the mitigation measures included in the document. This Standard Response addresses these topics within the following three major sections.

- **Adequacy of Analysis:** This discussion addresses comments on the NEPA assessment; the application of the best available science as part of the impact assessment; and how impact determinations were made, including application of significance thresholds.
- **Cumulative Analysis:** This discussion outlines the approach that Reclamation used in preparing the cumulative impact analysis and explains why Reclamation believes this approach is an accurate representation of cumulative conditions within the study area.
- **Mitigation:** The discussion of mitigation addresses comments on the applicability of mitigation proposed in the EIS and the process for adopting those measures as part of Reclamation's decision on the alternatives.
- **Supplementation of the EIS:** The discussion addresses the need for supplementation of the Draft EIS.

AD.3.5.2 Adequacy of Analysis

Multiple commenters expressed concerns that the analysis was insufficient or lacking in detail, or they disagreed with the methods employed or otherwise inadequate. Other commenters generally stated that the EIS did not include the correct modeling assumptions, such as the operational assumptions.

The impact analysis provided in the EIS was based on a wide range of information sources that are typically compiled and evaluated for water-based projects similar to the scope and complexity of the long-term consultation on the coordinated LTO. This analysis included considering the assessment methods and conclusions contained in other environmental compliance documents similar to the LTO EIS, such as prior NEPA analyses completed for the Central Valley Project; compiling, reviewing, and applying information contained in a broad range of sources, such as scientific literature and other studies; and considering information available from other federal, state, and local agencies. Once compiled, this information was considered as part of the overall assessment methodology for each resource considered in the EIS. The assessment methods applied and reported in the EIS are industry standard; and although some methods may have been modified for application to this EIS, most are based on foundational approaches successfully applied to other projects. The impact analysis was also supplemented by the expertise of resource specialists who prepared the EIS, including Reclamation staff and qualified consultants. A list of the resource specialists responsible for conducting the impact assessments, along with descriptions of their areas of expertise, is provided in Appendix A, *List of Preparers*.

Methodology and Scientific Accuracy

Guidance about information to be used in an EIS can be found in 40 C.F.R. Section 1502.23 . Reclamation used reliable data and scientific information resources throughout the EIS. A wide range of relevant data, literature, and tools were used in the development of the Proposed Action and the analysis of its environmental impacts. Reclamation used well-founded information, as determined by subject matter experts, to produce analyses of the effects of the Proposed Action, drawing on numerous scientific and engineering disciplines, including geology, hydrology, biology, ecology, chemistry, engineering, and climatology. Data and information sources are clearly cited within the body of the EIS, and bibliographies are provided at the end of the EIS (Appendix B, *References*) and in each accompanying appendix. The data, models, and literature are widely used.

These data, models, literature, and analyses have been subjected to review either as part of the customary practices of scientific publication or as part of this regulatory process. The impact analyses were themselves subject to review and comment by the general public, experts in relevant scientific disciplines (e.g., Delta Science Program independent scientific expert review of the biological models), and expert staff from regulatory agencies having jurisdiction over one or more aspects of the alternatives or permitting (e.g., NMFS, USFWS, CDFW, DWR, and the U.S. Army Corps of Engineers [USACE]). Additional discussion regarding the modeling used in the EIS is provided in Standard Response 6, *Hydrologic Modeling and Surface Water Resources*.

Reclamation included multiple lines of evidence where different analytical approaches might strengthen or inform conclusions. These data are appropriately used as a comparative analysis consistently across all alternatives to identify environmental effects. Reclamation is not obligated to conduct an exhaustive analysis using every available approach, modeling tool, and data set (40 C.F.R. § 1502.23).

NEPA Requirements Regarding Impact Determinations

Under NEPA, the purpose of an EIS is to inform decision makers and the public of the impacts that could result from implementing the Proposed Action or action alternatives and ensure that decision makers consider the environmental effects of an action. The focus of an EIS is to disclose the significant impacts of the Proposed Action and action alternatives, with less attention given to impacts found to be minor or inconsequential.

Although NEPA does not specify thresholds of significance, an EIS should identify the effects of an action and the significance of such effects. Significance varies with the setting of the proposed action, and it includes both beneficial and adverse impacts and both short and long-term effects. In this EIS, the primary approach to analyzing impacts on specific resources was to determine the degree and context of an expected change (40 C.F.R. § 1501.3).

AD.3.5.3 Cumulative Analysis

Sufficiency of the Cumulative Analysis

NEPA requires the assessment of cumulative impacts as part of the environmental review process. NEPA also provides guidance regarding the treatment of cumulative impacts and how to determine the types of projects that should be considered in the impact analysis. Per the CEQ's NEPA Implementing Regulations, cumulative effects are effects on the environment that result

from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 C.F.R. § 1508.1(g)(3)). The purpose of the cumulative impact analysis is to assess the impacts of a Proposed Action in combination with a group of actions or projects with similar or overlapping impacts. Reclamation limited those actions to only those that could result in a cumulative impact on a specific resource topic (e.g., water quality, air quality, aquatics). The general list of projects considered in the cumulative impact assessment (Appendix Y, *Cumulative Impacts Technical Appendix*) is based on other past, present, and reasonably foreseeable projects of similar type, geographic location, and spatial occurrence as the alternatives. These projects include actions to develop water storage capacity; water conveyance infrastructure; water recycling capacity; the reoperation of existing water supply infrastructure, including surface water reservoirs and conveyance infrastructure; and habitat restoration actions. The list of actions was created by reviewing scoping comments related to cumulative effects, projects considered as part of the cumulative effects analysis in the 2019 Reinitiation of Consultation on the Coordinated LTO process, and other environmental compliance documents that share some of the characteristics of the LTO of the CVP and SWP.

Reclamation qualitatively analyzed the potential cumulative impact on each resource. The cumulative impact analysis determined whether the effects of an action alternative would be considered to contribute cumulatively to the resource area when considered in combination with the effects of other past, present, and reasonably foreseeable future projects, including a description of the resultant impacts.

AD.3.5.4 Mitigation

Specific, feasible measures are proposed when necessary to avoid, reduce, minimize, or compensate for adverse environmental effects of the Proposed Action. Although NEPA does not impose a substantive obligation on federal agencies to adopt mitigation, analyzing proposed mitigation is consistent with NEPA's intent that mitigation be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated.

Mitigation is an important mechanism that federal agencies can use to minimize the potential adverse environmental impacts associated with their actions. As described in the CEQ regulations, agencies can use mitigation to reduce environmental impacts (40 C.F.R. 1508.1(s)).

The Final EIS includes mitigation measures as an outcome of the analysis conducted for each of the resource areas evaluated. The mitigation measures applicable to the impacts identified are provided at the end of each resource area chapter and appendix of the Final EIS. Mitigation measures proposed for a resource may be unique to that resource, but may also include mitigation measures that have been proposed under other resource topics if the resource specialists conducting the assessments concluded that such measures would also help address impacts on that resource. A detailed description of the mitigation measures is provided in EIS Appendix D, *Mitigation Measures*.

The proposed mitigation is commensurate with the severity of the impacts identified in the EIS. In following the CEQ guidance on the formulation of mitigation, Reclamation necessarily and appropriately relied on the professional resource area authors' expertise in and experience with assessing mitigation needs and developing mitigation measures. Reclamation also drew on expertise outside the agency to help identify and develop mitigation.

Reclamation will determine the appropriate mitigation measures discussed in the EIS as part of the process of developing and approving the ROD. The ROD will clearly identify any environmental commitments that will be implemented by Reclamation. These measures could include performance expectations (e.g., start date, duration). In addition, mitigation measures may be implemented by Reclamation or another consenting agency through conditions of approval, grant or permit conditions, or other mechanisms.

AD.3.5.5 Supplementation of the EIS

Some commenters requested that the Draft EIS be revised or supplemented and distributed once more for public review. Comments that provided specific additional information in support of a supplemental EIS are addressed in topic-specific Standard Responses or in the individual unique responses in Appendix AD, *Responses to Comments*.

Under the CEQ's NEPA Implementing Regulations (40 C.F.R. § 1502.9b), if a draft EIS is so inadequate as to preclude meaningful analysis, the agency shall prepare and publish a supplemental draft of the appropriate portion. Under 40 C.F.R. § 1502.9(d), agencies shall prepare supplements to either draft or final environmental impact statements if a major federal action remains to occur and the agency makes substantial changes to the proposed action that are relevant to environmental concerns or there are significant new circumstances or information relevant to environmental concerns bearing on the proposed action or its impacts. None of these conditions have been met, so Reclamation is not preparing a supplemental EIS.

AD.3.5.6 References Cited

Bureau of Reclamation. 2012. *Reclamation—Managing Water in the West: Reclamation's NEPA Handbook.* U.S. Department of Interior. February. Available: https://www.usbr.gov/nepa/docs/NEPA_Handbook2012.pdf. Accessed: July 10, 2024.

AD.3.6 Standard Response 6: Hydrologic Modeling and Surface Water Resources

AD.3.6.1 Overview

This Standard Response includes a description of hydrologic models, modeling assumptions, and modeling limitations to address concerns raised in comments on the EIS. The topics of discussion include modeling operations, the use of specific models, commonly perceived modeling "flaws," the level of detail in models, and appropriate use of model results.

AD.3.6.2 Modeling

Common Concerns about Modeling Operations in Extreme Conditions

CalSim 3 results differ from real-time operations under stressed water supply conditions, although the model includes detailed inputs and assumptions. Such model results occur because of the model's inability to make the unique, real-time policy decisions under extreme circumstances that the actual (human) operators must do. Therefore, results that indicate severely low storage or an inability to meet flow requirements or senior water rights should only be considered an indicator of stressed water supply conditions under that alternative; such results should not necessarily be understood to reflect literally what would occur in the future under that alternative. As noted below in the section titled *Modeling as a Comparative Tool (Not Prediction)*, CalSim 3 model output is used as a tool to assist in comparing conditions across alternatives and not as a tool to predict system operations. In real-time operations, these conditions would be avoided by making operational decisions on other requirements in prior months. In actual future operations—as has always been the case in the past—the project operators would work in real-time to satisfy legal and contractual obligations given the current conditions and hydrologic constraints.

Use of Specific Models

CalSim 3

The CalSim 3 planning model developed by Reclamation and DWR was used to simulate the coordinated operation of the CVP and SWP over a range of hydrologic conditions. CalSim 3 is a generalized reservoir–river basin simulation model that allows for specification and achievement of user-specified allocation targets or goals. CalSim 3 represents the best available planning model for CVP and SWP system operations. The CalSim 3 model represents the best available planning analytical tool for CVP and SWP system operations and is an improved and expanded version of CalSim II, which has been the standard planning model for systems operations since the early 2000s. CalSim 3 was also recently used by DWR as part of the hydrologic modeling effort for their Delivery Capability Report and the Delta Conveyance Project. Appendix F, *Modeling*, provides additional information on the development and use of CalSim 3 and includes an overview of modeling simulations and assumptions used for the LTO.

HEC-5Q

The Trinity-Sacramento River, American River, and Stanislaus River HEC-5Q models used for the project are specific implementations of the general HEC-5Q model described in Appendix F. The models use inputs derived from CalSim 3 outputs that have been temporally downscaled to daily timeseries and 6-hour meteorological data derived from calculated and observed data. These models were previously used in Reclamation's Biological Assessment for the 2019 reinitiation of consultation on the coordinated long-term operation of the CVP and SWP (Bureau of Reclamation 2019a) but have been updated to use CalSim 3 outputs. Further methodological updates were performed under the LTO and are described in Appendix F, Attachment 1-3, *Model Updates.*

Portions of the project area may already be modeled with high-resolution modeling software packages different than those used in this analysis. However, these models are not designed for the purposes of this EIS. Typically, such models are not developed to simulate across a 100-year period of varying hydrology, nor are these models developed in coordination with CalSim 3 assumptions. The HEC-5Q model was developed to simulate across a 100-year period of varying hydrology in coordination with CalSim 3 assumptions; this makes HEC-5Q the best available model to simulate waterways of interest with CalSim 3 results as inputs.

DSM2

DSM2 is a one-dimensional hydrodynamic and water quality simulation model used to simulate hydrodynamics, water quality, and particle tracking in the Sacramento–San Joaquin Delta (Delta) (California Department of Water Resources 2019). DSM2 represents the best available planning model for Delta tidal hydraulic and salinity modeling. It is appropriate for describing the existing conditions in the Delta, as well as for performing simulations for the assessment of incremental environmental impacts caused by future facilities and operations (Bureau of Reclamation 2019b).

Commonly Perceived "Flaws"

Monthly Timestep

CalSim 3 operates on a monthly timestep, which allows for representation of general operational rules and is the best available planning model for CVP and SWP system operations. Moreover, it is an appropriate model for a comparative analysis of alternatives. Details can be found in Appendix H, *Water Supply Technical Appendix*.

The model is designed as a long-term planning model, and the simulation timestep is selected according to appropriate use of the model. Monthly timestep allows for representation of generalized operational rules for the operation of the CVP and SWP and does not introduce additional uncertainty on daily real-time decision-making. It also allows for more accurate accounting and water balance because one month is long enough for water to move within the system; no routing assumptions or daily accounting of minor tributary flows is needed. While daily information seems more appealing, it only adds to model uncertainty as the assumptions for daily operations would be much less representative of daily decision-making. CalSim 3 is the best available planning model for CVP and SWP system operations. Moreover, it is an appropriate model for a comparative analysis of alternatives. Please see Appendix H – *Water Supply Technical Appendix*, for more details.

Model Time Period

CalSim 3 uses an adjusted historical sequence of monthly stream flows over a 100-year period (1921 through 2021). The 100-year period includes a wide range of hydrologic conditions (several droughts and wet periods). These hydrologic conditions are then projected to future conditions. CalSim 3 is set up to run through these hydrologic conditions with a future level of development while accounting for climate change and operational regulations. Therefore, CalSim 3 results for different alternatives can be compared in a consistent manner.

Appropriate Use of Model Results

CalSim 3 simulates operations over a 100-year period. Model results are a function of projected hydrology and projected land use with certain operational rules that would have not been in place historically and, therefore, do not represent the actual operations in history. The model is intended to be used to understand trends. Using a statistical summary of results in comparison is appropriate, while the use unique occurrences are not adequate to identify the trends in results. Exceedance plots display model output variability across the entire simulation period. Furthermore, water year–type averages of model results are presented because several operations and regulations vary with water year type. Observation of model results reacting to changes in operations and regulations based on water year types is presented in Appendix F, Attachment F.2-1, *CalSim 3—Storage and Elevation*, and Attachment F.2-2, *CalSim 3—Flow*, which provide modeling results and graphical representation of reservoir storage and river flows for each alternative.

Sub-Monthly Results

All model results are based on CalSim 3 output. Because CalSim 3 operates on a monthly timestep, analysis of results from any model at a sub-monthly level is inappropriate. CalSim 3 is the best available tool for assessing changes to the project area. Although several physical, biological, and human resource functions occur at a sub-monthly timestep, model results must be compared and assessed at a monthly interval. This model limitation, among others, is addressed through comparative analysis and quantitative discussion of model results.

Although certain components in the model, such as an air-temperature-based trigger for a fisheries action, are downscaled to a daily timestep (simulated or approximated hydrology), the results of those daily conditions are always averaged to a monthly timestep. For example, a certain number of days with and without the action is calculated and the monthly result is calculated using a day-weighted average based on the total number of days in that month. Operational decisions based on those components are again made on a monthly basis.

Modeling as a Comparative Tool (Not Prediction)

CalSim 3 is a monthly model developed for planning analyses. The model is run for a 100-year historical hydrologic period, at a projected level of hydrology and demands, and under an assumed framework of regulations. Therefore the 100-year simulation does not provide information about historical conditions, but it does provide information about variability of conditions that would occur at the assumed level of hydrology and demand with the assumed operations, under the same historical hydrologic sequence. Because it is not a physically based model, CalSim 3 is not calibrated and cannot be used in a predictive manner. CalSim 3 is intended to be used in a comparative manner, which is appropriate for the EIS analysis.

Drawing Conclusions from Model Results

The model results are not used to project specific physical, biological, or human resource values. Because the models are used in a comparative manner, the results of the analysis are less affected by the limitations and uncertainties. The quantitative model results are used in conjunction with the qualitative analyses presented in this EIS to consider the relative changes in the project area associated with the alternatives.

AD.3.6.3 Drought Analysis

Please see the following sections regarding modeling assumptions and output analysis of droughts.

Inclusion of Most Recent Drought Years

CalSim 3 is limited to water years 1922 through 2021, as noted in Appendix F, Section F.4, CalSim 3. Although this does not include the most recent drought years, hydrologic conditions over the 100-year historical period include several drought periods (1929–1934, 1976–1977, 1987–1992, 2014–2015, 2021). Operations in drought years may be observed through critical water year averages or at the extreme of an exceedance plot. Before drawing conclusions, please review Appendix F, Section F.14, *Model Limitations and Appropriate Use of Model Results.* Exceedance probability graphs are provided in Appendix F.

Analysis of Consecutive Dry Years

Individual dry periods are too small a sample from which model results may be extracted. Nonetheless, dry periods during the 100-year historical period used in CalSim 3 (1929–1934, 1976–1977, 1987–1992, 2014–2015, 2021) were included in the modeling, and therefore the model accounts for individual dry periods. To assess potential model results in a dry period, review exceedance plots provided in Appendix F. Please review Appendix F, Section F.14 before assessing model results in extreme conditions.

AD.3.6.4 References Cited

Bureau of Reclamation. 2019a. *Modeling.* Appendix D. *Biological Assessment on the Continued Long-term Operations of the Central Valley Project and State Water Project*. January. U. S. Department of the Interior.

Bureau of Reclamation. 2019b. *Modeling.* Appendix F in *Final Environmental Impact Statement Reinitiation of Consultation on the Coordinated Long-Term Operation of the Central Valley Project and State Water Project.* December. U. S. Department of the Interior.

California Department of Water Resources. 2019. *DSM2: Delta Simulation Model 2.* Last updated September 2019. Available: https://water.ca.gov/Library/Modeling-and-Analysis/Bay-Delta-Region-models-and-tools/Delta-Simulation-Model-II. Accessed: October 2019.

Draper, A. J., A. Munévar, S. K. Arora, E. Reyes, N. L. Parker, F. I. Chung, and L. E. Peterson. 2004. CalSim: Generalized Model for Reservoir System Analysis. *Journal of Water Resources Planning and Management* 130(6).

AD.3.7 Standard Response 7: Aquatic Resources

AD.3.7.1 Overview

This Standard Response includes topics related to aquatic resources that were identified by commenters as areas of concern, such as the following.

- Aquatic analysis, including the level of detail requested by commenters, additional modeling and analysis, and the use of quantitative versus qualitative analysis.
- Application of modeling results for evaluation of potential impacts on aquatic resources, including uncertainty and process behind impact descriptors.
- Evaluation of project impacts, including potential changes to fall-run Chinook salmon abundance and mitigation.
- Sacramento River seasonal operations, spring pulse flows, and coldwater pool management.

AD.3.7.2 Response to General Comments Regarding Adverse Impacts on Aquatic Resources

Some commenters communicated general concern for adverse impacts on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta), that could potentially result from the action alternatives. Potential impacts mentioned in such comments were often general in nature and included, for example, concern about further declines in populations of salmonids and other native fishes as well as further reductions in flow that native fishes depend on. The evaluation of potential impacts on salmonids and other fishes that could result from the Proposed Action is described in the EIS in Chapter 12, *Fish and Aquatic Resources*, and further detailed in Appendix O, *Fish and Aquatic Resources Technical Appendix*. This evaluation provides the magnitude and context of the impacts, as required by NEPA. See Standard Response 1, *Responses to General Comments and Comments about Public Outreach*, for responses to general comments on the EIS or comments that do not raise specific significant environmental issues.

Some commenters communicated that the actions described in the preferred alternative would not adequately protect sensitive fishery and aquatic species or alleviate adverse impacts on protected species. Alternatives 2 and 2B were developed in coordination with the resource agencies, including USFWS, NMFS, CDFW, and DWR. Please refer to Chapter 3, *Alternatives*, and Appendix E, *Alternatives*, for detailed information on all of the alternatives, including Alternatives 2 and 2B. Refer also to Standard Response 10, *Voluntary Agreements*, regarding voluntary agreements' representation in Alternatives 2 and 2B. Additional information about the aquatic impact analysis and mitigation is provided in Section AD.3.7.3, *Aquatics Analysis*, of this Standard Response. As explained in Standard Response 5, *Adequacy of Analysis and Mitigation*, mitigation of adverse impacts is identified in the EIS as required under NEPA. However, Reclamation acknowledges concerns that commenters have over impacts on protected species.

Other commenters thought reduced releases under the action alternatives would further degrade conditions for listed and other sensitive native species that depend on river flows and Delta outflows, citing information provided in the State Water Resources Control Board's scientific basis report for potential Sacramento/Delta updates to the *Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta Estuary* (Bay-Delta Plan) (State Water Resources Control Board 2023). NEPA requires a range of reasonable alternatives to fully inform decisions. Reclamation believes that it is healthy and appropriate to include alternatives with different approaches to Delta outflow. Refer to Standard Response 4, *Alternatives Formulation*, for the rigorous approach Reclamation undertook in the formulation of alternatives to ensure a range of reasonable alternatives.

Commenters also suggested that the EIS should evaluate whether such actions described in the action alternatives provide for the reasonable protection of fish and wildlife under state law. As stated in the EIS, although Reclamation and DWR strive for a coordinated operation of the CVP and SWP, Reclamation and the CVP are not subject to requirements under CESA. Please refer to Standard Response 2, *Related Regulatory Responses*, regarding Reclamation's compliance with applicable laws and regulations.

Several commenters suggested that, if under the No Action Alternative, a special-status species population was declining, it is by definition not self-sustaining, and any adverse effect on its habitat or individuals should result in a substantial adverse effect associated with the alternatives. Once a decision is made to proceed with an EIS, the No Action Alternative provides a basis for a comparative analysis of relative change to the environment associated with the action alternatives. Under the No Action Alternative, special-status species populations may be declining. However, this trend is occurring in the existing conditions, and it is not a criterion to define a substantial impact on a species associated with the alternatives. As explained in Standard Response 3, *Baseline and No Action*, the No Action Alternative serves as the baseline against which the action alternatives are compared. The impact analysis is required to describe, either qualitatively or quantitatively, the effect of the alternatives compared to the No Action Alternative. A special-status species population may be declining under the No Action Alternative; however, as long as the alternatives are not identified as qualitatively or quantitatively worsening the conditions found in the No Action Alternative, the analysis may reasonably conclude impacts are not substantially adverse.

AD.3.7.3 Aquatics Analysis

This Standard Response provides responses to comments on aquatic analyses. In summary, these comments disagreed with the level of detail provided in the chapters, requested additional modeling and analysis, expressed concerns over the use of quantitative versus qualitative analysis, stated that the modeling conducted is insufficient, or questioned the application of modeling results and evaluation of alternative impacts. Multiple comments suggested that Reclamation should conduct additional biological modeling and analysis beyond what was completed in the EIS. For example, it was suggested that Reclamation conduct sensitivity analyses to more fully evaluate the impacts of project components or operational adjustments. Some commenters also requested additional details regarding the action alternatives' components, including details on descriptions of actions, definitions of indices and assessments, and additional mitigation measures.

Detailed analysis of potential impacts and benefits associated with the alternatives on aquatic resources was provided in Appendix O and summarized in Chapter 12. In preparing the EIS, Reclamation followed the appropriate legal process and is complying with NEPA regulations. Modeling used in the impact evaluations is described in Appendix O, Section O.2, *Methods and Tools*. Appendix F, *Modeling*, provides additional details on modeling conducted to support analysis of CVP and SWP LTO. A full suite of biological models was also used to analyze and compare the No Action Alternative and action alternatives. Numerous lines of evidence are presented in Appendix O. Thus, Reclamation is satisfied with the quantity, quality, and application of its quantitative analysis. Details on background, methods, assumptions and uncertainties, and results are included in the attachments for all biological models.

As described in Standard Response 5, the data, models, and literature used in the EIS are publicly available, and the methodologies used to apply these tools and information are described in Appendix O, Section O.2 and in the Methods section of each of the line of evidence attachments. The data, models, literature, and analyses have been subjected to review either as part of the customary practices of scientific publication or as part of this regulatory process. The impact analyses produced for the alternatives were themselves subject to review and comment by the general public (NEPA scoping process), experts in relevant scientific disciplines (Delta Science Program independent scientific expert review of the biological models), and expert staff from regulatory agencies having jurisdiction over one or more aspects of the alternatives or permitting (e.g., NMFS, USFWS, CDFW, and the U.S. Army Corps of Engineers). The modeling conducted for the EIS is based on reasonable assumptions and on appropriate, widely accepted modeling tools. Although Reclamation used an extensive array of modeling tools and analysis, Reclamation is not obligated to conduct an exhaustive analysis using every available approach, modeling tool, and data set (40 C.F.R. § 1502.23).

The impact analysis includes quantitative and qualitative analyses depending on availability of acceptable numerical analytical tools and available information. Since submission of the public Draft EIS, modeling for Alternative 2 and Alternative 4 has been updated to include the assumptions and actions for Alternative 2B and Alternative 4B, respectively. Alternatives 2B and 4B are no longer included in the EIS.

Structure of the Aquatics Analysis

Several comments noted that the EIS did not provide an assessment of alternatives effects on specific populations or species of aquatic resources, but the analyses were present and located in different sections of Appendix O. The easiest way to navigate Appendix O electronically is by using the bookmarks feature, which breaks the document down by headers and subheader sections (as identified in the contents at the beginning of the appendix). The impacts analysis for each species was done by comparison of each alternative to the No Action Alternative. Each alternative section opens with a geographic setting of the major geographies used in the analyses. Within those sections, the subheaders are organized by species, starting with Central Valley ESA-listed species.

- **No Action Alternative—Section O.3**
    - Species analyses organized by geography > component. Modeled results under the No Action Alternative are discussed in the alternatives sections (Sections O.4 through O.7), as each alternative relates to the No Action Alternative. These results include CalSim 3 flows, HEC-5Q temperatures, and quantitative predictions from secondary biological models: for example, temperature-dependent mortality (TDM) (Anderson and Martin); survival and routing from the Survival, Travel Time, and Routing Simulation Model (STARS); spawner abundance from the Science Integration Team (SIT) life cycle model.
- **Alternative 1—Section O.4**
    - Geographic setting sections with tables of CalSim 3 results by month (Sections O.4.1 through O.4.7 [Trinity River, Sacramento River, Bay-Delta, Clear Creek, American River, Stanislaus River, and San Joaquin River]).
    - Species analyses organized by geography > life stage > impact > line of evidence (analysis), and summary of impact (Sections O.4.8 through O.4.37).
- **Alternative 2—Section O.5**
    - Geographic setting sections with tables of CalSim 3 results by month (Sections O.5.1 through O.5.7 [Trinity River, Sacramento River, Bay-Delta, Clear Creek, Lower American River, Stanislaus River, and San Joaquin River]).
    - Species analyses organized by geography > life stage > impact > line of evidence (analysis), and summary of impact (Sections O.5.8 through O.5.37).
- **Alternative 3—Section O.6**
    - Geographic setting sections with tables of CalSim 3 results by month. Sections O.6.1 through O.6.7 (Trinity River, Sacramento River, Bay-Delta, Clear Creek, Lower American River, Stanislaus River, and San Joaquin River).
    - Species analyses organized by geography > life stage > impact > line of evidence (analysis), and summary of impact (Sections O.6.8 through O.6.37).
- **Alternative 4—Section O.7**
    - Geographic setting sections with tables of CalSim 3 results by month (Sections O.7.1 through O.7.7 [Trinity River, Sacramento River, Bay-Delta, Clear Creek, Lower American River, Stanislaus River, and San Joaquin River]).
    - Species analyses organized by geography > life stage > impact > line of evidence (analysis), and summary of impact (Sections O.7.8 through O.7.37).

Some commenters requested additional details on the criteria, thresholds, and literature used to inform the EIS's aquatic analysis. These details are in appendices and attachments within the EIS. Many lines of evidence are incorporated into the analyses presented in the EIS and broadly summarized in Chapter 12. Fish species overview, affected environment, and the results from the biological models are described in greater detail in Appendix O. Within Appendix O, there are cross-references to the attachments containing the lines of evidence that provide the most granular level of detail on the analysis performed, including an outline, background, methods, results, assumptions and uncertainty, and references. The following list comprises the Appendix O attachments containing lines of evidence.

- Attachment F.1, *Maunder and Deriso in R Model*
- Attachment F.2, *CVPIA SIT Winter-Run LCM*
- Attachment F.3, *CVPIA SIT Spring-Run LCM*
- Attachment F.4, *Delta Smelt USFWS LCM*
- Attachment F.5, *Interactive Object-Oriented Simulation Model*
- Attachment F.6, *Oncorhynchus Bayesian Analysis Model*
- Attachment F.7, *Change in Abundance Estimate of Central Valley Chinook Salmon Available to Southern Resident Killer Whales*
- Attachment I.1, *Negative Binomial Model*
- Attachment I.2, *Salvage-Density Model Loss Simulation*
- Attachment I.3, *Delta Export Zone of Influence Analysis*
- Attachment I.4, *Longfin Smelt Salvage-OMR Relationship*
- Attachment I.5, *Survival, Travel Time, and Routing Simulation Model*
- Attachment I.6, *Delta Passage Model: A Simulation Model of Chinook Survival, Routing, and Travel Time in the Sacramento–San Joaquin Delta*
- Attachment I.7, *ECO-PTM*
- Attachment I.8, *Particle Tracking Fate Modeling of Larval Smelt Entrainment*
- Attachment I.9, *Winter-Run Chinook Salmon Coded Wire Tag Salvage Model*
- Attachment I.10, *Flow into Junctions Analysis*
- Attachment J.1, *Longfin Smelt Outflow*
- Attachment J.2, *Sturgeon Year Class Index and Delta Outflow*
- Attachment J.3, *Zooplankton—Delta Outflow Analysis*
- Attachment J.4, *XT Model*

- Attachment J.5, *Flow Threshold Salmon Survival Model*
- Attachment J.6, *Bay-Delta Species Abundance—Delta Outflow Relationships*
- Attachment K.1, *Summer and Fall Habitat X2 Modeling and Analysis*
- Attachment L.1, *Sacramento River Water Temperature Analysis*
- Attachment L.2, *Egg-to-Fry Survival and Temperature-Dependent Mortality*
- Attachment L.3, *Winter-Run Chinook Salmon Juvenile Production Index Model*
- Attachment L.4, *Sacramento River Redd Dewatering Analysis*
- Attachment L.5, *Sacramento River Juvenile Stranding Analysis*
- Attachment M.1, *American River Redd Dewatering Analysis*
- Attachment M.2, *American River Water Temperature Analysis*
- Attachment M.3, *American River Weighted Usable Area Analysis*
- Attachment N.1, *Stanislaus River Water Temperature Analysis*
- Attachment N.2, *Stanislaus River Habitat Availability Analysis*
- Attachment O.1, *Clear Creek Weighted Usable Area Analysis*
- Attachment O.2, *CVPIA SIT LCM Habitat Estimates*
- Attachment O.3, *Sacramento River Weighted Usable Area Analysis*

The EIS also incorporates the Biological Assessment as Appendix AB, which has a chapter for each of the ESA-listed aquatic species.

Application of Modeling Results and Evaluation of Impacts

Some comments regarding the EIS's aquatic analysis questioned the application of modeling results and the sufficiency of the evaluation of project impacts. The impact analysis provided in the EIS was based on a wide range of analyses above and beyond what is typically compiled for water-based projects similar to the scope and complexity of the Coordinated LTO.

Several comments also noted the lack of standardized criteria to evaluate the overall magnitude of impacts. Individual subject-matter experts did not use standardized descriptors for impacts, and there were no set descriptors established that overlapped analysis throughout the document. Due to the extensive and diverse nature of the information, it was not appropriate to set universal descriptors. For example, a 1%–5% increase in flows may be categorized as minimal whereas a 4% increase in survival (within that 1%–5% range) may not be minimal, particularly in a dry or critically dry water year type. A 5% increase in flows in the mainstem Sacramento River will not be categorized the same way as a 5% increase in flows in Clear Creek will. Subject-matter experts integrated the information to provide the analysis in the EIS, as it was not deemed appropriate to use set descriptors and these determinations were left to expert judgment. Current descriptors are adequate in terms of context and intensity for NEPA significance threshold.

Because models have some level of uncertainty associated with the produced results, outputs should not be treated as actual predictive values. For example, concluding that there are effects associated with the alternatives relative to the No Action Alternative based on differences in flow model outputs of 1% is inappropriate, as this value is likely well within the uncertainty inherent in the model. Similarly, outputs from water temperature models are not representations of the actual water temperature experienced under a given model scenario and should be used only for a comparative analysis of alternatives.

Fall-run Chinook Salmon Impact Analysis and Mitigation

Several comments note concerns regarding impacts to fall-run Chinook salmon populations—such as redd dewatering, increased water temperature, and juvenile stranding—due to seasonal operations under "the Proposed Action," "the Preferred Alternative," "Alternative 2" or "Alternative 2B." Some comments also noted the importance of mitigation measures related to the impacts to fall-run Chinook salmon.

Reclamation acknowledges that lower releases may increase stressors associated with releases, but these risks must be weighed against the risk of insufficient storage to protect winter-run and spring-run Chinook salmon eggs and embryos from elevated water temperatures in the subsequent summer and fall. The decision about how much water to release for protection of the presently occurring fisheries resources versus how much to save for protection of the future resources is made every year under current conditions and would need to be made under the alternatives. In the Sacramento River, the largest expected differences in fall-run Chinook salmon redd dewatering are increases up to 15.6% for critically dry water years under Alternative 2 compared to the No Action Alternative (Attachment L.4). The largest expected reductions in redd dewatering are 7.2% for below normal water years under Alternative 2 compared to the No Action Alternative. The absolute differences are relatively low, ranging from -0.7% to 1.0%. For individual months, median redd dewatering is highest for the September spawning period under Alternative 2, which tends to have the lowest abundance of fall-run Chinook salmon spawners. (November is peak spawning.) The redd dewatering analysis for the lower American River suggests some large increases in fall-run Chinook salmon redd dewatering potential under the four phases of Alternative 2, but the absolute differences are relatively low (ranging from 1.4% to 2.5%). The redd dewatering values in the results tables are expressed as percentages of total (100%) redd loss, and the differences between the alternatives and the No Action Alternative are expressed as the percent change (relative change) from the No Action Alternative. Comparing percentages using percent change tends to inflate differences, particularly when the percentages are low. Therefore, absolute differences, which are simply the arithmetic differences in the redd dewatered values, may provide a more meaningful basis for comparisons (Attachment M.3).

Analyses of water temperature can also help inform potential impacts to fall-run Chinook salmon as a result of seasonal operations. The water temperature analyses provided in Appendix O, Section O.5.14.3, *Lower American River*, are separated by each life stage for both fall-run and late fall-run Chinook salmon in the American River. The analysis calculates the frequency that modeled water temperatures would either exceed temperature thresholds or occur outside the optimal range under each of the modeled alternatives compared to the No Action Alternative. The analysis for fall-run Chinook salmon in the lower American River suggests Alternative 2 would have both adverse and beneficial water temperature-related effects on fall-run Chinook

salmon spawning, egg incubation, juvenile rearing, and juvenile outmigration in the lower American River that vary based on location and phase (Attachment M.2).

Changes in operations under the alternatives were also evaluated for their potential to affect Chinook salmon prey in the ocean for Southern Resident killer whale (Southern Resident) relative to the No Action Alternative. Fall-run Chinook salmon make up the largest proportion of the runs of salmon analyzed. Several lines of evidence were used to generate the analysis (Salmort, XT, CVPIA SIT LCM, and DPM), and Attachment F.7 provides detailed results of all models and analyses. In this analysis, none of the Alternative 2 phases differed greatly from the No Action Alternative. Alternative 2 without TUCP with systemwide VAs was the only phase that resulted in increases of Southern Resident food relative to the No Action Alternative. The other three phases decrease the amount of Southern Resident food relative to the No Action Alternative, but the decrease is expected to be minor.

For each of the alternatives (1-4), there are two a mitigation measures aimed at improving fall-run Chinook salmon populations. Mitigation Measure AQUA-1 seeks to develop and implement a program to expand adult holding, spawning, egg incubation, and fry/juvenile rearing habitat for Chinook salmon and steelhead (see Appendix D, *Mitigation Measures*, Section D.10.1.2, *Additional Mitigation*). The program will be designed to improve fall-run Chinook spawning success, fry/juvenile survival, and production, thereby contributing to species recovery. Mitigation Measure AQUA-4 aims to assess the condition of fall-run Chinook salmon populations on CVP tributaries through a fall-run Chinook salmon brood year assessment for the previous year's cohort and the cohort of returning adults that hatched three years prior. The brood year assessment will be based on the best available science each year and teams may consider using indicators similar to the Annual Winter-run Chinook Brood Year Assessment that is part of Alternative 2. Information will be reviewed by technical teams coordinating specific divisions or watersheds and attached to the LTO Annual Report by Reclamation. Under Alternative 2, avoidance and minimization measures are designed to reduce risk to fall-run Chinook redd dewatering. The measure titled Fall and Winter Baseflows for Shasta Reservoir Refill and Redd Maintenance will build and conserve storage to balance coldwater pool management with salmonid redd dewatering risk. Baseflows are set annually to balance that risk in the coming fall and winter with the following year. The measure titled SRS Contractors: Delaying or Shifting Spring Diversions, Shifting Timing of Delivery of Transfer Water, Rice Decomposition Smoothing may impact stranding, redd dewatering, refuge habitat, and outmigration in the fall in the Sacramento River. The measure titled Redd Dewatering Protective Adjustment may decrease stranding and dewatering by softening changes in the minimum release requirements in the American River. The measure titled Winter Instability Flows may decrease water temperatures and provide more rearing habitat in the winter as the consequence of reducing reservoir storage and potentially increasing water temperatures in subsequent months in the Stanislaus River. Details on these measures are provided in Appendix D, Section D.10.2.1, *Avoidance and Minimization Measures*.

Sacramento River Seasonal Operations, Spring Pulse Flows, and Coldwater Pool Management

Several comments raised concerns regarding potential impacts arising from tradeoffs inherent in providing Shasta Reservoir releases at different times of the year. Other comments expressed concerns about the spring pulse flow component to release storage in wetter years, when coldwater pool storage is plentiful, to enhance spring pulse flows for emigrating juvenile Chinook salmon (Chapter 3, Section 3.2.1.3, *Spring Pulse Flows*; Section 3.4.1.4, *Sacramento River Pulse Flows*; Section 3.5.1.2, *Winter and Spring Pulses and Delta Outflow*). Commenters suggest that a pulse flow action might provide the most benefit if provided in drier years. Additional commenters suggested evaluating the use of spring pulse flows in late spring and summer while still protecting coldwater resources.

Storage in drier years is generally limited, and releasing storage in the spring of drier years is likely to reduce Reclamation's ability to maintain the coldwater pool resources needed in the following summer and fall to protect incubating eggs and alevins of winter-run Chinook salmon and spring-run Chinook salmon. Thus, the No Action Alternative, Alternative 2, and Alternative 3 include spring pulse flows, when they do not interfere with the ability to meet performance objectives or other anticipated operations of the reservoir.

Reclamation recognizes the importance of both potential immediate impacts and potential future impacts on salmon related to the levels of flow released in the fall and winter. Every fall and winter in which Shasta Reservoir storage is limited, Reclamation—in consultation with NMFS, CDFW, USFWS, DWR and interested parties—weighs the relative benefit of maintaining high Keswick Dam releases to minimize impacts on the current year's salmon eggs, fry, and juveniles against the potential impact on the next year's salmon eggs and fry from an insufficient supply of cold water in the reservoir. Reclamation has, annually and for years, been balancing known current fall-winter conditions against projected future spring-summer conditions.

AD.3.7.4 References Cited

Anderson, J. J., Beer, W. N., Israel, J. A., and Greene, S. 2022. Targeting River Operations to the Critical Thermal Window of Fish Incubation: Model and Case Study on Sacramento River Winter-Run Chinook Salmon. *River Research and Applications* 38:895–905.

Martin, B. T., Pike, A., John, S. N., Hamda, N., Roberts, J., Lindley, S. T., and Danner, E. M. 2017. Phenomenological vs. Biophysical Models of Thermal Stress in Aquatic Eggs. *Ecology Letters* 20:50–59.

State Water Resources Control Board. 2023. Draft Staff Report/Substitute Environmental Document in Support of Potential Updates to the Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta Estuary for the Sacramento River and its Tributaries, Delta Eastside Tributaries, and Delta. Sacramento, CA.

AD.3.8 Standard Response 8: Trinity River Division

AD.3.8.1 Consideration of Effects on the Trinity River in the LTO EIS

Reclamation intends to complete NEPA and ESA compliance on Central Valley actions considered in the Draft EIS no later than December 2024. The study area includes areas that could be affected directly or indirectly by the action alternatives, including water released from Lewiston Dam to the Trinity River, where it flows to the lower Klamath River. Under all alternatives in this EIS, the Trinity River Division (TRD) operations follow the 2000 ROD. The alternatives have a range of demands on Shasta Reservoir and the Central Valley, and therefore result in varied timing/quantities of Trinity River diversions. Modeling assumptions for the TRD operations are consistent across all alternatives; however, different proposed operations result in different modeled outputs. Minor deviations in Trinity flows shown in the EIS are a result of modeling but do not reflect an intention by Reclamation to deviate from the 2000 Trinity River ROD. Trinity River diversions in the EIS are within the range of effects under the 2000 ROD and current practices (e.g., fall flow augmentation in the lower Klamath and Trinity Rivers).

AD.3.8.2 Evaluation of a Proposed Action and Associated NEPA Compliance for the Trinity River Division

Sufficient new information exists to evaluate updating releases on the Trinity River and the diversion of water to the Central Valley. Due to the unique communities and trust responsibilities in the Trinity River Basin, the consideration of alternatives to update the 2000 ROD is on a different timeline than the rest of the CVP and SWP. Alternatives for the TRD are in development with the Hoopa Valley and Yurok Tribes as joint leads, and Reclamation anticipates subsequent environmental compliance needs.

Completion of the CVP and SWP analysis prior to the Trinity River analysis does not preclude additional modifications to CVP and SWP operations that could be necessary in response to proposed changes to Trinity River operations. Regardless of the approach to environmental compliance, the TRD is part of the CVP, and an analysis evaluating potential effects and trade-offs between CVP divisions as a complete system will be necessary. Reclamation will conduct additional public outreach in the Trinity River watershed, in coordination with the joint leads, once the Trinity-specific NEPA effort is further developed.

As part of its ESA compliance efforts, Reclamation will consult on the CVP facilities in the Trinity River Basin separately from the consultation on the rest of the CVP and SWP. A separate aquatic Biological Assessment will be prepared for the Trinity River Basin. The Trinity River Basin has different listed species, a different regulatory office overseeing the ESA consultation, specific Tribal interests, and additional interested parties and watershed management groups (i.e., Trinity Management Council) than the Central Valley and Delta. Reclamation, in coordination with the Tribes, intends to complete the NEPA and ESA processes for a decision on the potential for new TRD operations by the end of 2025. Additionally, Reclamation has added an environmental justice mitigation measure related to the TRD operation:

- **Mitigation Measure EJ-3: Increasing Participation with Trinity River Parties.** With regards to the Trinity River reconsultation effort, Reclamation will hold a public meeting in Trinity County to hear from local interests on Trinity River–specific alternatives and potential impacts.

AD.3.8.3 References Cited

None.

AD.3.9 Standard Response 9: Climate Change

Comments were raised about climate change, including how climate change was considered in the analysis of alternatives, having a climate change-based alternative, and how modeling incorporated climate change.

AD.3.9.1 Climate Change Analysis

The Draft EIS used a climate change outlook centered around 2022 that takes into account realized warming over the historical period of record as well as the increase in temperatures from 2008 to 2037. Essentially, this approach uses a projection period through 2037 to adjust historical hydrology for the entire period of record (1921–2022) combined with linear temperature detrending over the period of record.

Section F.3.1, *Climate Change and Sea Level Rise*, of Appendix F, *Modeling*, describes how climate change impacts were analyzed through updating CalSim 3 meteorologic and hydrologic boundary conditions for LTO. Section F.3.1 of Appendix F specifies that the climate change impact representing 2022±15 climate conditions were analyzed by updating CalSim 3 meteorologic and hydrologic boundary conditions for LTO. The 2022±15 future climate condition was developed with 40 Coupled Model Intercomparison Project Phase 5 (CMIP5) global climate projections, selected for LTO. Future climate change analysis was based on the 2022 median climate change scenario. In addition to those conditions, model simulations also include 15 centimeters of sea level rise.

Attachment F.1-1, *Climate Change*, of Appendix F includes documentation of climate change as considered in CalSim 3. It further explains that a set of different scenarios—to characterize the range of climate uncertainty from future emissions and the climate response around the 2022±15 median climate condition—was developed representing 2022±15 hot-dry, 2022±15 warm-wet, and 2040±15 median conditions. All climate scenarios were developed by calculating and imposing different amounts of climate change onto the historical CalSim input. Attachment F.1-1 describes how change factors were developed and applied to the historical CalSim datasets. As selected examples of parameters, projected change in long-term average precipitation, projected change in long-term average temperature, and projected reduction in snowpack volume and earlier snowmelt for major watersheds in the Sacramento and San Joaquin River Basins were incorporated into modeling.

Climate change analyses were conducted to establish how valley floor and rim watershed hydrology may change under future conditions. This hydrology was propagated through primary and secondary models to maintain consistent temperature, precipitation, sea level, and other hydrologic assumptions among the models within a specific climate change scenario. The manner in which climate information was implemented within each model is specific to that model and was done to most appropriately reflect future climate conditions while maintaining consistency with other modeling products. All alternatives are consistently simulated with this approach. Thus, the analyses of impacts to resources in the Draft EIS incorporate modeling outputs with built-in consideration of climate change. For example, the analysis of visual changes at reservoirs in Appendix N, *Visual Resources Technical Appendix*, is dependent on CalSim 3 outputs related to changes of water volume stored at reservoirs and changes in reservoir elevations with a future climate change scenario in place. Refer to Attachment F.1-1 for additional detail about how climate change was incorporated into CalSim3.

AD.3.9.2 Climate-Change-Based Alternative

While there was a request for an alternative that considered climate change, the analysis of all four alternatives and the No Action Alternative included climate change assumptions, as explained above. Therefore, this suggestion is already factored into the alternatives evaluated in the Draft EIS.

AD.3.9.3 References Cited

None.

AD.3.10 Standard Response 10: Voluntary Agreements

Voluntary Agreements (VAs) are also referred to as the Healthy Rivers and Landscapes Program, and both terms are used in this Standard Response, as appropriate.

Comments were received questioning the certainty, effectiveness, and representation of VAs in the EIS. Commentors also provided inclusion of the VAs as a reason to oppose selection of Alternative 2. Alternative 2 contains four phases: Alternative 2 with Temporary Urgency Change Petitions, Alternative 2 without Voluntary Agreements, Alternative 2 with Early Implementation of Delta Voluntary Agreements, and Alternative 2 with Implementation of All Voluntary Agreements. VA components outside of Reclamation's discretion are analyzed in Appendix Y, *Cumulative Impacts Technical Appendix.*

The EIS provides sufficient detail to analyze potential impacts from the VAs. While Chapter 3, *Alternatives*, contains a description of Alternative 2, Appendix E, *Alternatives*, contains additional details about the VAs (e.g., Appendix E, Section E.5.7.3, *Spring Delta Outflow*). As such, this Standard Response refers to content within that appendix, with specific references to the location of that information, as appropriate.

AD.3.10.1 Definition of Voluntary Agreements

Reclamation proposes in the EIS to operate consistent with provisions included in the *Memorandum of Understanding Advancing a Term Sheet for the Voluntary Agreements to Update and Implement the Bay-Delta Water Quality Control Plan*, *and Other Related Actions,* dated March 29, 2022 (Voluntary Agreements Parties 2022), and as further developed by the VA parties as part of the State Water Resources Control Board's (SWRCB's) ongoing process to update the Bay-Delta Water Quality Control Plan and the Spring Delta Outflow provisions identified in this EIS. The Draft EIS, specifically tables F.2.4-7 through F.2.4-10 of Appendix F, *Modeling,* Attachment F.2-4, *CalSim 3—Water Supply*, presents the most current information and best available representation of Healthy Rivers and Landscapes operations related to the CVP and SWP export reductions, Shasta and Folsom Reservoir reoperations, and Delta water purchase program.

The memorandum mentioned above includes signatories from multiple agencies of the State of California, Reclamation, and broad public water agency representation.

AD.3.10.2 Accounting for Voluntary Agreements

Reclamation simultaneously engaged in VA discussions and tracked consistency and the interrelatedness of the processes during development of alternatives (Reclamation 2022). VA accounting, however, is a process outside of this consultation, which is still being finalized by the Healthy Rivers and Landscapes Parties and subject to review and consideration by the SWRCB as part of its update to the *Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta Estuary* (Bay-Delta Plan).

AD.3.10.3 Uncertainty Associated with Voluntary Agreements

If the VAs are not approved by the SWRCB or implemented by the parties, Alternative 2 without VAs would be implementable by Reclamation. Note that, as described in Appendix E, Section E.5.7.3, the Draft EIS describes Reclamation Early Implementation and Reclamation Post Early Implementation. Early Implementation would last up to 2 years, with a shorter duration possible if the SWRCB adopts its update to the Bay-Delta Plan prior to 2 years from adoption of the Record of Decision. The Draft EIS also describes Reclamation's operations after the early implementation period of up to 2 years if VAs are adopted and implemented and if VAs are not adopted and implemented.

AD.3.10.4 Effectiveness and Effects of Voluntary Agreements

The Draft EIS uses reliable information and tools to represent Reclamation's understanding of proposed system operations and related performance under the different phases representing the VAs. All four phases (described above) are considered in the assessment of Alternative 2 to demonstrate the range of potential impacts (both beneficial and adverse) that could occur due to implementation of VAs. Throughout the resource sections of the EIS, as well as in their corresponding appendices, the impacts of each phase of Alternative 2 are evaluated and discussed. This evaluation includes impacts to aquatic species.

As explained in Appendix F, Section F.1-1, *CalSim 3, DSM2, and HEC5Q Modeling Simulations and Assumptions*, Multi-Agency Consensus (Early Implementation Voluntary Agreements)—Alternative 2 v2—was modeled using CalSim 3 (Section F.1-1.5, *Alternative 2 v2—Multi-*

Agency Consensus [Early Implementation Voluntary Agreements]). Under Section F.1-1.5.5.8, *Sacramento–San Joaquin Delta*, there is a section called Voluntary Agreements that characterizes export cuts for the CVP, cuts to corresponding water use and deliveries, and cuts for the SWP under the Sacramento VA for the Sacramento–San Joaquin Delta. These cuts are shown in Table F.1-16 and Table F.1-17.

Appendix F, Section F-1.1 describes the Multi-Agency Consensus (All Voluntary Agreements)—Alternative 2 v3—as modeled using CalSim 3 (Section F.1-1.6, *Alternative 2 v3—Multi-Agency Consensus [All Voluntary Agreements]*). Under Section F.1-1.6.5.3, *Sacramento River*, there is a section called Voluntary Agreements that includes assumptions used for implementing the Sacramento VA and the Putah Creek VA. Similar sections are provided for the Feather River for the Feather VA (Section F.1-1.6.5.4), the American River for the American VA (Section F.1-1.6.5.5), the San Joaquin River for the Friant VA (Section F.1-1.6.5.7), and Sacramento–San Joaquin Delta for the Delta VA and Mokelumne VA (F.1-1.6.5.8).

Spring Delta Outflow is proposed by Reclamation and DWR in the quantities and timing described in Section E.5.7.3 of Appendix E. Annual management would be subject to assessment of real-time conditions by Reclamation and DWR, after coordination with the Healthy Rivers and Landscape Systemwide Governance Group and WOMT. This coordination, in part, with the responsible state and federal fishery agencies ensures the Spring Delta Outflow maximizes benefits for listed species.

AD.3.10.5 References Cited

Bureau of Reclamation. 2022. Screened Scoping Comments. Appendix V in Long-Term Operation: Initial Alternatives Central Valley Project. Report. September. Sacramento, CA. Available: https://www.usbr.gov/mp/bdo/docs/lto-2021-initial-alt-2022-09-30-app-v.pdf.

Voluntary Agreements Parties. 2022. Memorandum of Understanding Advancing a Term Sheet for the Voluntary Agreements to Update and Implement the Bay-Delta Water Quality Control Plan, and Other Related Actions. Available: https://resources.ca.gov/-/media/CNRA-Website/Files/NewsRoom/Voluntary-Agreement-Package-March-29-2022.pdf.

AD.3.11 Standard Response 11: Summer Fall Habitat Action

Reclamation received a number of comments on the Summer Fall Habitat Action, including the Fall X2 component. Comments included statements that (1) the alternatives should not include Fall X2 measures; (2) the Fall X2 action does not provide a benefit to Delta smelt; (3) the EIS should clarify the Summer X2 measure based on the USFWS 2024 Draft Biological Opinion; (4) alternatives should provide greater low salinity habitat in the summer; and (5) the alternatives should include adaptive management similar to the framework included for the Summer Fall Habitat Action in the 2019 USFWS Biological Opinion. These comments are addressed in this Standard Response, which also discusses findings in the USFWS 2024 Draft Biological Opinion regarding benefits to Delta smelt from a Fall X2 and Summer X2 measure and the different approaches to the Summer Fall Habitat Action for Delta smelt contained within the range of reasonable alternatives.

AD.3.11.1 Recent Science Developments on Summer Fall Habitat Action

The USFWS's 2024 Draft Biological Opinion concluded the following from the life cycle modeling (Polansky et al. 2024) conducted for the Proposed Action (Alternative 2 in the Final EIS) included in Reclamation's 2021 Biological Assessment:

1. Contemporary life cycle modeling supports the hypothesis that high summer outflow can contribute to beneficial effects but does not support the hypothesis that variation in fall outflow does. Life cycle models suggest that absent supplementation, delta smelt would continue to decline at rates similar to those predicted from the 2019 PA (NAA). However, one model predicts a much steeper rate of decline and was unresponsive to small variations in proposed project operations.
2. The PA for June through October does not appear to meaningfully differ from a 2019 operation except in the driest June scenarios.
3. Delta smelt will gain a foraging benefit from the use of the SMSCG to lower salinity in Suisun Marsh. This benefit will be unlikely prior to at least September in Dry years when the Beldon's Landing salinity target is 6 PSU.
4. The anticipated foraging benefits from SMSCG operations could be partly offset by entrainment onto managed wetlands, particularly during fall flood up.
5. The Fall X2 action is not anticipated to have observable effects on delta smelt survival.
6. Since there may be circumstances when measurable benefits could be achieved with outflow augmentations, adaptive experimentation regarding flow pulses in the summer or fall could be helpful.

AD.3.11.2 Summer Fall Habitat Action Characterization in the FEIS Alternatives

To address recent scientific information regarding the Summer Fall Habitat Action and, more specifically, the findings described in the USFWS 2024 Draft Biological Opinion, Reclamation ensured that the range of reasonable alternatives presented in the Final EIS contains different management approaches to the Summer Fall Habitat Action, as described here.

- **No Action Alternative.** Reclamation and DWR would manage X2 to 80 kilometers (km) in wet and above normal years, operate the Suisun Marsh Salinity Control Gate (SMSCG) in below normal and above normal years, and undertake food enhancement actions developed through structured decision making. DWR would operate the SMSCG based on 4 parts per thousand at Belden's Landing. The No Action Alternative includes the potential for Reclamation and DWR to work collaboratively with USFWS to adaptively manage and implement new actions in lieu of the salinity management action in order to provide similar or better protection than the 80 km salinity management action in consideration of habitat acreages, recruitment projections based on lifecycle modeling, and the presence (or absence) of Delta smelt.
- **Alternative 1.** Alternative 1 does not include Summer Fall Habitat Action. Reclamation and DWR would operate to achieve X2 westward locations required by D-1641's outflow and salinity objectives. Reclamation and DWR would operate the SMSCG for the additional month of September as required by the Suisun Marsh Preservation Agreement.

- **Alternative 2.** Reclamation would increase the amount of low-salinity zone habitat for Delta smelt in wet and above normal hydrologic year types. Reclamation and DWR would maintain a 30-day average X2 ≤ 80 km for September through October. In June through October during above normal, below normal, and dry years following wet or above normal years, DWR will operate SMSCG for 60 days to maximize the number of days that Belden's Landing 3-day average salinity is equal to or less than 4 practical salinity units (psu). In dry years following below normal years, DWR will operate SMSCG for 30 days to maximize the number of days Belden's Landing 3-day salinity is equal to or less than 6 psu. Through the adaptive management program, DWR and Reclamation may propose alternative operations of the SMSCG for the Water Operations Management Team to consider and implement.
- **Alternative 2 Sensitivity Study.** Following the USFWS 2024 Draft Biological Opinion, Reclamation developed a habitat sensitivity analysis based off the preferred alternative (Alternative 2) to define the water cost of an alternative Summer Fall Habitat Action. In the sensitivity analysis, Fall X2 was operated to 85 km in September and October in wet and above normal years, and a June Delta outflow requirement of 10,000 cubic feet per second (cfs) was added, also in wet and above normal years. Flows for the June Delta outflow requirement were provided by the CVP and SWP according to the 1986 Coordinated Operation Agreement. The June Delta outflow requirement was developed based on an ongoing study (Polansky et al. 2024).
- **Alternative 3.** Alternative 3 is the same as Alternative 2, except releases from upstream reservoirs are constrained to a Delta outflow of 7,100 cfs in November of wet and above normal years as described in Appendix E, *Alternatives*, Table E-23, Maximum Required Delta Outflow Criteria by Month and Water Year Type. Fall salinity may vary based on the ability of export reductions to achieve Fall X2 subject to public health and safety.
- **Alternative 4.** Reclamation and DWR would maintain X2 ≤ 85 km for September through October, and SMSCG would only be operated in below normal, above normal, and wet years.

AD.3.11.3 References Cited

Polansky, L., L. Mitchell, and M. L. Nobriga. 2024. Identifying Minimum Freshwater Habitat Conditions for an Endangered Fish Using Life Cycle Analysis. *Conservation Science and Practice* 6(5):e13124. Available: https://doi.org/10.1111/csp2.13124.

Section AD.4 Comment Tables

Table 4-1. Letter No. 1

Ltr#-Cmt#	Comment	Response
1-1	This is a request for extension of time to comment on the U.S. Bureau of Reclamation Draft Environmental Impact Statement on Long-Term Operations of the Central Valley Project (CVP) and State Water Project (SWP.) The Draft EIS was issued July 26, 2024, with a designated 45-day public review period ending September 9, 2024. That is the minimum time period an agency is permitted to afford. This request is made on behalf of our public interest organizations: Sierra Club California, AquAlliance, California Water Impact Network, Center for Biological Diversity, Environmental Water Caucus, Friends of the River, Planning and Conservation League, and Restore the Delta. The NEPA Regulations (codified at 40 CFR § 1500.1 et seq.) specify "Page limits" for an EIS as follows in § 1502.7, The text of final environmental impact statements, not including citations or appendices, shall not exceed 150 pages except for proposals of extraordinary complexity, which shall not exceed 300 pages. (Emphasis added.) The text of the Draft EIS exceeds 300 pages, amounting to a total of 415 pages. We count a total of 113 separate appendixes and attachments for the Draft EIS. By our count, these appendixes and attachments amount to 18,738 pages. It is not possible for a normal human being to read, comprehend, and be able to respond with detailed, focused written comments to this huge volume of written material on a proposal "of extraordinary complexity" in 45 days. We request that the Bureau of Reclamation grant an extension extending the comment period for at least 90 days after September 9, 2024, to afford public interest organizations and interested citizens a reasonable opportunity to understand the environmental impacts of the Project and prepare meaningful comments on the Draft EIS.	Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the duration of the comment period.
1-2	The contact for this Request is E. Robert Wright, Counsel, Sierra Club California [phone number] or [email address]. We will do our best to answer any questions you may have.	This is not a comment on the EIS.

Ltr#-Cmt#	Comment	Response
1-3	Please read our attached short (one page of text) letter requesting an extension of time to comment on the Bureau of Reclamation Draft EIS on Long-Term operations of the CVP and SWP issued July 26, 2024. This request is submitted on behalf of our 8 public interest organizations.	Please see response to comment 1-1 regarding the duration of the comment period.
1-4	Please reply confirming receipt of this request.	This is not a comment on the EIS.

Table 4-2. Letter No. 2

Ltr#-Cmt#	Comment	Response
2-1	This comment letter was submitted as reference material associated with the verbal comments provided by Federico Barajas, Executive Director of the San Luis & Delta-Mendota Water Authority at the public meeting for the Draft EIS held in Los Banos, CA on August 7, 2024. This comment is from the San Luis & Delta-Mendota Water Authority to the California Department of Water Resources on the Environmental Impact Report for the Long-Term Operation of the State Water Project in the Sacramento-San Joaquin Delta, Suisun Marsh, and Suisun Bay.	Please see the responses to comments provided for letters 12 and 80, which were also submitted by the San Luis Delta Mendota Water Authority. This information, submitted as reference material, contains comments on the Draft EIR for the Long-Term Operation of the State Water Project in the Sacramento–San Joaquin Delta, Suisun Marsh, and Suisun Bay. Reclamation has reviewed and considered these comments in the preparation of the final EIS. As confirmed by the commenter, these comments have been submitted to the Department of Water Resources as part of the CEQA process.

Table 4-4. Letter No. 4

Ltr #-Cmt#	Comment	Response
4-1	Regarding spring pulse flows: Current management is causing the take of listed steelhead during spawning. There is mortality occurring that has not been taken into account. The drop and instability in flow caused massive predation of outmigrating salmon by striped bass especially salmon released mid-river in the middle of a low period at the same time as the striped bass spawning migration. This big of a loss is preventable and the fact that this occurred is absolutely infuriating. The take of listed steelhead (and wild trout) has caused a negative economic impact on local communities in Shasta and Tehama counties.	Spawning habitat is specifically addressed in Appendix O, Section O.1.3.4, Aquatic Habitat. For example, within the discussion of "Spawning Habitat Availability," this appendix recognizes that reductions in flow may result in dewatering of redds and mortality of incubating eggs and alevins. Coleman hatchery releases are decided by USFWS, which uses a planning process that prioritizes releases during the spring when storms increase river flows and floodplain inundation. When these conditions do not occur, USFWS considers alternative criteria. As part of Alternative 2, Reclamation will provide additional releases from Shasta designed as functional flows to support juvenile salmonid outmigration survival in March-May, and USFWS may decide to plan for hatchery releases during these periods. Stranding of juvenile salmonids has been monitored under previous operation plans and the No Action Alternative and summarized in the Initial Alternative Report Appendix AB-L-Shasta Coldwater Pool Management. These observations suggest reductions to releases of no less than 3,750cfs can help avoid substantial juvenile stranding. Reduced October and November flows support less redd dewatering during winter base flow periods. Analyses on spring-run Chinook salmon for the preferred alternative in Appendix AB - Biological Assessment – Chapter 6, use fall run stranding observation to analyze spring run potential stranding. Table 18 showed fall-run Chinook salmon counts to be between 10 and 10,000 fall-run Chinook juveniles, which are a small percentage of juvenile fish passing Red Bluff Diversion Dam.

Ltr #-Cmt#	Comment	Response
		Reclamation's Alternative 2 includes increased releases to support juvenile outmigration by increasing velocities and conditions unfavorable to predation. Predation is also specifically addressed in Section O.1.3.8, Predation, and the discussion acknowledges predation by various species such as bass. Economic impacts are discussed in Draft EIS Chapter 14, Regional Economics, and Appendix Q, Regional Economics Technical Appendix. The economics analysis in the Draft EIS concluded that Potential Fisheries-Related Changes to the Regional Economy under Alternative 2 are expected to be minimal (Section Q.2.4.5).
4-2	Management causing the elimination of bug life and marine derived nutrients is having a negative economic impact on local communities. Please consider utilizing a 'pulse' flow without the drops. If Reclamation continues with a similar release schedule in 2025 numerous small businesses will suffer even more severe impact than what we experienced in 2024.	Bug life (more specifically macroinvertebrates) can be affected by flow intensity and can simplify the bug life community to filtering out taxa with nonadaptive traits and spatially synchronizing their dynamics. We are studying the food web in the upper Sacramento River to understand this better, and initial results document a fairly stable summer and fall bug community. Alternative 2 includes an adaptive management program that may test modifications within the range of impacts analyzed in the Draft EIS. Discussions about unintended effects of pulse flows in the food web may be discussed in that framework to determine if implementation may be modified. Text has been added to the Final EIS to disclose unintended potential effects of pulse flows.
4-3	Consider funding a program to infuse carcasses from Coleman hatchery back into the river. The nutrients from salmon carcasses are undeniably beneficial to the entire food chain. This last fall and winter I personally participated in a volunteer program to place carcasses from Coleman back into the river. I immediately witnessed results by periodically checking deposit sites. Within a matter of hours there were trout, steelhead,	A Carcass Program for Coleman National Fish Hatchery would be out of scope of this EIS. Coleman NFH is a production hatchery with separate NEPA compliance and permits which are independent from the LTO.

Ltr #-Cmt#	Comment	Response
	pikeminnows, juvenile fish of various species, and crawdads feeding on carcasses. I even saw a large striped bass swimming with a jack salmon sticking out of its mouth like a cigar. This program at any larger scale would be unsustainable by volunteers alone (most were out of work salmon guides who are struggling even more in 2024 with zero disaster relief). At a time when the river and it's occupants are struggling this would help throw them a lifeline. The norcal guides and sportsmans association has the small volunteer program in place but a larger scale would require funding. It's been quoted by staff that placing carcasses in-river can't be done at a large enough scale to see benefits. Our industry would like to see that perspective changed to a more open minded one in which Reclamation and USFWS exhaust all means to assist the damaged fisheries in recovery and eventually enhancement.	
4-4	Fall run salmon: Any option that allows for redd dewatering or stranding is absolutely unacceptable. The fall run is in peril and we can't afford to lose a single one at this point. I am so utterly disappointed and frustrated that continuing damage to the fall run is acceptable! Does Reclamation not recognize the economic and cultural impact fall run salmon have on Californians? Especially in underserved rural communities? Reclamation has played a major role in destroying fall run salmon. 2024 is expected to be the lowest return in history and Reclamation believes continuously dewatering them to be acceptable?! Reclamation needs to take responsibility for the years of management decisions that have played a role in the fall run collapse.	Reclamation recognizes the importance of the fall-run Chinook salmon fishery. As indicated in EIS Chapter 2, Section 2.1, Purpose and Need, the purpose of the proposed action being considered is to continue the operation of the Central Valley Project (CVP) and the State Water Project (SWP), for authorized purposes, in a manner that achieves the following: • Meets requirements under federal Reclamation law; other federal laws and regulations; and State of California water rights, permits, and licenses pursuant to Section 8 of the Reclamation Act • Satisfies Reclamation contractual obligations and agreements • Implements authorized CVP fish and wildlife project purposes and meets federal trust responsibilities to tribes, including those in the Central Valley Project Improvement Act Operation of the CVP and SWP is needed to meet multiple authorized purposes, including flood control and navigation; water

Ltr #-Cmt#	Comment	Response
		supply; fish and wildlife mitigation, protection, and restoration and enhancement; and power generation. Operation of the CVP and SWP also provides recreation and water quality benefits. Economic impacts associated with the alternatives are discussed in Draft EIS Chapter 14 and Appendix Q. Please see Standard Response 7, Aquatic Resources, section Response to General Comments Regarding Adverse Impacts on Aquatic Resources, regarding adverse impacts on salmonids and section Fall-Run Chinook Salmon Impact Analysis & Mitigation for further details on avoidance and minimization measures proposed in Alternative 2.
4-5	Reclamation must fund a repopulation program for the main stem Sacramento immediately. Reclamation should have a plan for more aggressive mitigation measures during drought periods. Plan ahead and inject more eggs fry and smolt into the system when it's known that poor conditions will exist. If you are going to dewater redds anyway make up for the loss. Base that mitigation on what the natural spawning population should be and ensure that steps are made to increase the probability of those fish actually returning (unlike Coleman's CWT smolt program). Take aggressive action to repopulate the natural spawning component. CWT programs are not working. Release portfolios for hatchery origin have to be diversified. Sending smolt downriver during the striped bass spawning run is absolutely crazy. If you have ever witnessed a striper feeding frenzy (boil) on juvenile salmon you may understand our frustration. There are many many alternatives that Reclamation could support in lieu of the unsuccessful CWT smolt program. Reclamation should support and fund parental based tagging so that release strategies can be diversified. If trucking of juvenile salmon is necessary during drought conditions they may experience a higher return rate when raised on	Hatchery operations and releases have their own separate environmental compliance and separate permitting process and are not within the Scope of this EIS. Hatchery operations are examined in the Appendix Y Cumulative Effects. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis and mitigation.

Ltr #-Cmt#	Comment	Response
	Sacramento River water not battle creek water. Trucking from Coleman fails (except to mid-river release site). Reclamation should consider supporting an expansion of livingstone stone to accommodate a population of fall run that could be released both in-river or trucked. This could help jumpstart the natural spawning component. At the very minimum fund an experiment to release Sacramento River water raised fish. Consider the private sector for raising additional mitigation fish. Coleman does not have the capacity. There are facilities that could assist immediately.	
4-6	Immediately investigate the death zone between the experimental mid-river release site and Coleman and identify how water operations are involved. If survival and return rate is so dramatically higher from mid-river releases does that not point to a major issue between those 2 locations?	Refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, regarding the affected environment and the impacts of the alternatives on fish survival and return rates. Refer to Standard Response 7, Aquatic Resources, regarding the impact analysis and Sacramento River seasonal operations.
4-7	Additional concerns: Earlier this year the Sacramento River in Shasta County experienced a significant scouring event. Reclamation should identify what flows cause the highest impact scouring and take steps to avoid those flows (if I understand correctly scouring may take place in a manner that is not linear; for example significant scouring may occur at 40k cfs but not at 60k cfs).	Flows over about 40,000 cfs in both the Sacramento and American rivers have been found to result in significant mobilization of sediments, which can lead to redd scour and entombment (Cain and Monohan 2008; Ayres Associates 2001; Fairman 2007). It should be noted that 40,000 cfs is likely to be a conservative estimate for redd scour because at the shallow locations of a streambed where salmonids generally spawn the flows needed to scour redds may be significantly greater than those that initiate bed mobility at midchannel locations (May et al. 2009). Flows at 40,000 cfs or more would generally not be affected by operations of the Project or the alternatives because they tend to result from storm runoff events. Flows initiating significant sediment mobilization in the Feather and Stanislaus rivers and Clear Creek are likely also greater than the range affected by Project operations.

Ltr #-Cmt#	Comment	Response
		Ayres Associates. 2001. Two-Dimensional Modeling of the Lower American River and Analysis of Spawning Bed Mobilization. Presented to Lower American River Task Force Fish Working Group Technical Subcommittee. April 27, 2001, Slide Show Presentation. Cain, J. and C. Monohan, 2008. Estimating Ecologically Based Flow Targets for the Sacramento and Feather Rivers. The Natural Heritage Institute, April 2008. Fairman, D. 2007. A Gravel Budget for the Lower American River. MS Thesis. California State University, Sacramento, CA. May, C., B. Pryor, T. Lisle, and M. Lang. 2009. Coupling Hydrodynamic Modeling and Empirical Measures of Bed Mobility to Predict the Risk of Scour and Fill of Salmon Redds in a Large Regulated River. Water Resources Research 45:1-22.
4-8	Please take more consideration of impact on our local economy traditions and culture here in Shasta and tehama counties when making management decisions and evalating 'options'. As of right now anglers guides small businesses and residents are feeling like we don't have a seat at the table and our voices don't get heard. The impression is that Reclamation has their mind made up already and the public comment process is a formality that is disregarded. The recreational fishing community and tourism industry seems to be getting left out especially in rural areas.	Reclamation appreciates this comment. The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the proposed action and the action alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. More specifically, potential effects on cultural resources, economics, and recreation are discussed in Chapter 8, Cultural Resources, Chapter 14, Regional Economics, and Chapter 16, Recreation, respectively. Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the adequacy of public outreach. Reclamation is seeking public input prior to the Record of Decision to aid in the determination of the selected alternatives. No irretrievable and irrevocable commitments have been made at this time.

Ltr #-Cmt#	Comment	Response
4-9	Personally my fishing business and my family have suffered greatly at the hands of Reclamation USFWS and CDFW's management decisions. First the fall run salmon collapse and now the trout/steelhead fishing is being greatly damaged. Are there any anadromous fish left that are not in peril? Has anything gotten better on this river in the last 15 years? Rural communities and the fisheries many of us rely on are taking hit after hit and it's beyond unacceptable.	Text has been added in the Affected Environment section of Chapter 14, Regional Economics, and Appendix Q, Regional Economics Technical Appendix, to express this concern.

Table 4-5. Letter No. 5

Ltr#-Cmt#	Comment	Response
5-1	On behalf of Sacramento County, Sacramento County Water Agency, Sacramento Area Sewer District, and the City of Stockton, we request a 30-day extension—from Monday, September 9, 2024, to Wednesday, October 9, 2024—to submit comments on the July 2024 Draft Environmental Impact Statement (EIS) for the Long-Term Operations of the Central Valley Project and State Water Project. Our clients are local agencies with limited staff resources and competing demands on staff time and, therefore, require additional time to review the full extent of the environmental documentation included in the EIS.	Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the duration of the comment period.

Table 4-6. Letter No. 6

Ltr #-Cmt#	Comment	Response
6-1	FORMAT The formatting of your document and chapters does not follow CEQ regulations (40 CFR 1500). It is difficult to follow topics of concern under your format.	Please refer to Standard Response 1, Responses to General Comments and Comments About Public Agencies, regarding the structure of the document given NEPA regulations requiring page limits. 40 CFR section 1502.10(a) states that, "Agencies should use the following standard format for environmental impact statements unless the agency determines that there is a more effective format for communication: (1) Cover. (2) Summary. (3) Table of contents. (4) Purpose of and need for action. (5) Alternatives including the proposed action. (6) Affected environment and environmental consequences. (7) Submitted alternatives, information, and analysis. (8) List of preparers. (9) Appendices (if any)." [Internal citations omitted] Section 1502.10(b) states, "If an agency uses a different format, it shall include paragraphs (a)(1) through (8) of this section, as further described in §§ 1502.11 through 1502.19, in any appropriate format." The Draft EIS is organized as follows, containing the required content as outlined in the Code of Federal Regulations: Cover, Table of Contents, Chapter 0: Executive Summary; Chapter 1: Introduction, Chapter 2: Purpose and Need, Chapter 3: Draft Alternatives, Chapters 4 through 22: Affected Environment and Environmental Consequences by resource area, appendices. Appendix A contains the list of preparers. Regarding the scoping comment summary, refer to Standard Response 1.

Ltr #-Cmt#	Comment	Response
6-2	NATIVE TRIBES AND CULTURAL RESOURCES While you state this (BOR 2024): "Reclamation continues to coordinate with interested Tribes on CVP operations. Reclamation is separately and concurrently coordinating with the Hoopa Valley Tribe and the Yurok Tribe as joint leads (40 CFR 1501) on Trinity River-specific considerations to develop potential Trinity River-specific alternatives for an updated operation for releases to the Trinity River and diversions from the Trinity River Basin to the Central Valley." there is no mention of the Winnemem Wintu Middle Water People anywhere in the document and they would be considered interested based on their long term presence in the area. The Winnemem Wintu are a traditional tribe who inhabit their ancestral territory from Buliyum Puyuuk (Mt. Shasta) down the Winnemem Waywaket (McCloud River) watershed. When the Shasta Dam was constructed during World War II it flooded their home and blocked the salmon runs (http://www.winnememwintu.us/). The Winnemem Wintu are indigenous to northern California and have been formally recognized by the California Native American Heritage Commission an agency of the State of California with responsibility for preserving and protecting Native American sites and cultural resources in California. We once numbered approximately 14000; by 1910 after several decades of conflict with white settlers that number had plummeted to 400. Today the tribe's population is approximately 150 (http://www.winnememwintu.us/).Archeological and ethnographic studies indicate that the Winnenmem Wintu have lived in their ancestral homelands for at least 6000 years but their traditional knowledge and stories provide evidence they have been here for far longer (Garrett 2010 Ngo 2010). The Winnemem Wintu indicate that they are intimately connected to the Winnemem Waywaket (McCloud River) Buliyum Puyuuk	Cultural resources are addressed in the Draft EIS in Chapter 7 and Appendix J, Indian Trust Assets, and Chapter 8 and Appendix K, Cultural Resources. ITAs are legal interests in property held in trust by the United States for federally recognized Indian Tribes or individual Indians. As noted by the commenter, the Winnemem Wintu Tribe is not federally recognized. As a result, there are no Indian Trust Assets held by the United States for the Winnemem Wintu Tribe. For cultural resources, the Draft EIS concludes in Section 8.2.1 that Alternatives 1 through 4 do not have the potential to adversely affect historic properties, if they are present, because no actions would result in alteration, damage, or demolition of historic properties. This conclusion is based on the potential for action alternatives to result in changes of storage that cause increases and decreases in storage at reservoirs. Reclamation has incorporated information from the Winnemem Wintu into Cultural Resources.

Ltr #-Cmt#	Comment	Response
	(Mount Shasta) and the surrounding meadows. As Chief Caleen Sisk explains their "beginning of life comes from Mt. Shasta so all those stories up and down the river have meaning from Yellow Jacket Mountain to Fox Mountain to the Sucker Pools all these have stories that belong to the Winnemem people and songs that go with them."The U.S. government first recognized the Winnemem Wintu in 1851 when it entered into the Cottonwood Treaty (see 1851-1854 Page 24). Through this treaty the Winnemem Wintu and several other Native American tribes ceded their homelands to the United States in exchange for the creation of a 35-square mile reservation. Due to pressure from California legislators who didn't want to cede the lands Congress however failed to ratify the treaty and 17 others and the reservation was never created. The Winnemem Wintu and other tribes were never compensated for the taking of their native lands and what resulted was an epidemic of homeless landless Indians throughout California.Less than thirty years later an additional 280 acres were taken for the establishment of a government reservation fish hatchery along the McCloud River (NOAA 2021). The Winnemem were employed at the hatchery by the federal government due to their extensive knowledge of salmon. In 1941 Congress enacted the Central Valley Project Indian Land Acquisition Act (US GPO 1941) which provided for the creation of the Shasta Dam along the McCloud River. Once constructed Shasta Dam caused flooding on much of the Winnemem Wintu's tribal land and many sacred places. The United States has not compensated the Winnemem Wintu for the loss of these lands and has not fulfilled its promise to place new land into trust for the tribe. Since 1985 the U.S. government has refused to grant federal recognition of the Winnemem Wintu tribe. The lack of federal recognition jeopardizes the tribe's continued existence in the Mount Shasta area. This lack of federal recognition has cut off federal benefits	

Ltr #-Cmt#	Comment	Response
	that are provided to tribes with federal recognition and which the federal government previously provided to the Winnemem Wintu. In the face of these hardships the tribe strives to preserve its native language practice its religion and traditional healing methods and protect its sacred sites and burial grounds from further encroachment by the federal government.	
6-3	TERRESTRIAL PLANTS There is no mention of the Shasta snow-wreath (Neviusia cliftonii) in your document Long-Term Operations of the Central Valley Project and State Water Project Draft Environmental Impact Statement (Bureau of Reclamation 2024). Shasta snow-wreath was not known to science until 1992 when it was discovered northeast of Redding California and described as a new species in Neviusia previously a monotypic genus. Shasta snow-wreath remained unrecognized so long because its flowers the most distinguishing feature only appear for a week to 10 days in late April or early May. When not in flower the plant resembles common shrubs such as oceanspray (Holodiscus discolor (Pursh) Maxim.) and ninebark (Physocarpus capitatus (Pursh) Kuntze) (Shevock et al. 1992). The planning process to raise Shasta Dam by the USDI Bureau of Reclamation (BOR) has included vegetation mapping and botanical surveys in the area increased the botanical interest and concern in the flora surrounding Shasta Lake and resulted in documentation of many of the currently known Shasta snow-wreath sites (USDI BOR Mid-Pacific Region 2014a). The project to raise Shasta Dam is known as Shasta Lake Water Resources Investigation (SLWRI)(BOR 2020). Shasta snow-wreath is currently listed as sensitive by the United States Department of Agriculture (USDA) Forest Service (FS) Pacific Southwest Region (PSW) under the Regional Forester's Sensitive Species list (2013). Shasta snow wreath was added to the regional sensitive species	The alternatives analyzed in the EIS do not propose to exceed water surface elevations beyond the full pool waterline. In the 2021 LTO Public Draft EIS, Reclamation modeled operations of all alternatives using the existing capacity of Shasta Reservoir, 4,552 Thousand Acre Feet (TAF), therefore the maximum reservoir elevation would be within the historical range and no new land would be inundated. Shasta snow-wreath has now been added and analyzed in the EIS in Appendix P, Table P.1-2 on Pg. 43. This species has been evaluated for a low potential for effect given that the alternatives will operate within the existing maximum reservoir elevation and no new land would be inundated.

Ltr #-Cmt#	Comment	Response
	update in 1998 which would have been the first opportunity to add the snow wreath. As of 2013 it is still listed as sensitive (USFS 2013). Sensitive species are managed to avoid a trend towards federal listing and consist of those species the FS-Pacific Southwest Region (R5) has identified as having a viability concern based on a significant current or predicted downward trend in population numbers or density and/or a significant current or predicted downward trend in habitat suitability that would reduce a species' existing distribution. This status applies only to National Forest System (NFS) Lands. The USDI Bureau of Land Management (BLM 2023) also lists Shasta snow-wreath as sensitive for public lands under BLM management. California Fish and Game Commission continues to list Shasta snow-wreath as threatened. (CA-FGC 2023). Six of the 24 occurrences are documented on non-federal lands (private or other) and are managed under the goals of the land owner (Roche 2019ab). The Shasta snow-wreath (Neviusia cliftonii) is only known to occur in the vicinity of Shasta Lake except for a few known locations of transplanted clonal material (Breen 2019 Christman 2011 Dunsmuir Botanical Gardens 2014 Ertter and Shevock 1993 Hoyt Arboretum 2024 Tu 2019). There is no documentation available of the source or the genetics of the off-site plants and none of these locations is tracked for status. However, obtaining this information would help to discern the effects of the management of Shasta Lake on this species. There are no other known past conservation efforts other than this informal non-systematic off-site conservation from those who have cuttings of this plant. California Fish and Game Commission (2023) continues to list Shasta snow-wreath (Neviusia cliftonii) as threatened in the state of California under CESA. Since 9 out of a total of 24 occurrences are found at the full pool waterline and since this species is not known to live with water saturated roots or in wetlands and is not known to	

Ltr #-Cmt#	Comment	Response
	be a phreatophyte nor generally occurring with phreatophytes, (Roche 2019ab) these occurrences will be negatively affected by operations of Shasta Dam as described in Bureau of Reclamation (2019). Bureau of Reclamation (2019) indicates that it operates Shasta Dam "in the winter for flood control including both the channel capacity within the Sacramento River and the Shasta Reservoir flood conservation space. On a given date Reclamation is not to exceed the top of the conservation pool storage level set by the USACE Water Control Manual. "The releases for flood control would vary depending on current storage forecasted inflow and flow in the mainstem Sacramento River at Bend Bridge. Reclamation operates Shasta Dam releases to keep flows at Bend Bridge below 100000 cubic feet per second (cfs) and therefore reservoir elevations may temporarily exceed the top of conservation pool storage to protect downstream populated areas. Bureau of Reclamation indicates that "To operate the Shasta TCD a defined amount of reservoir elevation above each set of gates is required to ensure safe operation. This requirement is reflected in Table 3.3-1 Shasta TCD Gates with Elevation and Storage as 35 feet of submergence above the top of the gates. 'Operations under the parameters discussed in Bureau of Reclamation (2020) would flood and potentially eliminate 9 occurrences of Shasta snow-wreath. USFWS (2021a) indicates that [B]ased on their review of the petition (Roche 2019a) [which only evaluated Shasta dam operations without gates and original full pool elevation] and sources cited in the petition we find that the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted for the Shasta snow-wreath due to potential threats under Factor A including impacts of: Raising Shasta Dam and related activities; ongoing activities such as mining logging and road or trail maintenance; invasive species; and habitat changes such as landslides and soil	

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	slumping. The petition also presented substantial information that the existing regulatory mechanisms may be inadequate to address impacts of these threats (Factor D). We will fully evaluate all potential threats during our 12-month status review pursuant to the Act's requirement to review the best available scientific information when making that finding. Shasta dam operations with the gates up are equivalent to the proposal to raise the dam (Bureau of Reclamation 2019). With 9 occurrences at the water line (Roche 2019ab) this would affect 37% of the known occurrences. Shasta snow-wreath has the ESA status: under review (USFWS 2021a). This species is listed as sensitive by both the USDA Forest Service (2013) and the Bureau of Land Management (2023). Although the USDA Forest Service is changing its process from a regional list of sensitive species to a forest-by-forest list of species of concern as Forest Plans are revised and amended. The Record of Decision for the Reinitiation of Consultation on the Coordinated Long-Term Modified Operations of the Central Valley Project and State Water Project was signed in 2020(BOR 2020) The associated EIS was issued in 2019 (BOR 2019). The issuance of these documents overlapped the California Fish and Game Commission listing process for Shasta snow-wreath which began in 2019 (Roche 2019b). Shasta snow-wreath was considered for listing as threatened by the California-Fish and Game Commission in (2021) and concluded in 2023 (CA-FGC-2023). This species and the threats to it by the operations of the Central Valley Project (CVP) seem to be totally absent from your document (BOR 2020). This is a serious omission and it makes your decision and EIS inadequate because you failed to consider the effects of your proposal on this species that is rare enough to be considered in effects analysis. Inundation of occurrences at the reservoir water fill line would affect 37% all known occurrences of the Shasta snow-wreath plant species (9	

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	out of 24 occurrences) (Roche 2019b CA-FGC 2023 BOR 2020). Shasta snow-wreath surveys were funded by the Bureau of Reclamation as part of the Shasta Lake Water Resources Investigation (BOR 2020). All discovered element occurrences and all other known occurrences are recorded and kept by the California Natural Diversity Database (CNDDB 2024). Because of the uncertainty about fluctuating fill levels and the time since complete surveys were completed there is a need for a new inventory to do an adequate assessment of effects. Without a new inventory of occurrences any report prepared will be based on guesses and speculation and not scientific information. There is no documentation available of the source or the genetics of the off-site plants and none of these locations is tracked for status. However obtaining this information would help to discern the effects of the management of Shasta Lake on this species. Establishing a conservation garden with scion material from each occurrence would also help to conserve the gene pool of this species.	
6-4	Literature Cited -- all available by request to the author 1851-1852 - Eighteen Unratified Treaties between California Indians and the United States. (2016). Government Documents and Publications. 3. https://digitalcommons.csumb.edu/hornbeck_ind_1/3 [accessed 08/03/24]. 40 CFR 1500. Available at: https://www.ecfr.gov/current/title-40/chapter-V/subchapter-A/part-1500 et. seq. (accessed 08/03/24). Breen P. J. 2019. Email communications to Kathy Roche regarding Shasta snow-wreath at Hoyt Arboretum in Portland Oregon. Copies on file in Bend Oregon with the Author. Bureau of Land Management. 2023. Special Status Plant Species. Available at: https://www.blm.gov/sites/default/files/docs/2023-10/BLM-	The commenter provided these citations for reference purposes in support of their EIS comments. Those comments are addressed in these responses to comments.

Ltr #-Cmt#	Comment	Response
	CA%20_PLANT_Special_Status_Species%20_List_Oct_4_2023_508.pdf [Accessed 08/09/2024]. Bureau of Reclamation. 2019. Reinitiation of Consultation on the Coordinated Long-Term Operation of the Central Valley Project and State Water Project Final Environmental Impact Statement December 2019. [https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=41664] [accessed 08/01/24]. Bureau of Reclamation. 2020. Record of Decision for Central Valley Project Operations. Available at: https://www.usbr.gov/mp/bdo/rodcvp.html. [08/01/2024]. Bureau of Reclamation. 2020. Draft Supplemental Environmental Impact Statement Shasta Lake Water Resources Investigation. Available at: https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=46365 [Accessed 08/011/24]. Bureau of Reclamation. 2024. Long-Term Operations of the Central Valley Project and State Water Project Draft Environmental Impact Statement Central Valley Project California Interior Region 10 California-Great Basin. Available at: www.usbr.gov/mp/bdo/lto/index.html [Accessed 08/03/24]. California-Fish and Game Commission. 2020. Notice of Findings for Shasta snow-wreath (Neviusia cliftonii). Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=178624&inline [Accessed 08/09/2024]. California-Fish and Game Commission. 2021. State of California Natural Resources Agency Department of Fish and Wildlife Report to the Fish and Game Commission Status review of Shasta snow-wreath (Neviusia cliftonii) November 2021. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=195936&inline [Accessed 08/09/2024].	

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	California-Fish and Game Commission. 2023. Findings for Shasta Snow-wreath. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=210712&inline [Accessed 08/08/2024]. California Natural Diversity Database (CNDDB). 2024. State and Federally Listed Endangered Threatened and Rare Plants of California. California Department of Fish and Wildlife. Sacramento CA. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109390&inline [Accessed 08/10/2024]. Cottonwood Treaty (Page 24). See "1851-1852 - Eighteen Unratified Treaties between California Indians and the United States." Christman L. 2011. Shasta snow-wreath a long hidden treasure. Redding Record Searchlight. Available at: http://archive.redding.com/lifestyle/shasta-snow-wreath-a-long-hidden-treasure-ep-375753894- 354834161.html/ [Accessed 05/23/2019]. Dunsmuir Botanical Garden. 2014. Dunsmuir Botanical Garden webpage. Available at: http://dunsmuirbotanicalgardens.org/ [Accessed 02/09/17]. Ertter B. and J.R. Shevock. 1993. Snow-wreath and its relatives in the garden. In: Shasta snow-wreath: a new genus for California. Fremontia 22: 10-11. Garrett B.L. 2010. Drowned Memories: The Submerged Places of the Winnemem Wintu. Arch 6 346371 (2010). https://doi.org/10.1007/s11759-009-9109-9 [Accessed 08/03/24]. Hoyt Arboretum Plant Database 2024. Neviusia cliftonii. Accession: 1999-129/1. Available at: https://hoytarboretum.gardenexplorer.org/taxon-1214.aspx [Accessed 08/09/2024].	

Ltr #-Cmt#	Comment	Response
	Ngo M. 2010. Loss of sacred spaces: The Winnemem Wintu struggle against a cultural genocide by California water demands. California State University Long Beach ProQuest Dissertations & Theses 2010. Available at: https://www.proquest.com/openview/f7bfca0c7ddf256a4d01b7b53ff79b44/1?pq- origsite=gscholar&cbl=18750[Accessed 08/10/2010]. NOAA. 2021. Baird Station: The First National Fish Hatchery. 2021. Available at: https://Error! Hyperlink reference not valid. [Accessed 08/09/2024]. Roche K. S. 2019a. Before the Secretary of the Interior Petition to Protect the Shasta snow-wreath (Neviusia cliftonii) under the Endangered Species Act. Available at: https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/petition/872.pdf [Accessed 08/03/24]. Roche K.S. 2019b. Petition to the State of California Fish and Game Commission to List the Shasta Snow-Wreath (Neviusia Cliftonii) As Endangered Under the California Endangered Species Act. Available at: https://fgc.ca.gov/cesa [Accessed 08/10/24]. Shevock J.R. B. Ertter and D.W. Taylor. 1992. Neviusia cliftonii (Rosaceae: Kerrieae) an intriguing new relict species from California. Novon 2: 285-289. Tu M. 2019. Email communications to Kathy Roche regarding Shasta snow-wreath at Hoyt Arboretum in Portland Oregon. On file at Bend Oregon with the author. US Fish and Wildlife Service. 2021a. 50 CFR Part 17. Endangered and Threatened Wildlife and Plants. 90 day findings for three species of plants. Available at: https://www.federalregister.gov/documents/2021/07/27/2021-15497/endangered-and-threatened- wildlife-and-plants-90-day-findings-for-three-species. [Accessed 08/10/2024].	

Ltr #-Cmt#	Comment	Response
	US Fish and Wildlife Service. 2021b. Shasta snow-wreath ESA status: under review. Available at: https://www.fws.gov/species/shasta-snow-wreath-neviusia-cliftonii [Accessed 08/10/2024]. US Forest Service Pacific SW Region. 2013. Regional Forester's Sensitive species list. Available at: https://www.fs.usda.gov/main/r5/plants-animals/plants [Accessed 08/11/2024]. US GPO. 1941. Central Valley Project Indian Land Acquisition Act. Available at: https://maint.loc.gov/law/help/statutes-at-large/77th-congress/session-1/c77s1ch334.pdf [Accessed 08//092024]. Winnemem Wintu Tribe. 2024. http://www.winnememwintu.us/ [Accessed 08/03/24].	

Table 4-7. Letter No. 7

Ltr#-Cmt#	Comment	Response
7-1	The California Water Project must be operated subject to the California Public Trust Doctrine and other California law, including section 25 article I of the state constitution guaranteeing the public the right to fish on state-owned lands and on lands formerly state-owned and transferred after November 8, 1910. Under the PTD, state agencies considering a decision which may affect a public trust interest, including public access to and use of waters susceptible to navigation for recreation, must first consider the effect of the proposed decision on the public trust interest, avoiding so far as feasible any adverse effect, and providing this consideration in a public manner facilitating public participation in the decision. The entire waters susceptible to navigation for recreation are open for public recreation, but for public health and safety regulation. Any interference with these public trust rights triggers the obligations to avoid interference as far as feasible, and proceed in a public manner. These rights carry with them the right to do those things necessary and convenient to enjoy the rights, for example driving on and parking.	Please refer to Standard Response 2, Related Regulatory Processes, regarding DWR compliance with CEQA. The Bureau of Reclamation is a federal agency and follows applicable federal laws and regulations. Refer to Chapters 4–22 regarding the analysis of potential environmental effects raised by the commenter. More specifically, Chapter 7, Indian Trust Assets, contains a discussion of potential effects on Indian Trust Assets. Concerns regarding recreation are addressed in Chapter 6, Recreation. Please refer to Chapter 21, Public Health and Safety, regarding potential effects on public health.

Table 4-8. Letter No. 8

Ltr#-Cmt#	Comment	Response
8-1	As a former resident of the SF Bay Area, I encourage the Bureau of Reclamation to deprioritize the Delta Tunnels in upcoming planning. A healthy Delta is essential to a healthy Bay Area ecosystem, including the largest natural estuary on the West Coast. Excessive diversions have already harmed Bay Area ecosystems and water quality, and further diversions by the Delta Tunnels will worsen this.	Reclamation provided a programmatic analysis of the Delta Conveyance Project as part of Alternative 2. Please refer to Appendix Z, Delta Conveyance Project Operations, for this analysis. Reclamation also recommends that these comments be submitted to the Department of Water Resources for its consideration as the CEQA lead of the Delta Conveyance Project.

Table 4-9. Letter No. 9

Ltr#-Cmt#	Comment	Response
9-1	I am trying to locate the recording for the online meeting that was held last Thursday. Can you please point me in the right direction? I was unable to locate it on the website.	Reclamation reached out and provided information on resources regarding the meeting available online.

Table 4-10. Letter No. 10

Ltr#-Cmt#	Comment	Response
10-1	The Hoopa Valley Tribe requests an extension of time to comment on the U.S. Bureau of Reclamation's Draft Environmental Impact Statement (DEIS) on Long-Term Operations of the Central Valley Project (CVP) and State Water Project (SWP). The Draft EIS was issued on July 26, 2024, with a designated 45-day public review period ending September 9, 2024. That is the minimum time period that an agency is permitted to afford for comment. The Hoopa Valley Tribe requires additional time to prepare meaningful comments on the lengthy and complex DEIS. The Tribe is a co-lead on the related ongoing re-initiation of consultation for the Trinity River Division of the CVP. The Tribe has a significant interest in conducting a careful review of the entirety of the DEIS and providing meaningful comments. As the Tribe has previously informed Reclamation, the Tribe believes that Reclamation must fully integrate its TRD analysis into its analysis of the Long Term Operations of the CVP/SWP. Much of the analysis and many of the technical appendices in the DEIS relate to Trinity River issues that affect the Tribe and its trust resources. The Tribe needs additional time to carefully review and comment on this material. The NEPA Regulations (codified at 40 CFR [section] 1500.1 et seq.) specify "Page limits" for an EIS as follows in [section] 1502.7: The text of final environmental impact statements, not including citations or appendices, shall not exceed 150 pages except for proposals of extraordinary complexity, which shall not exceed 300 pages. (Emphasis added.) The text of the Draft EIS exceeds 300 pages, amounting to a total of 415 pages. We count a total of 113 separate appendixes and	Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the duration of the comment period. Please refer to Standard Response 8, Trinity River, regarding the consideration of Trinity River operations in the EIS and future environmental review processes anticipated for the Trinity River.

Ltr#-Cmt#	Comment	Response
	attachments for the Draft EIS. By our count, these appendixes and attachments amount to a total of 18,738 pages. It is not possible for the Tribe's staff to read, comprehend, and be able to respond with detailed, focused written comments to this huge volume of written material on a proposal "of extraordinary complexity" in only 45 days. Nor is it reasonable for Reclamation to impose such a burden on the Tribe, especially when the Tribe is currently serving as co-lead on the related consultation process for the TRD. The Tribe requests that the Bureau of Reclamation grant an extension of the comment period for at least 90 days after September 9, 2024 (at minimum, to December 9, 2024) to afford the Tribe a reasonable opportunity to review and understand the environmental impacts of the Project and prepare meaningful comments on the Draft EIS. Thank you for your prompt attention to this extension request.	

Table 4-11. Letter No. 11

Ltr#-Cmt#	Comment	Response
11-1	So anyhow I didn't like anything you said pretty much. The Alternative 2 that you say is the preferred alternative, I heard things like -- I heard qualitative. Now, am I wrong -- qualitative is kind of like guessing to me because it's not quantitative. It doesn't have data. You said they're building the data, but they've already got Alternative No. 2 as a preference. That's one comment.	Please refer to Standard Response 4, Alternatives Formulation, regarding the development of alternatives, including the level of detail provided in the descriptions of each alternative. The EIS has been prepared in compliance with NEPA and evaluates the range of potential impacts that may result from the proposed action and the action alternatives. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS, including the use of high-quality information and qualitative analyses.
11-2	The other comment is -- that I show was for what was the scientific basis for this re-initiation of consultation? I've never had -- heard it. Maybe some of my staff has, but I haven't heard what the scientific basis of the re-initiation of consultation was. All I hear tonight is a reduction in available and reliable water supply to produce food and fiber for the people of the United States and the world.	Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as authorized, consistent with applicable laws, contractual obligations, and agreements. Refer also to the Background section in Chapter 0, Summary, regarding the Executive Order 13990 directing the Department of Interior to review all existing regulations, orders, guidance documents, policies, and any other similar agency actions (agency actions) promulgated, issued, or adopted between January 20, 2017, and January 20, 2021. This included the National Marine Fisheries Service (NMFS) Biological Opinion on Long-Term Operation of the Central Valley Project and the State Water Project (October 21, 2019) and the U.S. Fish and Wildlife Service (USFWS) Biological Opinion for the Reinitiation of Consultation on the Coordinated Operations of the Central Valley Project and State Water Project (October 21, 2019).

Ltr#-Cmt#	Comment	Response
		Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS and the use of best available science. Refer to Chapters 4–22 regarding the analysis of potential environmental effects. More specifically, Chapter 5, Water Supply, contains a discussion of potential effects on water supply.
11-3	And the talk about Shasta prescriptive? I guess what we're -- you said -- I think you said -- did I hear you right to say -- you said 65 small groups got together to deconstruct the 2019, 2020, biological opinions? Is that what you said? Deconstruct? Yeah, yeah. So, now, we're going to prescribe the storage in Shasta sometime in October, and then we're either going to look like we're really smart because it's a dry year, or we're going to look really stupid because it's a really wet year and we have to release all that water to flood storage. It doesn't make any sense to me. The project was built to provide water to develop the arid lands to the west, and that is in -- that -- that action is in contrast to that. I didn't like that. I didn't like that at all. Anytime I hear prescriptive triggers, I don't -- I don't like that, and, you know, old (unintelligible) river and the listing of the Longfin Smelt -- did I understand the Longfin Smelt was going to make federal endangered species in two weeks listed as federal endangered? Is that what you said? Okay.	Please refer to Standard Response 2, Related Regulatory Processes, regarding the 2019 Biological Opinions and the Biological Opinion Process. Please refer to Chapter 3, Alternatives, and Appendix E, Draft Alternatives, regarding the development of the alternatives analyzed in the EIS. Refer to Standard Response 6, Hydrologic Modeling and Surface Water, regarding modeling assumptions and analyses of drought. Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Refer to Chapters 4–22 regarding the analysis of potential environmental effects. More specifically, Chapter 12, Fish and Aquatic Resources, contains a discussion of potential effects on longfin smelt. Longfin smelt, San Francisco Bay/Sacramento–San Joaquin Delta (Bay-Delta) DPS is now listed as an endangered species under the ESA (89 Fed. Reg. 61029 (July 30, 2024)). The USFWS proposed to list longfin smelt as an endangered species on October 7, 2022 (87 Fed. Reg. 60957 (Oct. 7, 2022)).

Ltr#-Cmt#	Comment	Response
11-4	So the other thing that I don't like is that the CVP project is going to work to collaborate, but we collaborate with the State Department of Water Resources, and we collaborate with the operational system. But it sounds to me like this -- Alternative 2 where we have consensus operation of state and federal agencies, I think that the -- CVP is a federal project, and from what I understand is that the federal project doesn't have to operate under the state statute. I might be wrong, but that's my understanding.	Refer to the EIS Chapter 1, Introduction, Section 1.1, Project Background, regarding Reclamation's coordination with DWR in operating the CVP. Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as authorized, consistent with applicable laws, contractual obligations, and agreements. Please refer to Standard Response 2, Related Regulatory Processes, regarding state regulatory processes, including California Environmental Quality Act review.
11-5	In general -- the general comment I'm making is that all of these alternatives -- there's four -- actually, five when you count no action, and we've already got Alternative 2 is the preferred alternative, yet there's other alternatives that could be studied that might -- might be better. For example, all four -- the other -- the other thing is is that we've got Trinity hanging over our head, and we're going ahead with this biological opinion and Shasta -- talking about Shasta and temperature management, and we don't even know what Trinity is going to end up with? And -- when that comment comes out, Trinity was developed to help with our temperature control in the Sacramento River, if I understand correctly, and now we might lose some of that temperature control. So you're going to make it up by storing more water in Shasta and having to release it as flood water when it could be used to restore our ground water in the San Joaquin Valley.	Please refer to Standard Response 4, Alternatives Formulation, regarding the reasonable range of alternatives considered in the EIS. Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Please refer to Standard Response 8, Trinity River, regarding the consideration of Trinity River operations in the EIS and future environmental review processes anticipated for the Trinity River.
11-6	So that's another large area that I think is not being considered is what the impact the SGMA is going to have along with reduced reliability of surface water that you are prescribing.	Please refer to Chapter 6, Groundwater, regarding the analysis of potential effects on groundwater resources. Please refer to Appendix I, Groundwater Technical Appendix, Section I.2.1, Methods and Tools, regarding the consideration of the effects of the Sustainable Groundwater Management Act (SGMA) in the

Ltr#-Cmt#	Comment	Response
		analysis. Potential effects of the proposed project on surface water resources are addressed in Chapter 5, Water Supply.

Table 4-12. Letter No. 12

Ltr#-Cmt#	Comment	Response
12-1	One is it's a little unclear insofar as the coordination that is going on between the draft EIS and the draft EIR the Department of Water Resources released for review. We had an opportunity to review that document and provided specific feedback to D.W.R. on Monday which was the due date for that one. And some of the observations include the fact that geographic location for example that they're analyzing for purposes of implementing this effort on their part doesn't even include CVP operating parameters like the Shasta for example being one of the main drivers. They're not even necessarily analyzing that in their document. So that's a little bit of a concern of the disconnect between the way the projects need to be operating. When I hear that one of the underlying premises of having the five agencies working together is to be in concert and having everything coordinated and yet I see one draft document with a major gap in operations. So it's really unclear to us when we look at the modeling that they performed to what extent they really coordinated with reclamation to be all inclusive on CVP impacts specifically. So in their EIR it's a little difficult to understand to what extent some of the analysis that you are performing for the EIS insofar as CVP impacts are really inclusive of their analysis and so clearly we're focusing on that and providing feedback to them on that but that's one observation just you know coordination between the draft EIS and coordination on the draft EIR I.T.P. And operationally speaking you know the fact that CVP impacts really -- really hard to identify there was one of the -- one of the main concerns.	This EIS evaluates a proposed action and alternatives for changes to the long-term operations of the CVP, including CVP reservoirs, such as Shasta Reservoir, and other CVP and SWP facilities that could be affected by operational changes. Refer to Standard Response 2, Related Regulatory Processes, regarding requirements applicable to the SWP.
12-2	The other one was really the application of state law CESA to what extent is reclamation filling the other obligation through	Please see Standard Response 2, Related Regulatory Processes, for a discussion about the ESA process as well as DWR's process for a

Ltr#-Cmt#	Comment	Response
	this consultation to take on the standard associated with CESA versus ESA. For ESA there's a specific regulatory requirement that is different than CESA where you have to avoid and mitigate and do all kinds of things that are not necessarily applicable to CVP operations under the ESA or federal regulations. So that's kind of two specific items included in the coordination associated between the two documents for the same project. The other component for me -- the second comment I have has to do with really the coordination between the draft EIS and the ESA process for the BiOps that are going on.	separate CEQA review for the decisions that must be made regarding its operation of the SWP.
12-3	Alternative 2 here that was identified as a preferred alternative under the EIS is the proposed action that the regulatory agencies are analyzing now and there seems to be a focus in the draft biological opinions to just simply analyze that alternative not the others. So it's a little bit concerning that it's identified as a preferred alternative when you're very early in the -- in the EIS process to already have dictated this is the proposed action and then the action agency saying this is our preferred -- proposed action or preferred alternative and we're focusing on that seems a little pre-decisional from my perspective. The typical process is you complete your EIS. You go through the whole deliberation of analysis and then you select an alternative and then you basically go into the merits of doing the effects analysis for the biological assessment and the biological opinions that are required. So one of the comments included in this second observation that I'm making is how does the EIS process fit into the consultation process because typically you would have the whole EIR and EIS process fully completed dispensed with analyzed and then you have biological opinions issued thereafter. When I look at the schedules that have been provided to us by the regulatory agencies I see that sometimes the -- some products may be ahead of the EIS final product and so it's	40 C.F.R. § 1502.14(b) with 40 C.F.R. § 1508.1(z) direct NEPA lead agencies to identify a proposed action that meets the purpose and need of an action to aid reviewers in considering the comparative merits of alternatives. 40 C.F.R. § 1502.14(d) indicates that the agency's preferred alternative, if one exists, should be identified in the Draft EIS or the Final EIS unless another law prohibits identifying a preference. In this case, Reclamation correctly identified both the proposed action and preferred alternative to meet NEPA requirements and has made no decision to select or approve an alternative prior to completion of this Final EIS. Therefore, this Final EIS is not pre-decisional. Please refer to Standard Response 2, Related Regulatory Processes, regarding coordinated NEPA review and ESA studies and processes. Please also refer to Standard Response 4, Alternatives Formulation, regarding the purpose and need for the proposed action.

Ltr#-Cmt#	Comment	Response
	an observation and a comment insofar as the coordination between -- due process required under the law for EIR EIS and the ESA process.	
12-4	The last observation I would make is regarding the Alternative 2. It's really unclear to me the justification associated with the preferred Alternative 2 versus Alternative 4 for example because under the 2019 biological opinion from NMFS we had a non-jeopardy already. So why is there such a drastic shift now from the way we were operating the project before under a non-jeopardy to get another non-jeopardy that is entirely under a different premise from an operational standpoint? And the reason I'm highlighting that is because Alternative 2 has major water supply impacts to all of us south of the delta. Under the 2019 BiOp we had a non-jeopardy already. So the merits for the benefits associated with Alternative 4 versus -- Alternative 2 versus Alternative 4 I'm just totally at a loss as to why we're doing that.	The proposed modifications to the long-term operation of the CVP and SWP are in part to harmonize requirements imposed on the SWP by their ITP, as appropriate. Changes to the Proposed Action resulting in effects not previously analyzed is one of the four reinitiation triggers of the ESA. Refer to Standard Response 4, Alternatives Formulation, regarding selection of the preferred alternative.

Table 4-13. Letter No. 13

Ltr#-Cmt#	Comment	Response
13-1	I think the important thing for folks south of the delta, particularly (unintelligible) contractors is comparing the no alternatives historical projected zero frequency allocations to the 2-B alternative. Like Bill said, we've got a lot of landowners that are making business decisions based on water allocations, and if our frequency of the zero allocation doubles or triples or whatever happens based on the preferred alternative, these folks need to know and all the water districts need to know how to -- how to the plan for that. And I think that that's going to be helpful if the -- the grass back here are great, but my general -- or my first reading of some of the chapters of the EIS is the biggest impacts are when the water supplies are the worst, which is kind of a double whammy here for south of the delta.	Chapter 5, Water Supply, contains a discussion of potential effects on water supply. Chapter 14, Regional Economics, addresses potential agricultural-related changes to the regional economy. Please refer to Standard Response 4, Alternatives Formulation, regarding the development of alternatives, including Alternative 2B. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. Please refer to Standard Response 6, Hydrologic Modeling and Surface Water Resources, for a discussion regarding modeling of extreme conditions as well as the consideration of drought-year conditions in the modeling.

Table 4-14. Letter No. 14

Ltr#-Cmt#	Comment	Response
14-1	I've got a couple of comments I want to make regarding the fall run salmon and our trout steelhead population and spring pulse flows. First off on salmon looking at the different alternatives I see listed with potential fall run impacts increased Redd Dewatering. I see "Stranding." I can't imagine how this is acceptable. I just don't understand how it's acceptable that these alternatives include further damage to these already critically damaged salmon runs. Alternative 2 3 4 "Increased Redd Dewatering." I can't imagine how that's acceptable. The fall run is at a critical state. We can't lose any more fish. If reclamation could mitigate for that I could see that being more acceptable. If you're going to dewater the Redds implant more fish into the river. Parental base tagging maybe that's going to offer an opportunity to get more fish into the main stem and may take the hatcheries more out of the loop get some more quote unquote "wildfish" in the river. I would really like to see that addressed. Another thing I want to bring up is the spring pulse flows. During my fishing this year I saw a dramatic adverse effect with the drop in the flow. Like I fully support raising the flow getting fish out pulsing the flow up. I totally understand. What I witnessed in our trout fishery here especially in Redding where these big spawning trout coming up onto the Redds getting knocked off the Redds when the water drops. As water comes back up they move back on the Redds. Water drops again they're off the Redds. So essentially what takes a reasonable amount of time for them to spawn got lengthened out and they were on the Redds off the Redds for a prolonged period of time highly stressful on those fish. At the same time we saw water increase to 40000 CFS approximately and eventually drop down to 4000 CFS give or take. That frankly wiped out a lot of our bug	Please refer to Standard Response 7, Aquatic Resources, section Fall-run Chinook Salmon Impact Analysis and Mitigation regarding concerns over impacts to fall-run Chinook salmon from seasonal operations. For each of the alternatives there is a mitigation measure to develop and implement a program to expand adult holding, spawning, egg incubation, and fry/juvenile rearing habitat for Chinook salmon and steelhead (AQUA-1, see Appendix D, Section D.10.1.2, Additional Mitigation). The program will be designed to improve fall-run Chinook spawning success, fry/juvenile survival, and production, thereby contributing to their recovery. Under the preferred alternative (Alternative 2), there are Avoidance and Minimization Measures designed to reduce risk to redd dewatering. The “Fall and Winter Baseflows for Shasta Reservoir Refill and Redd Maintenance” measure will build and conserve storage to balance coldwater pool management with salmonid redd dewatering risk. Baseflows are set annually to balance that risk in the coming fall and winter with the following year. “SRS Contractors: Delaying or Shifting Spring Diversions, Shifting Timing of Delivery of Transfer Water, Rice Decomposition Smoothing” may impact stranding, redd dewatering, refuge habitat, and outmigration in the fall in the Sacramento River. Please see Appendix D, Section D.10.2 Avoidance and Minimization Measures for more details. Within the discussion of “Spawning Habitat Availability,” this appendix recognizes that reductions in flow may result in dewatering of redds.

Ltr#-Cmt#	Comment	Response
	life in the water. We saw a dramatic difference between this year and last year with bug life. My job is to find bugs and find trout food and the trout food's not there and I frankly think we lost a huge component of our spawning fish this year due to stress lack of food and I really think that needs to be addressed.	Stranding of juvenile salmonids has been monitored under previous operation plans and the No Action Alternative and summarized in the Initial Alternative Report Appendix AB-L-Shasta Coldwater Pool Management. These observations suggest reductions to releases no less than 3,750 cfs can help avoid substantial juvenile stranding. Reduced October and November flows support less redd dewatering during winter base flow periods. Analyses on spring-run Chinook salmon for the preferred alternative in Appendix AB - Biological Assessment – Chapter 6, use fall run stranding observation to analyze spring run potential stranding. Table 18 showed fall run Chinook salmon counts to be between 10 and 10,000 fall run Chinook juveniles, which are a small percentage of juvenile fish passing Red Bluff Diversion Dam. Bug life (more specifically macroinvertebrates) can be affected by flow intensity and can simplify the bug life community to filtering out taxa with nonadaptive traits and spatially synchronizing their dynamics. We are studying the food web in the upper Sacramento River to understand this better, and initial results document a fairly stable summer and fall bug community. Alternative 2 includes an adaptive management program that may test modifications within the range of impacts analyzed in the Draft EIS. Discussions about unintended effects of pulse flows in the food web may be discussed in that framework to determine if implementation may be modified. Text has been added to the Final EIS to disclose unintended potential effects of pulse flows.
14-2	The economic impact with damage to our trout fishery locally could be wide-reaching. My family has lost a good part of my income for the year due to poor fishing. Just overnight the	Text has been added in the Affected Environment section of Chapter 14, Regional Economics, and Appendix Q, Regional Economics Technical Appendix, to express this concern.

Ltr#-Cmt#	Comment	Response
	fishery is in decline. All of a sudden here we are and I think we can attribute that to that -- a drop in the water flow.	
14-3	Another impact we saw from the lowered water flows would be during the out-migration of our juvenile salmon. During that big drop salmon or salmon babies are getting preyed upon very very heavily by striped bass. One of the -- one of the big drop periods Coleman released truckloads of fish and those stripers had full bellies. Those releases at Butte City those fish got absolutely annihilated by striped bass due to that drop in flow. I just don't see the benefit to lowering those flows. I understand raising it flushing them out but the drop I think we've suffered more adverse effects than it's possibly worth and I would love to see that addressed.	Coleman hatchery releases are decided by USFWS, which uses a planning process that prioritizes releases during the spring when storms increase river flows and floodplain inundation. When these conditions do not occur, USFWS considers alternative criteria. As part of Alternative 2, Reclamation will provide additional releases from Shasta designed as functional flows to support juvenile salmonid outmigration survival in March-May, and USFWS may decide to plan for hatchery releases during these periods. The text in the FEIS has been revised to discuss the potential for unintended spring pulse flows on fall-run/late fall-run Chinook salmon and CCV steelhead in the Sacramento River. See Sections O.5.14.1, O.6.14.1, and O.7.14.1 for fall-run/late fall-run Chinook impacts in the Sacramento River. See Sections O.5.10.1, O.6.10.1, O.7.10.1 for CCV steelhead impacts in the Sacramento River. The revision does not substantially alter the overall impact determinations. Under the adaptive management component of Alternative 2, there are proposed Shasta Spring Pulse Flow Studies to inform management on potential alterations.
14-4	Like I said the economic impact to us locally this fishery, the trout fishery, steelhead fishery, salmon fishery it casts a wide net. You're not just impacting me. You're not just impacting my fellow fishing guide our families. It's hotels, food providers, gas stations. We cast a wide net. It's a big impact on our lives here.	The Draft EIS considers economic impacts as a result of the alternatives. 40 C.F.R. §1502.23 provides guidance about information to be used in an EIS. It states, "Agencies shall make use of reliable existing data and resources. Agencies may make use of any reliable data sources, such as remotely gathered information or statistical models. They shall identify any methodologies used and shall make explicit reference to the scientific and other sources relied upon for conclusions in the statement. Regional economic data is presented at a county level, with data compiled using Impact Planning and Analysis (IMPLAN) data files, and IMPLAN was used to evaluate regional economic

Ltr#-Cmt#	Comment	Response
		effects. IMPLAN estimates effects of various economic measures, including employment, labor income, and total value output. Employment is the number of jobs, including full-time, part-time, and seasonal positions. Labor income consists of employee compensation and proprietor's income. Value of output is the dollar value of production. IMPLAN estimates these economic measures through three types of effects: (1) direct effects, which reflect changes in final demand; (2) indirect effects, which capture changes in expenditures within the region in industries supplying goods and services; and (3) induced effects, which captures changes in expenditures of household income. IMPLAN estimates effects on an annual basis. As indicated in Section 14.1 of the Draft EIS, the focus of the economic analysis is regional economic conditions or macroeconomic conditions, rather than specific businesses, groups of businesses, or microeconomic conditions. This regional lens is appropriate for evaluation of the alternatives given the nearly statewide nature of the project and the CVP. Text has been added in the Affected Environment section of Chapter 14, Regional Economics, and Appendix Q, Regional Economics Technical Appendix, to express this concern.

Table 4-15. Letter No. 15

Ltr#-Cmt#	Comment	Response
15-1	My parents, family and I are all farm workers. We're campesinos. We all have direct relationship with that land and water of the CV for decades now. They used the pesticides and poisons, and the agricultural fields have been so profound that they sweep into our waters. Water has not been drinkable from the tap since I was born. I remember in grade school they would always send these letters home saying to not drink water from the tap, and if you do, to like go to the doctor because it wasn't safe. I was just back home this past month for the summer. There was a festival called the Tierra Mia Festival. It was there to celebrate the farm workers, the campesinos. And there was a point in the festival where members of the Tule River nation got to hold space and speak upon the water issues that are affecting the ways of the CV. They made it a point to reflect and call upon the power that was the undamming of the Klamath. The Klamath was so far north from the Tule River Nation, that that one act had ripple effects throughout the state, hundreds of miles away from a small portion of the CV. And this is a really small town I'm talking about. Like it's barely on the map. It is important to prioritize the voices of the people who are directly in relationship with the water and the fish from these rivers and waterways. Listen to tribal nation leaders who understand the land and the ways of the water that you could never understand. Listen to the campesinos and the folks in rural and low income communities who are most affected by these changes because I can promise you nobody in the CV where I'm from, the places	Concerns regarding water quality are addressed in Chapter 4, Water Quality. Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as authorized, consistent with applicable laws, contractual obligations, and agreements. Refer to the EIS Chapter 23, Other NEPA Considerations, Section 23.4, Consultation and Coordination, regarding Reclamation's coordination with interested parties, including Tribal consultation. Furthermore, as described in Chapter 17, Environmental Justice, Mitigation Measure EJ-1 would require that Reclamation identify opportunities to gather Tribal Indigenous Knowledge for consideration in future Reclamation projects. Please also refer to Standard Response 1 regarding public meetings and the adequacy of public outreach.

Ltr#-Cmt#	Comment	Response
	that aren't on the map where people do live and people do reside don't know anything about these changes. I can promise you that because I was just there for two months, and this was not brought up to anybody back home. So I just want to make it a point to listen to the people who live there. Don't -- like how far are we right now from the Central Valley, from who this is going to affect who you claim is going to help? Because it's not just about the water being dammed or the canals or whatever type of waterways you're trying to create. It's about what you're choosing to prioritize. If you want quality water down in the CV, make sure it's drinkable because we can't drink water. You have to pay for water. How can you do all that while supporting the same agriculture that poisons it?	

Table 4-16. Letter No. 16

Ltr#-Cmt#	Comment	Response
16-1	I help lead the Battle Creek Watershed Conservancy, which has existed for over 25 years, frankly, to address the BOR's mitigation efforts regarding Shasta Dam. We have extraordinary concerns as Coleman National Fish Hatchery is undergoing an infrastructure review, which is absolutely necessary, and we have great concerns whether there is a commitment on the part of BOR to ensure late fall, winter run, and spring run Chinook salmon within the Central Valley. As a result of that, we are engaged in multiple processes and groups like this to ensure that Battle Creek is a refuge or a natural Salmonid production.	This information describes the background of the organization or individual commenter. It is not a comment on the contents of the EIS.
16-2	Thank you so much and I can appreciate more, and I apologize I didn't get her name, but those previous comments are absolutely accurate. I have a challenge right now with my board and my constituency to explain the Central Valley Water Project and how it packs so many tributaries. I'm in Battle Creek and this is a critical watershed for some of the populations. And so I think that the issue of communication is paramount. We have felt many times that both U.S. Fish and Wildlife and Bureau of Reclamation have information regarding the Central Valley project and its overall goals and activities have left us in a position where here I am at a public meeting kind of calling it out. So I understand the challenges that you face. At the same time, I hope you recognize that this has an extraordinary impact on those tributaries, on the people who live within those tributaries and overall on, frankly, let's just face it, California. So I appreciate the efforts and look forward to participating.	Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding public outreach and public participation. Refer to Chapters 4–22 regarding the analysis of potential environmental effects, including potential effects on Chinook salmon in Chapter 12, Fish and Aquatic Resources.

Ltr#-Cmt#	Comment	Response
16-3	Once again, thank you so much for everything you are doing and for communicating all of this. Just to give you some information that I am part of the Coleman National Fish Hatchery Value Planning Study team. And so we do have some particular insights into this. And I guess my question really is, the Central Valley Salmonid population is beyond threatened at this point, especially with the recent park fire and its destruction, which fortunately Battle Creek was able to, for the most part, avoid. And while I certainly understand the need for water for agricultural and aquacultural purposes, I am very concerned about Bureau of Reclamation, and I shouldn't just say myself, I should say my board and its membership, are extraordinarily concerned regarding Central Valley Salmonid populations and we just want to make sure that Bureau of Reclamation on all levels is aware of this challenge and more importantly, doing something to address them.	*Chapter 12, Fish and Aquatic Resources,* provides a description of the methods, impact thresholds, criteria, data, and variables considered in the analysis of potential effects. Refer to Standard Response 7, Aquatic Resources, regarding general concern for negative adverse effects on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta), that could potentially result from the alternatives.
16-4	One of our other concerns very specifically is around winter run Chinook within the Central Valley and Battle Creek and the main stem below Keswick Dam being identified as really the only places that this species can survive. Again, I just want to put on record the Conservancy's viewpoint and concern around this critically endangered species. Along with that, the threatened species of spring run Chinook salmon as well. And that Battle Creek may well be the last place they can survive, but that seems to come into conflict, let's just say, with Coleman National Fish Hatchery's operations.	Refer to Standard Response 7, Aquatic Resources, regarding general concern for adverse impacts on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta), that could potentially result from the alternatives. Coleman Fish Hatchery operations are not part of the alternatives included in the EIS. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.10, Cumulative Impacts, regarding how hatchery operations are considered in the cumulative effects analysis, and Appendix Y, Cumulative Impacts Technical Appendix, which provides a summary of the expected cumulative impacts that would occur under the alternatives and the No Action Alternative. Additionally, hatchery operations have separate environmental compliance requirements.

Ltr#-Cmt#	Comment	Response
16-5	Thank you so much. And I know that and I appreciate that. And we will be submitting comments and once again, a project of this scope is going to create challenges and conflicts and I just really want to thank Bureau of Reclamation and everyone involved for their inclusion, for organizations like ourselves and others so that we can come up to the best solution.	Reclamation appreciates the comments. Refer to Chapters 4–22 for analysis of potential impacts, Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding public outreach and public participation.
16-6	I think one of the challenges is that, we look at the Central Valley project and we look at the Battle Creek Restoration project, we look at the Coleman National Fish Hatchery Infrastructure Review and Improvements, we look at the Battle Creek Restoration project, and it's challenging to reconcile all of that with what you're saying today. I think one of the challenges that all of us face is, how do we ensure that... And I'm not going to use the term native and I'm not going to use the term wild. How do we allow for natural fish to exist within the Sacramento River watershed? And most importantly, how do we allow salmon species to exist within the Sacramento watershed, considering the Central Valley project?	The EIS evaluates potential impacts that may result from the alternatives in Chapters 4–22 with specific focus on fish and aquatic resources in Chapter 12 and Appendix O. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.10, Cumulative Impacts, regarding how hatchery operations are considered in the cumulative effects analysis, and Appendix Y, Cumulative Impacts Technical Appendix, which provides a summary of the expected cumulative impacts that would occur under the alternatives and the No Action Alternative.

Table 4-17. Letter No. 17

Ltr#-Cmt#	Comment	Response
17-1	Thank you so much for holding so many meetings during this EIS period. I'm really grateful for that. So I first want to say thank you for the three in-person as well as three virtual meetings. I think that that gives many opportunities for the numerous stakeholders throughout the state to hopefully weigh in on a very complex but important process and series of documents and data contained in those.	Reclamation appreciates this comment. Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding public meetings and the adequacy of public outreach.
17-2	I think today I wanted to first assure the Bureau that we will be submitting comments on the DEIS by September 9th, and those will be in writing. And then second, I wanted to comment that the current structure of the DEIS is very difficult from a procedural standpoint to review for the public. So rather than going into maybe the substance of the DEIS, and don't worry, I will later in our written comments, I just wanted to acknowledge that I understand that there were new rules that governed the publishing of this particular document and the format of such. However, as I think illustrated by our first commenter today, it's sometimes difficult to find particular issues as currently structured in this DEIS. Some of the titles are very clear. For example, Appendix AB-I, old and Middle River Flow Management. That's pretty self-explanatory. However, I do know that old and Middle River flow management itself as a topic does appear in other sections, such as the alternative section or of course in the chapters itself of the text narrative of the DEIS. I would recommend for potentially ease of review in the future or if possible to come up with some sort of tool like that video that was mentioned earlier that I think was really a great creative way to go through some of those resources maybe at a high level that are incorporated to the DEIS, a table of	The EIS has been developed in compliance with NEPA and has been written in plain language with an emphasis on clearly and adequately disclosing the project's potential environmental effects in order to facilitate the public's, agencies', and decision makers' review of the EIS. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding public meetings and the adequacy of public outreach. Materials for the public meetings can be found at https://www.usbr.gov/mp/bdo/lto/index.html. NEPA regulations limit the number of pages and favor the use of appendices for technical information that supports the analysis. Please see Standard Response 1 regarding NEPA page limits and the structure of the Draft EIS. Reclamation met with the Defenders of Wildlife during the comment period to help them navigate the EIS.

Ltr#-Cmt#	Comment	Response
	contents that at least incorporates references for individual topics so people can thoroughly review everywhere that analysis is contained. So for example, old and Middle River flow management is incorporated in various other chapters and appendices or to get more examples, alternative three is in Appendix E, Appendix F, the modeling assumptions, something close to that kind of tool would be really helpful for the public. I have tried to comment on a number of draft environmental impact reports and environmental impact statements in my career, and I think this is by far the most complex one to review so far. I think that that's why I'm highlighting that that maybe if there's possible way for an additional reference document to help us thoroughly review all your grade analysis on some of these really complex topics and know exactly where they are, that would be very helpful for us, especially in the short review time window. Some of the appendices titles as well are just a little vague depending on the context of what you're talking about. So for example, Appendix F is modeling part one and part two, but then there's the lines of evidence appendices later. Or to get more vague, there's an appendix that's just titled figures. And when you go into it, of course it's not that long and you then realize it's figures to assist with the no action alternative and some of these others. But it's the action of going through each of these individual really long documents sometimes and making that connection of where it's relevant is very difficult and very challenging. So anything that the Bureau can do to produce to help us with that would be much appreciated. Thank you in advance.	
17-3	And then my third comment would just be to thank the Bureau, but also note that it still seems like after some of us have reviewed other documents in this long-term operations process that perhaps additional communication is warranted between the	Refer to Chapter 23, Other NEPA Considerations, Section 23.4, Consultation and Coordination, regarding Reclamation's coordination with interested parties. Please also refer to Standard Response 1, Responses to General Comments and Comments

Ltr#-Cmt#	Comment	Response
	agencies between now and the FEIS and the final other documents that come out in the LTO process. And I would just encourage the other agencies if they're listening to please coordinate with the Bureau and the Bureau to also coordinate with them to just try to share as much information as possible. I do know that some of this is a moving target, but I'd be really grateful in advance for as much information sharing as is feasible in this short time window. This is a big effort and one that's very important for water management in the state of California. And I think the Bureau has a lot of really updated information and data here that could help inform the other documents and processes related to this LTO reconsultation process. Thank you so much for holding this webinar today.	about Public Outreach, regarding public meetings and the adequacy of public outreach. Please refer to Standard Response 2, Related Regulatory Processes, regarding related regulatory processes, including coordinated NEPA review.

Table 4-18. Letter No. 18

Ltr#-Cmt#	Comment	Response
18-1	I wanted to maybe highlight for other people who are new to this process or try and digest this information that I found the storyboards that the Bureau of Reclamation put together explaining this process, I believe there's at least three of them, to be very informative and help me explain this process and what's going on to some of our other stakeholders here at the City of Redding. So I wanted to just highlight that, say good job on making that media available and in a way that can kind of simplified the process and maybe help spur someone to become more educated about it. And then you can dive into all the technical details that's in the draft EIS.	Reclamation appreciates this comment. The EIS has been developed in compliance with NEPA and has been written in plain language with an emphasis on clearly and adequately disclosing the project's potential environmental effects in order to facilitate the public's, agencies', and decision makers' review of the EIS.

Table 4-19. Letter No. 19

Ltr#-Cmt#	Comment	Response
19-1	[W]e cannot idly sit by as water rights are taken away from California's indigenous people and the immigrant communities that depend on salmon and other native fish to survive. Long-term operations plan for Central Valley water and state water project relies on outdated water laws and ineffective voluntary agreements.	Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as well as comments that state opinions of general opposition to the project. Please refer to Standard Response 7, Aquatic Resources, and EIS Chapter 3, Alternatives, regarding water rights. Please refer to Chapter 3 regarding Alternative 2, which includes the Delta voluntary agreements as well as other voluntary agreements that are analyzed in Chapters 4–22 of the EIS. Please also see Appendix E, Draft Alternatives for a more detailed description of the alternatives. Appendix F, Modeling Appendix presents the modeling results for all alternatives evaluated. EIS Chapter 7, Indian Trust Assets, evaluates effects of the alternatives on Indian trust assets, including potential changes in salmonid populations. Appendix O, Fish and Aquatic Resources Technical Appendix, provides background information and technical analysis of aquatic resource conditions and effects of alternatives.
19-2	The plan solely focuses on Trinity River, which was named one of America's most endangered rivers in 2024 and rightfully so and ignores many native tribes, intertribal organizations and environmental communities in the Central Valley that are on the	EIS Chapter 7, Indian Trust Assets, and Appendix J, Indian Trust Assets Technical Appendix, evaluates effects of the alternatives on Indian trust assets.

Ltr#-Cmt#	Comment	Response
	frontline of point source pollution, dangerously hot waters, mercury-laden fish and low in-stream flows.	EIS Chapter 8, Cultural Resources, and Appendix K, Cultural Resources Technical Appendix, addresses the alternatives' potential to affect historic properties including cultural resources. EIS Chapter 17, Environmental Justice, and Appendix T, Environmental Justice Technical Appendix, proposes Mitigation Measure EJ-1 to ensure Tribal interests are considered. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis. Please also refer to Standard Response 8, Trinity River, regarding the consideration of Trinity River operations in this EIS as well as future environmental review processes anticipated specific to Trinity River Operations.
19-3	As it stands, the draft environmental impact statement recently put out by the Bureau favor the existing voluntary agreements, which has already failed on several levels. Tribal outreach and engagement has been paltry and even nonexistent, especially with tribes in marginalized communities within the Central Valley. This is in direct opposition to the original equity action plan put out by the State Water Board in 2023 as proper protocol requires tribal consultation with all affected tribes. As many of the tribal citizens, intertribal groups and sport fishing community members have publicly stated at the virtual meetings in the past weeks and also one in-person hearing in Redding last week, we support Alternative 3, modified natural hydrograph, because it protects fisheries and increases in-stream flows into the Bay Delta.	EIS *Chapter, 17 Environmental Justice,* proposes Mitigation Measure EJ-1 to ensure Tribal interests are considered in long-term operation of the CVP and SWP. *EIS Chapter 23, Other NEPA Considerations,* addresses Reclamation's ongoing Tribal consultation efforts (Section 23.4.3, Tribal Consultation). Please also refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the overall adequacy of the analysis in the EIS for the purposes of NEPA.

Ltr#-Cmt#	Comment	Response
19-4	Although Alternative 2b is the Bureau's preferred alternative, it's not a good one for the salmon and other native fish that are on the brink of extinction. It's also not a viable alternative for the native people who depend on them for ceremony and sustenance, along with the sport fishing community that depend on them for their livelihood.	Potential environmental effects of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. EIS Chapter 17, Environmental Justice, and Appendix T, Environmental Justice Technical Appendix, contains a discussion of potential effects on Environmental Justice communities, while Chapter 7, Indian Trust Assets, and Appendix O, Indian Trust Assets Technical Appendix, contains a discussion on trust resources. Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding comments that state opinions of general support for or opposition to the project. Please also refer to Standard Response 7, Aquatic Resources, regarding the analysis of potential effects on fish and aquatic resources.
19-5	California salmon and the marginalized communities that depend on them are facing an unprecedented crisis. Decades of operation under outdated BiOps, biological opinions and water loss have severely reduced salmon populations, leading to annual shutdowns in commercial fishing and the loss of access to this vital resource for many native tribes. The operation of the CVP and SWP along with other proposed projects, such as, the Sites Reservoir and the Delta Conveyance Project, the Delta Tunnel, further threatens salmon habitats and could lead to their extinction. The Bay Delta and Central Valley Watersheds, it is imperative the project proposals and biOps prioritize an increase in in-stream flows and low water temperature protections to [e]nsure the survival of salmon and the well-being of communities that rely on them.	40 Code of Federal Regulations § 1508.1(g)(4) requires agencies to evaluate effects that are ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or related to health, whether direct, indirect, or cumulative. Refer to Chapters 4–22 regarding the analysis of potential environmental effects. More specifically, *Chapter 17, Environmental Justice*, contains a discussion of potential effects on Environmental Justice communities. *Chapter 14, Economics,* contains an analysis of potential economic effects of the alternatives. Appendix Z and Appendix AA consider operations of the Delta Conveyance Project and Sites Reservoir programmatically, respectfully, as part of Alternative 2.

Ltr#-Cmt#	Comment	Response
		Please also refer to Standard Response 5, Adequacy of Analysis and Mitigation, and Standard Response 7, Aquatic Resources, regarding adequacy of the analysis under NEPA.

Table 4-20. Letter No. 20

Ltr#-Cmt#	Comment	Response
20-1	First, I'd like to address the issue of climate change within the DEIS. As California's climate gets hotter and weather intensifies and water is further commodified, we must address the details of these projects as Northern California salmon's last chance at survival. Salmon are depending on us and the local fishing industry and the indigenous Californians who have depended on salmon for sustenance and ceremony since time immemorial deserve more. In each chapter of the DEIS, the No Action Alternative is based on 2024 conditions. Conditions would be different than existing conditions partially because of climate change and sea level rise. Climate change seemingly only addressed under the No Action Alternative when it is a very important metric to include in all alternatives. Under certain chapters where climate change is an important factor, like Chapter 5, Water Supply, it is not mentioned in the introduction of the chapter, but it should be. It is a current threat to our water supply and needs to be addressed.	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. All the alternatives consider climate change. Refer to Standard Response 9, Climate Change, regarding the consideration of climate change in the analysis provided in the EIS. Also refer to Chapter 10 and Appendix M, Greenhouse Gas Emissions, regarding changes in greenhouse gas emissions related to changes in CVP and SWP operation under the alternatives. Please refer to *Appendix F, Modeling* for information regarding the modeled representation of climate change included in the hydrologic modeling used for the analysis of potential effects on environmental resources in the EIS. Concerns regarding salmon and water supply are addressed in *Chapter 12 Fish and Aquatic Resources,* and *Chapter 5, Water Supply*, respectively. Please refer to Standard Response 4, Alternatives Formulation, regarding the development of alternatives. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.
20-2	In a similar vein, I'd like to comment on Chapter 10, Greenhouse Gas Emissions, and the need to prioritize Alternative 3: The lowest production of greenhouse gas emissions is Alternative 3 and is listed in Table 10-3.	The EIS has been prepared in compliance with NEPA and evaluates potential impacts that may result from the proposed action and the action alternatives.

Ltr#-Cmt#	Comment	Response
	It is the only alternative that would lead to a decrease in carbon dioxide equivalent emissions compared to the No Action Alternative by 14.4 percent. The fact that "No mitigation measures have been identified" for this is problematic. Unless Alternative 3 is the preferred alternative, mitigation measures for greenhouse gas emissions are absolutely necessary in this era of climate change.	Greenhouse gas emissions are addressed in *Chapter 10, Greenhouse Gas Emissions*. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. Support for Alternative 3 has been noted.
20-3	Next, I'd like to address tribal rights and cultural resources and the fact that they must be protected. The DEIS does not identify tribal cultural resources that need protection nor mitigations for tribal uses in any Central Valley Watersheds. I am concerned about the chapters on "Indian" Trust Assets and Cultural Resources. While there is a lengthy list of tribes within the study area, there are very few mentioned in the few sentences about Tribal consultation. Federal agencies are subject to Executive Order 13175, consultation and coordination with Indian Tribal Governments, and President Biden has released the Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships in 2021 and the Memorandum on Uniform Standards for Tribal Consultation in 2022. After reviewing the DEIS and seeing the lack of mention of consultation, I am skeptical that effective government-to-government consultation actually occurred. The CVP and SWP are major projects that span the state, and it's hard to believe that so few tribes can be listed under the consultation section.	Refer to Chapters 4–22 regarding the analysis of potential environmental effects. More specifically, *Chapter 7 Indian Trust Assets*, and *Chapter 8 Cultural Resources,* contain discussions of potential effects on Indian Trust Assets and cultural resources, respectively. Refer to the EIS *Section 23.4 Consultation and Coordination,* regarding Reclamation's coordination with interested parties, including tribal consultation. Please refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding public meetings and the adequacy of public outreach. Please also refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. Nineteen tribes were sent an invite to be a Cooperating Agency for the EIS.
20-4	Next, I'd like to discuss — quickly discuss the Voluntary Agreements. They are too heavily relied on in the Preferred Alternative 2b.	Please see Standard Response 5 *Adequacy of Analysis and Mitigation,* Section AD.3.5.2 *Adequacy of Analysis* which provides information as to why the information contained in the EIS,

Ltr#-Cmt#	Comment	Response
	As parties to the Bay Area Delta Plan Accord, the CVP and SWP must coordinate their operations for the State Water Resources Control Board. There is a current Bay Delta Plan being drafted as you probably know. The VA's are a proposed component of the Bay Delta Plan but have not been adopted. At this late stage of the Bay Delta Plan process, the VA's are still severely underdeveloped and are proposals that will cause harm to the Bay Delta ecosystem and the Tribes and other impacted communities that were left out of their creation. They should not be considered or incorporated as a viable option.	including the description of alternatives, is adequate for conducting the NEPA assessment and is appropriate for a comparison of impacts across the alternatives. Please refer to Standard Response 10, Voluntary Agreements, regarding general concern about voluntary agreements. Please also refer to Chapter 3 Alternatives regarding Alternative 2, which includes the Delta voluntary agreements as well as other voluntary agreements and are analyzed in Chapters 4-22 of the EIS. Please also see Appendix E, Draft Alternatives, for a more detailed description of the alternatives. Appendix F, Modeling Appendix presents the modeling results for all alternatives evaluated. The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the proposed action and the action alternatives. Refer to Chapters 4–22 regarding the analysis of potential environmental effects. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. Please refer to Standard Response 2, Related Regulatory Processes, regarding related regulatory processes.
20-5	Lastly, I'd just like to emphasize that we would encourage you to consider Alternative 3, which aims to help salmon recover as it is not explored adequately in the DEIS.	Concerns regarding salmon are addressed in *Chapter 12 and Appendix O, Fish and Aquatic Resources*. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. Support for Alternative 3 has been noted

Ltr#-Cmt#	Comment	Response
20-6	In conclusion, we request further discussion of the impending impacts of climate change, further information on tribal consultations that have or have not occurred, further analysis and focus on Alternative 3. Ultimately, we request that Alternative 3 be the preferred alternative.	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. All the alternatives consider climate change. Refer to Standard Response 9, Climate Change regarding the consideration of climate change in the analysis provided in the EIS. Also refer to Chapter 10 and Appendix M, Greenhouse Gas Emissions, regarding changes in greenhouse gas emissions related to changes in CVP and SWP operation under the alternatives. Please refer to *Appendix F Modeling* for information regarding the modeled representation of climate change included in the hydrologic modeling used for the analysis of potential effects on environmental resources in the EIS. Please see Standard Response 5 *Adequacy of Analysis and Mitigation,* Section AD.3.5.2 *Adequacy of Analysis* which provides information as to why the information contained in the EIS, including the description of alternatives, is adequate for conducing the NEPA assessment and is appropriate for a comparison of impacts across the alternatives. *Chapter 7 Indian Trust Assets*, and *Chapter 8 Cultural Resources,* contain discussions of potential effects on Indian Trust Assets and cultural resources, respectively. Refer to the EIS *Section 23.4 Consultation and Coordination,* regarding Reclamation's coordination with interested parties, including tribal consultation. Nineteen tribes were sent an invite to be a Cooperating Agency for the EIS. Please refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding public meetings and the adequacy of public outreach. Support for Alternative 3 has been noted.

Table 4-21. Letter No. 21

Ltr#-Cmt#	Comment	Response
21-1	I was involved in the last time around we had this process. I think it was 2017 maybe, which also had kind of sparse public participation, and I do think that is because there haven't been very good outreach.	Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding public outreach and public participation.
21-2	So that is one thing I wanted to bring up, and I wanted to also bring up it's very confusing on whether or not this public comment period also covers Trinity River operations and whether or not there's going to be a separate public comment period for Trinity River operations. I know there's going to be a separate biological opinion, but it hasn't been made clear whether there's going to be separate public comment, and I am formally requesting that there be separate public comment right now for many reasons. One is people don't have a correct analysis to look at related to the Trinity River and impacts to the Trinity and Klamath Rivers. Two, because every single tribe on the Klamath or Trinity River right now is in ceremony, and so not a lot of people are able to be here today because it is our ceremony time on the Klamath River and the Trinity Rivers, and then also school just started and it's very far from there. So we need a very clearly noticed separate comment period related to the Trinity, and I'm formally requesting that.	Please refer to Standard Response 8, Trinity River, regarding the consideration of Trinity River operations in this EIS as well as future environmental review processes anticipated that are specific to Trinity River Operations. EIS *Chapter 17, Environmental Justice,* proposes Mitigation Measure EJ-1 to ensure Tribal interests are considered in long-term operation of the CVP and SWP. *EIS Chapter 23, Other NEPA Considerations,* addresses Reclamation's ongoing Tribal consultation efforts (Section 23.4.3, Tribal Consultation).
21-3	With that, I want to move on to my comments on the actual biological opinion, EIS process that's before me right now. First of all, I wanted to say that I find the process fairly confusing. I feel like Alternative 2 is not analyzed in the way I would like to see it because the voluntary agreements are not laid out, and in an even process you're supposed to be looking at impacts including cumulative impacts, foreseeable impacts, and to have a	Please refer to Standard Response 2, Regulatory Processes, regarding the Biological Opinion process. Please see Standard Response 5, Adequacy of Analysis and Mitigation, for comments on the adequacy of the analysis in the different alternatives. Please refer to *Chapter 3, Alternatives,* regarding Alternative 2, which includes voluntary agreements and are analyzed in

Ltr#-Cmt#	Comment	Response
	preferred alternative that is based on voluntary agreements that are not laid out or specified makes it really hard to understand or comment on this process at all in my opinion. I also would like to mention that in other places where voluntary agreements have been tried, some with the same agricultural users in California, they have not been successful and actually have led to massive fisheries' crashes and declines. So I feel like we should look at the past history of voluntary agreements and also look at the history of this voluntary agreement process because there's been a lot of stalling and a lot of promises that don't have actual hard numbers in them. Because of this, I also support Alternative 3. I feel like we need hard numbers. We need real flows. If we look at fisheries' numbers and what has happened from your former biological opinion, we have had a decimation of salmon within the Sacramento and Bay Delta System to the point that I don't know if it's been seen before besides maybe the Gold Rush. I mean, the spring salmon numbers are down to a few hundred, and that's like a 90 percent decline. You know, fall salmon -- salmon numbers are something like a 60 percent decline, and even when we did have -- you know, we talk about Alternative 1, the baseline, and how inappropriate that baseline is because it is based on the former biological opinion, but even under the water quality alternative, you know, we -- when we did have 90-5 that was being implemented, real temperature management that was being -- was to be implemented, we had temporary urgency change petitions constantly during the drought, and because of this -- and this is the Bureau of Reclamation's responsibility. We have almost lost the salmon within most of California. So it's time to change. It's time to do things a little different, and Alternative 3 is different. It is actually prioritizing the salmon. It is	Chapters 4–22 of the EIS. Please also see *Appendix E, Draft Alternatives, for* a more detailed description of the alternatives. Refer to Standard Response 10, Voluntary Agreements, regarding general concern about voluntary agreements. EIS *Chapter 7, Indian Trust Assets, and Appendix J*, *Indian Trust Assets* Technical Appendix, evaluate effects of the alternatives on Indian trust assets, including potential changes in salmonid populations. Refer to *Appendix Y, Cumulative Impacts* Technical Appendix, for cumulative effects analysis of the alternatives. Refer to Standard Response 7, Aquatic Resources, regarding the analysis of potential effects on listed fish species. *Appendix O, Fish and Aquatic Resources* Technical Appendix, provides background information and technical analysis of aquatic resource conditions and effects of alternatives. Refer to Standard Response 10, Voluntary Agreements, regarding how voluntary agreements are incorporated on Alternative 2. Refer to Standard Response 9, Climate Change, regarding the consideration of climate change in the analysis provided in the EIS. Support for Alternative 3 is noted.

Ltr#-Cmt#	Comment	Response
	looking at climate change, and even though it doesn't really go into tribal trust assets, it will protect tribal trust assets.	
21-4	And so then that leads me to my last comment where I want to say I'm extremely disappointed with the Bureau of Reclamation as -- as not paying attention to their trust responsibility to the tribes in the Central Valley. I was pretty much shocked when I saw that once again this biological opinion only talked about tribal trust assets for the Trinity River and Klamath Rivers. Those are obviously not the only tribes impacted. There are a lot of tribes within the Sacramento system that are fighting very hard to bring the salmon back and are fighting really hard for their assets and, you know, I think we need to be looking at actually protecting tribal beneficial uses and looking at actually fulfilling the trust responsibilities of California tribes for the first time in California's history. And I know that is where the administration says they want to go, and I'm not seeing that within this EIS.	EIS *Chapter 7, Indian Trust Assets,* and *Appendix J, Indian Trust Assets* Technical Appendix, evaluate effects of the alternatives on Indian trust assets. EIS *Chapter 8, Cultural Resources,* and *Appendix K, Cultural Resources* Technical Appendix, address the alternatives' potential to impact historic properties including cultural resources. EIS *Chapter 17, Environmental Justice*, proposes Mitigation Measure EJ-1 to ensure Tribal interests are considered. Reclamation invited 19 tribes to be Cooperating Agencies for the development of the EIS.
21-5	So then my last thing I would like to say is I feel like there's not a good hard look at cumulative considering that Sites Reservoir and the Delta Tunnel is -- are moving forward. I'm glad that they're not being fully analyzed as part of the preferred alternative, but at the same time with voluntary agreements, the Delta Tunnel and Sites Reservoir, we could be looking at the immediate extinction of our salmon and the smelt. And the point of a biological opinion is to protect those species. So I think the cumulative impacts analysis could be better done, and I think there should be mitigation measures in place to look at cumulative impacts, including strong protections to bypass flows and temperatures. With that, that was a really long comment. So apologies for that. We are doing other comments that will go into things like water	Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, for comments on cumulative impact analysis and mitigation measures in place. Additionally, Appendix D provides mitigation measures for the Action Alternatives. Please refer to Standard Response 10, Voluntary Agreements, regarding the consideration of the voluntary agreements in the EIS. Please refer to the cumulative section of Chapters 4–22 and their associated appendices included in the EIS, which consider the Sites Reservoir Project and the Delta Conveyance Project. Please also see Appendix Y, Cumulative Impacts Technical Appendix, for additional information on the consideration of Sites and Delta Conveyance Project in the cumulative analysis. Furthermore,

Ltr#-Cmt#	Comment	Response
	quality and more into the tribal impacts, but I thank you for your time.	please refer to Appendix Z, Evaluation of Delta Conveyance Project Operations, and Appendix AA, Evaluation of Sites Reservoir Project Operations, which provide additional information and analysis pertaining to Sites and Delta Conveyance Project operations. Please also refer to Standard Response 7, Aquatic Resources, regarding the analysis of potential effects on listed fish species. Appendix O, Fish and Aquatic Resources Technical Appendix, provides background information and technical analysis of aquatic resource conditions and effects of alternatives.
21-6	And I would also encourage you in the future to maybe work with us in the tribes and others to make sure that these comment periods are really well noticed and that we have a stronger relationship where we're actually putting forward alternatives the way that you put forward alternatives with agricultural and farmers because a lot of people depend on this water, and it's not just the people diverting it. Fishermen depend on it. Tribes depend on it. Recreationalists depend on it, and we all have things that we would have wanted to put into the process.	Reclamation appreciates this comment. Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, for general comments related to public outreach.

Table 4-22. Letter No. 22

Ltr#-Cmt#	Comment	Response
22-1	I am representing Program Earth, which is a coalition of (unintelligible) technologists who work with the United Nations on initiatives towards conservation. I would love to, you know, echo those perspectives as well as having grown up here in Sacramento in Miwok lands what these rivers personally mean to me, and then also from an impact analysis, what we're looking at in terms of the climate resilience that Regina had also brought up, you know, in her statement. So huge proponent of Alternative 3. The United Nations did announce earlier in April that we have about two years when we look at the point of no return, and the strongest strategy that we have towards that is conservation of our water and land resources. And a lot of times when the VA's are talking about this -- new forms of, you know, research and studies, we always have a missed opportunity in terms of the traditional and ecological knowledge that our tribes all across the Klamath, whether it's the Hupa, the Karuk, the Yurok, you know, there's so much knowledge that our elders have in terms of how our ecosystems used to be when it was at a standpoint of abundance. Our data sets only include the last maybe 200 or 300 years of these ecosystems, if that, and if we do not center, you know, these sorts of tribal protections that allow us to map this ecosystem, we're missing huge points of data on what that climate resilience looks like. I know, since I worked in the financial sector for a long time, that sometimes we need to translate this into dollars. So in terms of California alone, these rivers actually represent almost 110 billion dollars towards climate resilience, and that starts with the salmon.	Refer to Standard Response 10, Voluntary Agreements, regarding general concern about voluntary agreements. Also refer to Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.5, Alternative 2, regarding the four phases that include adoption of the Voluntary Agreements (VAs). Chapter 12, Fish and Aquatic Resources, and Appendix O, Section O.8, describe potential effects on commercial and sport fisheries. 40 C.F.R. §1502.23 provides guidance about information to be used in an EIS. It states that agencies shall make use of reliable existing data and resources. Refer to the EIS Chapter 23, Other NEPA Considerations, Section 23.4, Consultation and Coordination, regarding Reclamation's coordination with interested parties, including Tribal consultation. Furthermore, as described in Chapter 17, Environmental Justice, Mitigation Measure EJ-1 would require that Reclamation identify opportunities to gather Tribal Indigenous Knowledge for consideration in future Reclamation projects. Refer to Standard Response 9, Climate Change, regarding the consideration of climate change in the analysis provided in the EIS. Please refer to Appendix F, Modeling, for information regarding the modeled representation of climate change included in the hydrologic modeling used for the analysis of potential effects on environmental resources in the EIS. Appendix F, Sections F.2-1 through F.2-8 provide information about the climate change sensitivity analysis for all alternatives. Appendix Y, Cumulative Impacts Technical Appendix, provides cumulative analyses of effects on climate change for all resource areas.

Ltr#-Cmt#	Comment	Response
	Having these rivers and honoring the pathways of the salmon means that, when the salmon come to rest, there's a particular amount of carbon that they deposit into the soil, which actually adds as a trigger point for a lot of the fire resilient plants that you see across our watershed. These plants also help fortify those watersheds against soil erosion, which also means that we're saving our budget in terms of flooding. So I would go ahead and, you know, continue to urge you to include more of our indigenous elders into this sort of research. There's almost 10,000 years worth of stories and lived experiences there, but if we have to make an economic argument, please consider that whatever revenue the different, you know, parties represent through the VA, it doesn't offset the 110 billion dollars that you can save and potentially the 300 million that we could also engage through the Biden Administration who has voiced a huge commitment to tribal life conservation around both water and land resources.	Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Refer also to Standard Response 1 regarding public outreach and comments that state opinions of general opposition to the project. Refer to Standard Response 4, Alternatives Formulation, regarding the alternatives development process. Also see EIS Appendix E, Draft Alternatives, for more information about the input of interest groups, including Tribes, in public comments on the scoping report, as well as the inclusion of Native American Tribes in technical groups such as Shasta Operations Team and Sacramento River Group in Alternative 2. Refer to Standard Response 7, Aquatic Resources, regarding general concern for negative adverse effects on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta), that could potentially result from the alternatives. Support for Alternative 3 has been noted.

Table 4-23. Letter No. 23

Ltr#-Cmt#	Comment	Response
23-1	The following represents my position that the U.S. Bureau of Reclamation refine and adopt Alternative 3 as the only alternative that actually prevents extinction and provides adequate conditions for recovery of salmon, smelt and other species. Reclamation's own analyses show that the Proposed Project in the Draft Environmental Impact Statement for Long-Term Operations of the Central Valley Project and State Water Project will lead to the extinction of endangered salmon and smelt. Only the science-based Alternative 3 supports recovery of these species. Reclamation must revise its operations as indicated in Alternative 3 to require greater flows, stronger temperature requirements, and other actions to save and recover endangered species and the ecosystems they depend on.	Refer to Standard Response 4, Alternatives Formulation, regarding the alternatives development process. Environmental effects of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Specifically, concerns regarding fish species are addressed in Chapter 12, Fish and Aquatic Resources. Refer to Standard Response 7, Aquatic Resources, regarding general concern for negative adverse effects on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta), that could potentially result from the project described in the action alternatives. Refer to Standard Response 2, Related Regulatory Processes, regarding Section 7 consultation in accordance with the ESA. Support for Alternative 3 has been noted.

Table 4-24. Letter No. 24

Ltr#-Cmt#	Comment	Response
24-1	As a Californian, I am dismayed that in recent proposals Voluntary Agreements are being substituted for any meaningful improvement in ESA requirements or water quality standards. Reclamation's own analyses show that the Proposed Project in the Draft Environmental Impact Statement for Long-Term Operations of the Central Valley Project and State Water Project will lead to the extinction of endangered salmon and smelt, the populations of which are already in severe decline. Only the science-based Alternative 3 supports environmental restoration and recovery of these species. Reclamation must revise its proposed operations to adhere to the scientific evidence as indicated in Alternative 3: i.e., to require greater flows, stronger temperature requirements, and other actions to save and recover endangered species and the ecosystems they depend on. Please follow the science and do the right thing!	Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding comments that state opinions of general opposition to the project. Potential environmental effects of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.5, Alternative 2, regarding the four phases that include a combination of implementation of a Temporary Urgency Change Petition (TUCP) and adoption of the Voluntary Agreements (VA). Refer to Standard Response 7, Aquatic Resources, regarding general concern for negative adverse effects on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta), that could potentially result from the project described in the action alternatives. Refer to Standard Response 2, Related Regulatory Processes, regarding Section 7 consultation in accordance with the ESA. Refer to Standard Response 10, Voluntary Agreements, regarding general concern about voluntary agreements. Support for Alternative 3 has been noted.

Table 4-25. Letter No. 25

Ltr#-Cmt#	Comment	Response
25-1	I am writing concerning the draft EIS for the Long-Term Operations of the Central Valley Project and State Water Project . Salmon, their prey species, like smelt, have seen catastrophic population declines in the northern California. So how can you support further water removal from the Sacramento and other central valley rivers and the delta? Your own analyses show that the Proposed Project in the Draft Environmental Impact Statement for Long-Term Operations of the Central Valley Project and State Water Project will lead to the extinction of endangered salmon and smelt. The only reasonable alternative to minimize further damage and even start to recover populations of salmon is Alternative 3. I urge you to adopt Alternative 3 to require greater flows and tougher temperature requirements to recover these endangered species and the ecosystems they depend on. I appreciate the opportunity to comment for the record.	Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding comments that state opinions of general opposition to the project. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Standard Response 7, Aquatic Resources, regarding general concern for negative adverse effects on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta), that could potentially result from the alternatives. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.8, for a summary of the aquatic resources impacts Refer to Standard Response 2, Related Regulatory Processes, regarding Section 7 consultation in accordance with the ESA. Refer to Standard Response 5, Alternatives Formulation, regarding the alternatives analyzed in the EIS. Support for Alternative 3 has been noted.

Table 4-26. Letter No. 26

Ltr#-Cmt#	Comment	Response
26-1	Reclamation's own analyses show that the Proposed Action in the Draft Environmental Impact Statement for Long-Term Operations of the Central Valley Project and State Water Project will lead to the extinction of endangered salmon, steelhead, and smelt. Only the science-based Alternative 3 supports recovery of these species and the healthy rivers needed to sustain them. Reclamation must revise its operations as indicated in Alternative 3 to require greater flows, stronger temperature requirements, and other actions to save and recover endangered species and the ecosystems they depend on.	Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding comments that state opinions of general opposition to the project. Refer to Standard Response 7, Aquatic Resources, regarding general concern for negative adverse effects on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta), that could potentially result from the alternatives. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.8, for a summary of the aquatic resources impacts. Refer to Standard Response 2, Related Regulatory Processes, regarding Section 7 consultation in accordance with the ESA. Refer to Standard Response 5, Alternatives Formulation, regarding the alternatives analyzed in the EIS. Support for Alternative 3 has been noted.

Table 4-27. Letter No. 27

Ltr#-Cmt#	Comment	Response
27-1	Saving and restoring the San Francisco Bay-Delta Estuary is of national importance. We need BOR to operate from that principle when determining the best operations of the CVP.	Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the purpose and need for and the proposed continued operation of the CVP and SWP. Refer to Chapter 2, Purpose and Need, regarding the purpose of operating the CVP in coordination with the SWP for authorized purposes, including flood control and navigation; water supply; fish and wildlife mitigation, protection, and restoration and enhancement; and power generation. Operation of the CVP and SWP also provides recreation and water quality benefits. Analysis of impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS.

Table 4-28. Letter No. 28

Ltr#-Cmt#	Comment	Response
28-1	Only one scenario -- called "Alternative 3," developed by the river protection community -- would actually significantly improve river conditions and restore fish populations at risk of extinction. Please support Alternative 3.	Refer to Standard Response 5, Alternatives Formulation, regarding the alternatives analyzed in the EIS. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.8, for a summary of the aquatic resources impacts associated with the alternatives. Refer to Standard Response 7, Aquatic Resources, regarding general concern for negative adverse effects on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta), that could potentially result from the alternatives. Support for Alternative 3 has been noted.

Table 4-29. Letter No. 29

Ltr#-Cmt#	Comment	Response
29-1	The Basic Theme of our review of what Reclamation is proposing is the need for rules standards and objectives to guide the operations of the CVP and SWP under the widely varying environmental and cultural conditions expected now and in the future. Mother Nature is dealing a much different hand in response to the human footprint in the Central Valley of California. We need strong Rules-of-Law to protect the highly vulnerable public trust resources in the Central Valley otherwise greed and selfishness will become the rule and power will come from money not the need to protect the environment and public trust resources like wild salmon and Sierra mountain streams and the San Francisco Bay-Delta Estuary.	This comment provides an opinion and belief and does not relate to the contents of the EIS.
29-2	I. NEED FOR ACTION Effects on the Upper Sacramento River Salmon Spawning Reach Below Shasta/Keswick Dams to Red Bluff (river miles 240-300)Shasta Reservoir's storage and cold-water pool supply is the key to salmon and sturgeon production in the Sacramento River system. Winter run salmon depend on the cold water to spawn in summer in the dozen miles of spawning habitat below Shasta/Keswick dams. Spring and fall run salmon depend on the cold water to sustain adult migrating holding and spawning habitat from spring to fall. Tributary salmon that must pass upstream and downstream through the lower Sacramento River also depend on Shasta's storage releases. Sturgeon depend on flow and cooler water throughout the year in the lower Sacramento River from Redding to the Delta but especially in the spring spawning and early development portion of their life cycle. Because Shasta Reservoir has a limited supply of cold water (<50oF) that varies with the total amount of water stored	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter 12, Fish and Aquatic Resources, for the impacts of the alternatives on fish and aquatic resources and water temperatures. Refer to Standard Response 7, Aquatic Resources, regarding the impact analysis and Sacramento River seasonal operations, spring pulse flows, and coldwater pool management. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, for information about spring-run Chinook salmon, fall-run Chinook salmon, green sturgeon, and white sturgeon, among other aquatic species. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.

Ltr#-Cmt#	Comment	Response
	in the reservoir at the beginning of spring the cold-water supply is often exhausted in summer or fall of drier years (Figure 1). Actions taken to conserve the reservoir's storage beginning in spring have helped sustain the cold-water supply through summer but less so in the fall. Consequently management of the cold-water supply (Figure 2) has not met regulatory requirements to sustain the salmon and sturgeon in the Sacramento River. Winter and spring run salmon and green sturgeon are listed under state and federal endangered species legislation. Fall run salmon and white sturgeon are being considered for listing. Actions are needed to protect Shasta storage and conserve its cold-water-pool supply to sustain salmon. The biggest draw on Shasta Reservoir's storage and cold-water pool is downstream water demands both environmental and human (ag/municipal/industrial). Because most of the storage demands are from late spring into fall the dam releases are necessarily from the coldwater pool otherwise the river would become too warm for salmon and sturgeon. Hydropower operations also affect the cold-water supply. The transfer of water from the Trinity River system to Keswick Reservoir below Shasta Dam also affects the cold-water pool supply. Problems with the aging infrastructure of the federal Shasta-Trinity Division also directly and indirectly affect the cold-water pool supply. All these problems require remediation to protect Sacramento River Valley salmon. The long-term plan for operation of the state and federal water projects in the Central Valley is the appropriate mechanisms for addressing these issues.[See original attachment for Figure 1. Water temperature (F) of Sacramento River at Keswick gage below Keswick Reservoir 2019-2024 with average for years 1996-2005. Higher water temperatures in the spring and fall (circles) represent significant impacts to listed salmon and sturgeon.][See original attachment for Figure 2. Shasta Reservoir daily-average storage levels (acre-	Refer to Chapter 3, Alternatives, and Appendix E, Draft Alternatives, regarding the alternatives analyzed in the EIS. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Also refer to Standard Response 4, Alternatives Formulation, regarding the process used to identify, evaluate, refine, and select a reasonable range of feasible action alternatives to be evaluated in the Draft EIS. Refer to Standard Response 8, Trinity River Division, regarding the consideration of Trinty River operations in the EIS and future environmental review processes anticipated for the Trinity River. Refer to Chapter 2, Purpose and Need, regarding the purpose of the action considered, which is to continue the operation of the CVP and the SWP, for authorized purposes including flood control and navigation; water supply; fish and wildlife mitigation, protection, and restoration and enhancement; and power generation. Operation of the CVP and SWP also provides recreation and water quality benefits.

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	ft) for years 2010-2024. A storage level of 4.5 maf is generally considered a full reservoir.]	
29-3	Short and Long Term Actions to Sustain Shasta's Cold-Water Pool Reducing Water Deliveries Reducing water-delivery demands on Shasta Reservoir's storage and its cold-water pool are the primary means of sustaining the cold-water-pool supply in Shasta Reservoir. Water releases from the reservoir can be regulated as required to save water. Such regulation takes considerable planning on the part of USBR to forecast plan and perform the day-to-day management of the system given the many demands and uncertainties in the system operation inputs. Federal contractors and state water right holders have "legal" rights to the stored water and "demand" water when they need it. Then there are "unforeseen" demands that are hard to quantify including the need to meet water quality standards and other environmental and operational needs that can vary significantly (e.g. flood control, water temperature, hydropower, fire suppression, etc.). There are also system requirements where balancing releases from other reservoirs (Oroville and Folsom in the Sacramento Valley Trinity in the Klamath River system and New Melones in the San Joaquin Valley) to meet Delta inflow/outflow criteria through balancing water needs with Shasta storage. That said how USBR goes about managing the overall supply undergoes considerable review over-sight and control to balance and protect water supply uses and benefits. Monthly operational regulation modeling planning and supply allocation management is often "difficult" rigorous "daily" operation management is necessary to meet regulatory and contractor requirements. Operation demands and requirements require planning and decision making under the control of USBR and its partner water agencies. Regulation-permitting	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Standard Response 7, Aquatic Resources, regarding general concern for adverse effects on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta), that could potentially result from the alternatives. Standard Response 7 also discusses Sacramento River seasonal operations, spring pulse flows, and coldwater pool management. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives. Analyses of potential impacts and benefits to aquatic resources are described in EIS Chapter 12, Fish and Aquatic Resources, and in Appendix O, Fish and Aquatic Resources Technical Appendix. Modeling used in the impact evaluations is described in Appendix O, Section O.2, Methods and Tools. Appendix F, Modeling, provides additional details on modeling conducted to support analysis of Central Valley Project (CVP) and State Water Project (SWP) long-term operations. Refer to Chapter 4, Water Quality, and Appendix G, Water Quality Technical Appendix, regarding water quality conditions.

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	requirements are prescribed to meet "daily" operational requirements and standards to protect beneficial uses including water supply and endangered species. Protections of the cold-water pool is one of the key requirements. USBR's CVP and partner agency infrastructure is also "aging" and requires maintenance and upgrade to operate efficiently otherwise failing infrastructure limits management options. Until the necessary upgrades are implemented other changes may be needed in the short-term to protect beneficial uses.	
29-4	Changing Water Delivery Schedules In past years water contractors have altered their water demand schedules on Shasta storage from spring to summer to sustain (or delay use of) Shasta's storage and cold-water-pool supply in summer. A higher storage level in spring will increase the available cold-water-pool supply at the beginning of summer. Deference of any summer use to other seasons would also conserve the cold-water-pool supply in that summer. This should not be a management option left to the discretion of the water users.	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for the impacts of the alternatives on fish and aquatic resources and water temperatures. Refer to Standard Response 7, Aquatic Resources, regarding the impact analysis and Sacramento River seasonal operations, spring pulse flows, and coldwater pool management. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, for information about spring-run Chinook salmon, fall-run Chinook salmon, green sturgeon, and white sturgeon, among other aquatic species. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous

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		approach Reclamation undertook in the formulation of a reasonable range of alternatives.
29-5	Trinity Water Transfer The transfer of Trinity River water to the Sacramento River via Lewiston Reservoir to Keswick Reservoir below Shasta Dam can have a positive or negative effect on Shasta's cold-water pool. In summer the Lewiston water release to Keswick (via the Spring Creek Powerhouse) is often too warm (>50 degrees F) thus requiring balancing releases from Shasta's cold-water pool. In spring cold-water releases from the Spring Creek powerhouse may reduce demand on Shasta's coldwater pool.	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Please refer to Standard Response 8, Trinity River Division, regarding the consideration of Trinty River operations in the EIS and future environmental review processes anticipated for the Trinity River. Impacts to Shasta Reservoir coldwater pool are described in Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix.
29-6	Hydropeaking Operation Operation of the Shasta and Spring Creek powerhouses focuses on hydropeaking generation during the highest daily power demand periods usually afternoon and evening the hottest part of the day in summer (Figure 3). High rates of generation may include warm water (>50 degrees F) from the surface of Lewiston and Shasta reservoirs which may require balancing releases of coldwater at other times from Shasta to maintain Keswick Dam cold release temperatures to the Sacramento River. Changing hydropeaking operation may reduce demands on the cold-water-pool supply at the expense of peak-power production (and federal government revenues). [See original attachment for Figure 3. Hourly temperature of Shasta Dam release to Keswick Reservoir August 7-12, 2024. Water temperature of peak generation releases in afternoon and evening tend to be higher because higher volume releases draw more warmer reservoir surface water and because afternoon and evening water temperatures are usually higher. Over time releases tend to get warmer as the volume of the reservoir	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter X, Power, and Appendix U, Power Technical Appendix, for analysis of the alternatives and impacts on power generation. Refer to Standard Response 7, Aquatic Resources, regarding the impact analysis and Sacramento River seasonal operations, spring pulse flows, and coldwater pool management. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Refer to Standard Response 4, Alternatives Formulation, on the rigorous approach Reclamation undertook to formulate the reasonable range of alternatives.

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	declines and water temperatures in the various vertical strata gradually increase.]	
29-7	End-of-Summer Storage Mandating higher end-of-summer storage retention requirements at the expense of seasonal water supply deliveries can increase available cold-water pool volumes the following season.	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Standard Response 7, Aquatic Resources, regarding the impact analysis and Sacramento River seasonal operations, spring pulse flows, and coldwater pool management. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Refer to Standard Response 4, Alternatives Formulation, on the rigorous approach Reclamation undertook to formulate the reasonable range of alternatives.
29-8	Water Transfers Water contractors can "sell" their water and change the delivery (storage release) schedule of the water for downstream use. Such changes can have positive or negative effects on Shasta's cold-water-pool supply. A delay in release/delivery from summer to fall can benefit the summer cold-water-pool supply that summer.	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Standard Response 7, Aquatic Resources, regarding the impact analysis and Sacramento River seasonal operations, spring pulse flows, and coldwater pool management. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of alternatives.
29-9	Shasta-Trinity Division Infrastructure The Shasta Temperature Control Device or TCD allows for drawing hydropower releases from different depths in Shasta Reservoir to control dam-release water temperatures (Figure 4).	Please refer to Chapter 2 Purpose and Need for this multipurpose project. Infrastructure modifications are not considered in the alternatives for this Draft EIS.

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	Three levels of "river outlets" also allow some additional control by bypassing the hydropower system. The problem with the TCD is that it leaks warm water from the surface of Shasta Reservoir in summer thus requiring additional cold-water pool discharge to meet temperature requirements below Shasta Dam. The cause of warm water inputs in summer from the Lewiston Reservoir transfer to Keswick Reservoir below Shasta Dam is a design failure in the temperature control curtain in Lewiston Reservoir. The curtain is designed to pass only bottom cold water from the reservoir into the penstocks going to the Spring Creek Powerhouse on Keswick Reservoir. Shasta cold-water-pool supply is necessary to overcome the warm water entering Keswick Reservoir. [See original attachment for Figure 4. Shasta Reservoir water temperature profile and TCD operating conditions on 8/6/24.] [See original attachment for Figure 5. Shasta Dam. River outlets releasing water. Five penstocks from TCD are left of spillway each has slightly different elevation and water source these too can be used to manage water temperatures below the dam.]	
29-10	End of Summer/September (EOS) Storage The target EOS storage is an important management criteria as it often determines how much storage (and cold-water-pool supply) is available the following water year at the end of winter or spring (see Figure 2). Mandating higher EOS storage thus can preserve the cold-water-pool supply over a multiyear period. Effect of Keswick Dam releases on Upper River Water Temperatures Water temperatures in the upper Sacramento River from Keswick Dam (rm 300) to Red Bluff (rm 240) are controlled by the Shasta/Keswick Dam releases (flow rate and temperature) as well	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for the impacts of the alternatives on fish and aquatic resources and water temperatures. Refer to Standard Response 7, Aquatic Resources, regarding the impact analysis and Sacramento River seasonal operations, spring pulse flows, and coldwater pool management. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, for information about spring-run Chinook salmon, fall-run Chinook salmon, green

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	as air temperatures and tributary inputs (flow and temperature). Reclamation can control water temperatures largely with Shasta/Keswick releases (flow and temperature). Water temperatures are near optimal for spawning in wetter years (Figures 6 and 7) but are often above stressful levels for spawning salmon and green sturgeon (>60 degrees F) in dry years (Figures 8-10). [See original attachment for Figure 6. Spring water temperatures in the upper Sacramento River below Shasta/Keswick dams in above-normal water year 2024. Note the general effect of the Keswick Dam (KWK) release temperature and the increasing general effect of warmer air temperatures as spring progresses. Note also the further warming from the additional 15-mile reach between Bend Bridge (BND) and the Red Bluff (RDB) gage. Note the yellow line depicting stressful conditions for salmon and sturgeon in spring. The state water quality objective for the reach is 56 degrees F.] [See original attachment for Figure 7. Spring water temperatures in the upper Sacramento River below Shasta/Keswick dams in wet water year 2023. Note also the further warming from the additional 15-mile reach between Bend Bridge and the Red Bluff gage. Note the yellow line depicting stressful conditions for salmon and sturgeon in spring. The state water quality objective for the reach is 56 degrees F.] [See original attachment for Figure 8. Spring water temperatures in the upper Sacramento River below Shasta/Keswick dams in critically dry (and low storage) water year 2022. Note also the further warming from the additional 15-mile reach between Bend Bridge and the Red Bluff gage. Note the yellow line depicting stressful conditions for salmon and sturgeon in spring. Note the red line depicting near lethal conditions for spawning salmon and sturgeon. The state water quality objective for the reach is 56 degrees F.] [See original attachment for Figure 9. Spring water temperatures in the upper Sacramento River below Shasta/Keswick dams in critically dry	sturgeon, and white sturgeon, among other aquatic species. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Alternatives reflect water operations and use of the Shasta Temperature Control Device to impact temperatures in the Sacramento River given hydrology and climate. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of the reasonable range of alternatives.

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	(and low storage) water year 2021. Note also the further warming from the additional 15-mile reach between Bend Bridge and the Red Bluff gage. Note the yellow line depicting stressful conditions for salmon and sturgeon in spring. Note the red line depicting near lethal conditions for spawning salmon and sturgeon. The state water quality objective for the reach is 56 degrees F. The high water temperatures below Keswick Dam represent releases from upper river outlets to conserve the cold-water pool supply in Shasta Reservoir.] [See original attachment for Figure 10. Comparison of spring and early summer water temperature at Red Bluff in the four most-recent critically dry years. The red line depicts the state water quality objective for Red Bluff. The yellow line depicts the stressful water temperature for migration holding spawning and early rearing salmon and sturgeon in the upper Sacramento River. In prior decades water temperature at Red Bluff in critically dry years rarely exceeded 60 degrees F in late spring and early summer.]	
29-11	Effects on the Upper Sacramento River Green Sturgeon and Salmon Effects on Green Sturgeon The concern for green sturgeon is they spawn in the upper Sacramento River near Red Bluff and Redding. They spawn mainly in April-May when waters initially warm after winter. Like salmon they too need colder water for female egg maturation and embryo development. Water temperatures are near optimal for spawning in wetter years (Figures 6 and 7) but above stressful levels (>60oF) in dry years (Figures 8-10). After hatching young emigrate from the upper river from late May to early July (Figure 6). In drier years they emigrate from the upper river mainly in June (Figure 11) and often subject to stressful water temperatures (see Figure 10). [See original attachment for Figure 11. Green sturgeon juvenile catch patterns in Red Bluff rotary screw traps 2003-2012.]	This comment provides background information. Refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for the impacts of the alternatives on fish and aquatic resources and water temperatures.
29-12	Effects on Winter Run Salmon. Winter run salmon migrate from	In Section O.1, Affected Environment, of Appendix O, Fish and

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	the ocean to the upper Sacramento River in winter and spring. They spawn mainly from May to August. Their eggs incubate into September and most fry emergence occurs in October. Adults are subjected to warm water stress in drier years in spring on their upstream migration and then during holding and spawning May-August. Warm water delays migration and spawning and uses the stored energy of the adult salmon that reduces survival of eggs and fry. Peak fry emigration past Red Bluff into the lower Sacramento River occurs in September-October (Figure 12) when water temperatures can be stressful from low flows especially in low storage dry years. [See original attachment for Figure 12. Catch patterns of juvenile winter run salmon in Red Bluff rotary screw traps 2009-2023.]	Aquatic Resources Technical Appendix, the Draft EIS describes winter-run Chinook salmon spawning as occurring April through August, with peak spawning between May and July. The Affected Environment also states that winter-run Chinook salmon fry emergence occurs primarily from July to October and migration past Red Bluff Diversion Dam may begin in late July, peaks in the fall, and can continue until mid-March in drier years (Vogel and Marine 1991). The comment is generally consistent with the information in the Affected Environment of Appendix O. Vogel, D. A., and K. R. Marine. 1991. Guide to upper Sacramento River Chinook salmon life history: CH2M HILL, Redding, California. Produced for the U.S. Bureau of Reclamation Central Valley Project.
29-13	Effects on Spring Run Salmon Spring run salmon migrate from the ocean to the upper Sacramento River in winter and spring. They hold over-summer and spawn mainly in September-October. Their eggs incubate in gravel beds into December and most fry emergence occurs in December-January. Adults are subjected to warm water stress in drier years in spring on their upstream migrations and then during holding May-August and spawning September-October. Warm water delays spawning and uses stored energy of the adult salmon and reduces subsequence survival of eggs and fry. Fry emigration past Red Bluff into the lower Sacramento River occurs in winter (Figure 13) when water temperatures are generally optimal however low flows can lengthen or delay their migration and expose fry to greater predation while rearing and migrating especially in low storage dry years. [See original attachment for Figure 13. Catch patterns of juvenile spring run salmon in Red Bluff rotary screw traps for brood years 2009-2023.]	In the Affected Environment, Section O.1.3.2, the Draft EIS discusses high water temperatures as potential stressors to spring-run Chinook salmon spawning and egg incubation and describes life history timing. This information is generally consistent with the Affected Environment described in Appendix O.

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29-14	Effects on Fall Run Salmon Fall run salmon migrate from the ocean to the upper Sacramento River in late summer and early fall. They spawn mainly from October to December. Their eggs incubate into winter and most fry emergence occurs in February-March. Adults are subjected to warm water stress in drier years on their upstream migrations and then during holding and spawning. Warm water delays spawning and uses stored energy of the adult salmon and reduces survival of eggs and fry. Peak fry emigration past Red Bluff into the lower Sacramento River occurs in winter with parr-smolt migration in spring (Figure 14). Water temperatures can be stressful from low flows especially in low storage dry years. [See original attachment for Figure 14. Catch patterns of juvenile fall run salmon in Red Bluff rotary screw traps for brood years 2009-2023.]	The information presented is generally consistent with the affected environment presented on Appendix O.
29-15	Effects on Lower Sacramento River Water Temperatures and Flow Rates Red Bluff (river mile 240) to Wilkins Slough (river mile 120) Below Red Bluff the water temperature is less controlled by Shasta/Keswick dam-release water temperature and more by streamflow rates and air temperatures. The effects of streamflow and water temperature from tributary inputs are also important. Keswick release water temperatures are still important downstream for some miles below Red Bluff. However the water temperature downstream near Wilkins Slough (rm 120) is mainly a function of flow and air temperature. The Basin Plan water temperature objective and project water rights permits call for 68 degrees F being maintained in the middle reach of the Sacramento River the 150-mile reach from Red Bluff to the Delta in all water year types to protect salmon sturgeon steelhead and other native fishes. This key water quality criteria has been	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for the impacts of the alternatives on fish and aquatic resources and water temperatures. Refer to Standard Response 7, Aquatic Resources, regarding the impact analysis and Sacramento River seasonal operations, spring pulse flows, and coldwater pool management. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, for information about spring-run Chinook salmon, fall-run Chinook salmon, green sturgeon, and white sturgeon, among other aquatic species. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the

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	ignored in wet and dry years whether Shasta Reservoir is full or not. Maintaining the 68oF objective is important for green sturgeon and all races of upper Sacramento River salmon. It is also important to maintain the migratory corridor for all the tributary salmon and steelhead. It is also critical in maintaining spring spawning and early rearing habitat of white sturgeon in their primary critical habitat of the lower Sacramento River from below Red Bluff to the Delta. In drier years the 68 degrees F objective is often not met in the important spring season (Figure 15). Wet year spring flows are usually high (Figure 16) and maintain cooler water temperatures. However July flows have been too low in the last decade in all water year types to maintain the objective. Summer water temperatures have also been higher in the past decade (Figure 17) with lower flows (Figure 18). In prior decades there was at least an attempt to maintain higher flows and the water temperature objective. Climate change has meant warmer air temperatures in the Sacramento Valley thus making the objective more difficult to achieve [Footnote 1: https://calsport.org/fisheriesblog/?p=4623] but the objective is achievable at least in wetter years [Footnote 2: https://calsport.org/fisheriesblog/?p=4695].For this middle reach of the Sacramento River we recommend a 65 degrees F spring objective and 68 degrees F summer objective and the necessary 8,000-10,000 cfs streamflows to maintain these temperatures and minimum transport rates for rearing and emigrating juvenile salmon and sturgeon. [See original attachment for Figure 15. Spring and early summer water temperature at the Wilkins Slough gage (rm 120) 2017-2024. The yellow line depicts the 68 degrees F water quality objective.] [See original attachment for Figure 16. Spring and early summer streamflow at the Wilkins Slough gage (rm 120) 2017-2024. The purple lines depict the range of flow necessary to meet the 68 degrees F water quality objective.] [See original attachment for	EIS. Refer to Standard Response 10, Climate Change, regarding how climate change data was included in the modeling assumptions for the Draft EIS. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Alternatives reflect water operations and use of the Shasta Temperature Control Device to impact temperatures in the Sacramento River given hydrology and climate. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives.

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	Figure 17. May-October water temperature at the Wilkins Slough gage (rm 120) 2013-2024. Note the 68 degrees F water quality objective was met in midsummer (beginning of August) only in critically dry year 2013 below normal year 2018 and above normal year 2024.] [See original attachment for Figure 18. May-October streamflow at the Wilkins Slough gage (rm 120) 2015-2024. The yellow line depicts the average for the decade 2005-2014 that included 5 critically dry years. The lowest flows were in critically dry water years 2015 and 2022.] Effects on Lower Sacramento River and North Delta Water Temperatures and Flow Rates Wilkins Slough (river mile 120) to Freeport (river mile 50) Below Wilkins Slough (rm 120) the water temperature is less controlled by Shasta/Keswick dam release water temperature and more by streamflow rates and air temperatures above the mouth of the Feather River at Verona (rm 80). Freeport (rm 50) in the north Delta includes the Feather and American river inputs which often are substantial and cooler than the Sacramento River. The effect of streamflow and water temperature from these major tributaries is significant. Despite the beneficial tributary inputs the Sacramento River at Freeport flow is often too low and water temperatures are too high in some spring-summer's especially in dry water years (Figures 19-23). Spring water temperatures above 65 degrees F are detrimental to immigrating adult salmon and sturgeon and to emigrating juvenile salmon and sturgeon. Summer temperatures higher than 70 degrees F hinder or block adult salmon migrations and are stressful to late emigrating juvenile salmon and sturgeon entering the Delta. The 68 degrees F water quality objective is the prescribed protective criteria. We recommend a 65 degrees F objective for spring and a 70 degrees F objective for summer at	

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	Freeport for the following reasons. The spring objective would provide protection during the important migrating seasons for salmon and sturgeon. The summer objective would provide a minimum of protection for late and early migrant adult salmon and late emigrating juvenile salmon and sturgeon. These objectives can be met by maintaining approximately 20000 cfs Delta inflow at Freeport in spring-summer. [See original attachment for Figure 19. April-July water temperatures at the Freeport gage 2017-2024.] [See original attachment for Figure 20. April-July streamflow at the Freeport gage 2017-2024. Purple line depicts our recommended minimum streamflow in the lower Sacramento River in the Delta at Freeport (rm 50) of at least 20000 cfs in spring and early summer (April-July).] [See original attachment for Figure 21. May-July water temperatures at the Freeport gage 2021-2024 and average for 2001-2010.] [See original attachment for Figure 21. July-August streamflow at the Freeport gage 2021-2024. We recommend 20000 cfs minimum in summer of all water year types.] [See original attachment for Figure 22. May-October water temperatures at the Freeport gage 2011-2024.]	
29-16	Effects on the Sacramento River channel of the Delta Water Temperatures and Flow Rates Freeport (river mile 50) to Rio Vista (river mile 12)/Collinsville (river mile 0) Below Freeport (rm 50) the water temperature gets warmer because Delta water velocities and transport rates slow in the wider tidal Delta and much of the inflow is diverted off into the Central Delta by the south Delta export pumps of the water projects. Approximately 20 miles below Freeport much of the Sacramento River flow is diverted into the Central Delta through the Delta Cross Channel (DCC) and Georgianna Slough (GS). Sacramento River flows of 20000 cfs at Freeport (see Figure 20)	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for the impacts of the alternatives on fish and aquatic resources and water temperatures. Refer to Standard Response 7, Aquatic Resources, regarding the impact analysis and Sacramento River seasonal operations, spring pulse flows, and coldwater pool management. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, for information

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	are reduced to less than 5000 cfs below the entrances to the DCC and GS (Figure 24) due to the demands of Delta agriculture and south Delta exports. Water temperatures in early summer are 1-2 degrees F higher in the Sacramento River channel below the exits to the DCC and GS due to the lower flows and tidal exchange with the DCC and GS in wetter years (Figure 25) and drier years (Figure 26). Note also that the drier years were substantially warmer than wetter years due to lower net streamflows at both locations. The high rate of diversion of Freeport streamflow entrains juvenile emigrating salmon in the spring and juvenile emigrating white sturgeon in the early summer (see wet year 2023 Figure 27). With wet years being the only year type with spring conditions adequate for successful white sturgeon reproduction [Footnote 3: https://calsport.org/fisheriesblog/?p=4721] their vulnerability to entrainment into the DCC/GS becomes a critical feature of their life cycle in the Sacramento River. By the time the Sacramento River reaches Rio Vista (rm 10) it has picked up ag-return water flow from the San Joaquin River via Three-Mile Slough and "carriage" water (diverted water not entrained into the south Delta export pumps). It also picks up the heat from those and other sources returning to the river above Rio Vista (e.g. Yolo Bypass Cache Slough Steamboat and Miners sloughs). Rio Vista water temperatures are generally several degrees F higher than Freeport for these reasons (Figure 28). Net Sacramento River channel flow leaving the Delta is also double that below the DCC/GS and about half the Freeport flow. Water temperatures at the Rio Vista Bridge gage reached an adverse 75 degrees F in summer of wet year 2023 during heat waves under these conditions (Figure 28).To alleviate the adverse conditions we recommend maintaining a 20000-22000 cfs Freeport inflow a 5000-10000 cfs minimum flow below the DCC/GS diversion 5000-10000 total Delta diversions (internal and south Delta	about spring-run Chinook salmon, fall-run Chinook salmon, green sturgeon, and white sturgeon, among other aquatic species. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.

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	exports) and a 10000-15000 cfs Delta outflow (DTO) with the higher streamflow rates and lower diversions during heat waves. There are a variety of ways to accomplish such conditions available to the water projects that could be perfected through adaptive management. Some were applied if only for short periods in 2024 (see Figures 22 and 28). [See original attachment for Figure 23. April-July streamflow in the lower Sacramento River in the Delta below Georgianna Slough 2017-2024. Streamflow should be 5000-10000 cfs in spring and early summer (April-July) with higher rates during heat waves.] [See original attachment for Figure 24. June-July water temperatures in 2023 and 2024 in Sacramento River at Freeport and below Georgianna Slough. Note higher June water temperatures below Georgianna Slough and Delta Cross Channel in both years.] [See original attachment for Figure 25. June-July water temperatures in 2021 and 2022 in Sacramento River at Freeport and below Georgianna Slough. Note generally higher water temperatures below Georgianna Slough and Delta Cross Channel in both years.] [See original attachment for Figure 26. Young sturgeon emigrating from the lower Sacramento River reach the Delta in early summer as shown here in 2023 in south Delta export salvage collections. Note the high export levels of 20000 acre-feet per day (approximately 10000 cfs; in this figure SWP exports are shown behind CVP exports). Lack of collections at the SWP (Clifton Court Forebay) is likely due to the specific conditions in the forebay prior to salvage.][See original attachment for Figure 27. Comparison of water temperatures at Wilkins Slough (WLK) Freeport (FPT) and Rio Vista Bridge (RVB) in summer of wet year 2023. Also shown is Delta outflow (DTO) and Rio Vista (RVB) air temperature.] [See original attachment for Figure 28. Water year 2023 July-August south Delta exports (HRO and TRP) Delta outflow (DTO) Wilkins Slough flow (WLK) and Freeport flow (FPT). Existing standards (D-1641) allow 65% export/inflow ratio.	

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	We recommend Delta inflow be maintained at 20000 cfs and Delta outflow be maintained at 10000-12000 cfs in all water year types.][See original attachment for Figure 29. Water year 2024 June-midAugust south Delta exports (HRO and TRP) Delta outflow (DTO) Wilkins Slough flow (WLK) and Freeport flow (FPT). Existing standards (D-1641) allow 65% export/inflow ratio. We recommend Delta inflow be maintained at 20000 cfs and Delta outflow be maintained at 10000-12000 cfs in all water year types.]	
29-17	Effects on the Bay Poor water quality conditions in the Bay such as high water temperatures are generally a function of conditions in the Delta. High Delta water temperatures transfer downstream to the Bay in the monthly tidal cycle when the Delta drains into the Bay especially during heat waves. Water temperatures in the Bay can increase as warm water flows from the Delta to the Bay in each tidal cycle (Figures 31-33). We recommend that Delta outflow to the Bay be maintained at 10000-12000 cfs in all water year types to maintain quality Bay habitat for Delta native fishes. Such minimum flows will ensure the low-salinity zone of the Bay-Delta estuary is maintained in the east Bay and Montezuma Slough and not in the warmer Delta. [See original attachment for Figure 30. Hourly water temperature and salinity in late July 2024 in Suisun Bay (eastern SF Bay downstream of Delta). Note fresher lower salinity warmer Delta water entering Bay on ebb tides twice per day. Also note the gradual freshening and warming as the Delta gradually drains toward the Bay in this moon phase.] [See original attachment for Figure 31. Hourly water temperature and salinity in early July 2024 in Suisun Bay (eastern SF Bay downstream of Delta). Note fresher lower salinity warmer Delta water entering Bay on ebb tides twice per day. Also note the gradual freshening and warming as the Delta gradually drains	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter 4, Water Quality, and Appendix G, Water Quality Technical Appendix, regarding water quality conditions in the Bay-Delta. Refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for the impacts of the alternatives on fish and aquatic resources and water temperatures. Refer to Standard Response 7, Aquatic Resources, regarding the impact analysis and Sacramento River seasonal operations, spring pulse flows, and coldwater pool management. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, for information about spring-run Chinook salmon, fall-run Chinook salmon, green sturgeon, and white sturgeon, among other aquatic species. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.

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	toward the Bay in this moon phase.] [See original attachment for Figure 32. Water temperature and river stage in July-August in the Western Delta at Jersey Point in critical drought year 2022. Black vertical lines depict full moons. Note warm water exiting the Delta toward the east Bay during periods on the monthly tidal cycle when the Delta drains toward the Bay before and after the high tides of the full moons.] [See original attachment for Figure 33. Delta outflow to the Bay May-October 2010-2024. We recommend Delta outflow be maintained at 10000-12000 cfs in all year types.]	The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives.
29-18	II. Summary of Recommendations The following is a summary of our recommendations for the Long-Term Operations of the State and Federal Water Projects in the Central Valley. Shasta Reservoir Storage and Cold-Water Pool Conservation We recommend the following minimum end-of-summer/end-of-year storage level for Shasta Reservoir. Wet Year 3.0 maf Normal Year after Wet Year 2.5 maf Below-Normal or Dry Year 2.0 maf Critical Dry Year 1.25 maf Such standards would have required 200-300 taf higher EOS storage in 2014 2015 2018 and 2022 (Figure 34). [See original attachment for Figure 34. Shasta Reservoir daily average storage levels in acre-ft 2014-2021. The red circles are suggested minimum end of year target criteria for the water year types. The red arrows are years in hindsight when the criteria were not met.]	Recommendations have been noted. The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives.
29-19	Oroville Reservoir Storage and Cold-Water Pool Conservation We recommend the following minimum end-of-summer/end-of-year storage level for Oroville Reservoir. Wet and Above Normal Years 2.0 maf Below Normal and Dry Years 1.5 maf	Operations of Oroville Dam are outside the scope of the EIS and are not addressed as part of the study area. Please refer to Chapter 2, Purpose and Need, regarding the study area location and description.

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	Critical Dry Year 1.0 maf Such standards would have required 200-500 taf higher EOS storage in 2013 2014 2016 2021 and 2022 (Figure 35). Years 2017 and 2018 storage were adversely affected by Oroville Dam spillway failure. [See original attachment for Figure 35. Oroville Reservoir daily-average storage (acre-feet) 2012-2021. Recommended minimum storage criteria for end of November are shown by red circles. Year 2017 and 2018 storage were adversely affected by the Oroville Dam spillway failure.]	
29-20	Folsom Reservoir Storage and Cold-Water Pool Conservation We recommend the following minimum end-of-summer/end-of-year storage level for Folsom Reservoir. High beginning storage years 500 taf Intermediate beginning storage years 350 taf Low beginning storage years 250 taf Such standards would have required 100-200 taf higher EOS storage in critically dry years and some wetter years (Figure 36). [See original attachment for Figure 36. Folsom Reservoir daily-average storage (acre-feet) 2000-2021. Recommended minimum storage criteria are shown by circles: blue for high-storage years; light blue for intermediate-storage years; yellow for low-storage years. Red arrows are years that grossly failed to maintain these objectives.]	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for the impacts of the alternatives on fish and aquatic resources and water temperatures. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternative.
29-21	Sacramento River Streamflows and Water Temperatures We generally concur with the actions prescribed in Alternative 2/2b for streamflows in Section E.5 and E.6 of the DEIS. Where we disagree is covered in the following specific recommendations. We recommend the following streamflow and water temperature standards for the Sacramento River: 1) Maintain year-round 53 degrees F daily average water temperature maximum at Clear Creek gage (CCR) (rm 290) near Redding in all water year types. 2) Maintain year-round 60	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for the impacts of the alternatives on fish and aquatic resources and water temperatures. Refer to Standard Response 7, Aquatic Resources, regarding the

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	degrees F daily-average water temperature maximum at Red Bluff gage (RDB) (rm 240) in all water year types (see Figures 37 and 38 for historical perspective). 3) Maintain Late Spring through Fall 68 degrees F daily average water temperature maximum at Wilkins Slough gage (WLK) (rm 120) in all water year types (see Figures 39-42 for a recent perspective water projects ignoring the 68 degrees F standard and permit requirement in a critically dry a wet and above normal water year.) 4) Maintain early spring (mid-March to mid-May) 65 degrees F daily average water temperature maximum at Wilkins Slough gage (WLK) in all water year types. 5) Maintain year-round 8000-10000 cfs daily-average streamflow minimum at Wilkins Slough gage (WLK) in all water year types. Reduce agricultural deliveries as necessary between natural flow pulses from tributaries to maintain minimum streamflows (Figure 43). 6) Maintain year-round minimum 15000-20000 cfs of Delta inflow from Sacramento River at Freeport (FPT). 7) Maintain Freeport (FPT) water temperatures below 65 degrees F in spring and fall and below 70 degrees F in summer. (See Figures 27 and 44 for perspective.). Also see Figures 45 and 46 for 41 salmon salvage at south Delta export facilities in May-June period of 2023 and 2024 to indicate presence of late-spring emigrating juvenile salmon in the Delta. 8) Maintain lower Sacramento River daily average streamflow in north Delta gage below entrance to Georgianna Slough (GES) year-round at a minimum daily average of 10000 cfs (see Figure 23). 9) Limit the total average-daily diversion of Sacramento River from the Delta Cross Channel (DCC) and Georgianna Slough (GS) to a maximum daily-average of 10000 cfs. 10) Limit north Delta Sacramento River water temperature below Georgianna Slough at GES gage and Rio Vista Bridge gage (RVB) to a maximum daily average of 72 degrees F. (See Figures 27 47 48 and 49 for perspective.)	impact analysis and Sacramento River seasonal operations, spring pulse flows, and coldwater pool management. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, for information about spring-run Chinook salmon, fall-run Chinook salmon, green sturgeon, and white sturgeon, among other aquatic species. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives.

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29-22	Delta Outflow 11) Maintain Delta outflow in all years to a minimum of 10000-12000 cfs with the higher outflow in summer heat waves. (See Figures 47 and 48 for perspective.). The red line in the figures is our recommended maximum daily average 72 degrees F to be maintained by a combination of lower upstream water temperatures reduced Delta water diversions and higher Delta outflows.	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for the impacts of the alternatives on fish and aquatic resources and water temperatures. Refer to Standard Response 7, Aquatic Resources, regarding the impact analysis and Sacramento River seasonal operations, spring pulse flows, and coldwater pool management. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, for information about spring-run Chinook salmon, fall-run Chinook salmon, green sturgeon, and white sturgeon, among other aquatic species. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives.
29-23	Bay 12) Maintain East Bay (Suisun Bay and Montezuma Slough) water temperatures at a maximum daily temperature of 65 degrees F in April-May and 72 degrees F June-September with Delta outflow in all years at a minimum of 10000-12000 cfs or higher outflow if necessary to sustain water temperature standards. (See Figures 33 50 and 51 for perspective.). Note summer water temperatures greater than our recommended 72 degrees F were associated with low dissolved oxygen (6ppt or	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for the impacts of the alternatives on fish and aquatic resources and water temperatures. Refer to Standard Response 7, Aquatic Resources, regarding the

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	less) and higher chlorophyll levels (algae blooms). Water temperatures higher than 72 degrees F would be detrimental to salmon sturgeon and smelt residing in the Bay in summer.	impact analysis and Sacramento River seasonal operations, spring pulse flows, and coldwater pool management. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, for information about spring-run Chinook salmon, fall-run Chinook salmon, green sturgeon, and white sturgeon, among other aquatic species. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives.
29-24	Sacramento River Major Tributaries 13) Water temperatures in the lower American River as measured at the Watt Avenue Bridge gage (AWB) should be a maximum of 65 degrees F (Figure 52). 14) Water temperatures in the lower Feather River as measured at the Feather River upstream of the Afterbay outlet gage (AWB) should below lower than a maximum of 65 degrees F (Figure 53).15) Water temperatures in the lower Feather River as measured at the Gridley gage should be a maximum of 68 degrees F (Figure 54).	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for the impacts of the alternatives on fish and aquatic resources and water temperatures. Refer to Standard Response 7, Aquatic Resources, regarding the impact analysis and Sacramento River seasonal operations, spring pulse flows, and coldwater pool management. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, for information about spring-run Chinook salmon, fall-run Chinook salmon, green sturgeon, and white sturgeon, among other aquatic species. Please refer to Standard Response 5, Adequacy of Analysis and

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		Mitigation, regarding the adequacy of the analysis provided in the EIS. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives. Operations of Oroville Dam are outside the scope of the EIS and are not addressed as part of the study area. Please refer to Chapter 2, Purpose and Need, regarding the study area location and description.
29-25	San Joaquin River at Entrance to Delta at Mossdale 16) Water temperatures in the lower San Joaquin River as measured at the Mossdale gage should be a maximum of 72 degrees F (Figure 55) maintained by higher seasonal Delta inflow at Mossdale. [See original attachment for Figure 37. Water temperature at Red Bluff gage in the last year of three recent drought periods. Also shown is average from years 2007-2016. The point of this chart is to show the most recent trend in allowing higher summer water temperatures in the upper Sacramento River in summer to the detriment of salmon and sturgeon. Early summer is used by late immigrant and emigrant salmon and juvenile green sturgeon. July-August was an important mid-summer immigration and prespawn holding season for fall-run and spring-run salmon. Water temperatures above 60 degrees F are stressful for these life stages of salmon and sturgeon. The water quality objective and water right permits specify a maximum water temperature at Red Bluff of 56 degrees F.] [See original attachment for Figure 38. Water temperature at Red Bluff gage	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for the impacts of the alternatives on fish and aquatic resources and water temperatures. Refer to Standard Response 7, Aquatic Resources, regarding the impact analysis and Sacramento River seasonal operations, spring pulse flows, and coldwater pool management. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, for information about spring-run Chinook salmon, fall-run Chinook salmon, green sturgeon, and white sturgeon, among other aquatic species. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.

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	in years 2019-2024 and the average for 1996-2005 a period of high salmon and sturgeon population abundance in reference to the past decade. The point of this chart is to show the most recent trend in allowing higher spring to fall water temperatures in the upper Sacramento River to the detriment of salmon and sturgeon. The water quality objective and water right permits specify a year-round maximum water temperature at Red Bluff of 56 degrees F.] [See original attachment for Figure 39. Streamflow and water temperature at Wilkins Slough gage (rm 120) April-August of drought year 2022. Red line is present water quality objective for water temperature for the lower Sacramento River.] [See original attachment for Figure 40. Streamflow and water temperature at Wilkins Slough gage (rm 120) April-August of wet year 2023. Red line is present water quality objective for water temperature for the lower Sacramento River.] [See original attachment for Figure 41. Streamflow and water temperature at Wilkins Slough gage (rm 120) April-August of above-normal water year 2024. Red line is present water quality objective for water temperature for the lower Sacramento River.] [See original attachment for Figure 42. Water temperature at Wilkins Slough gage (rm 120) in years 2019-2024. Water temperature of 68F is present water quality objective for the lower Sacramento River.] [See original attachment for Figure 43. Streamflow at Bend Bridge gage (BND) river mile 250 and Wilkins Slough gage (WLK) river mile 120 in May-June of above-normal water year 2024. The difference is agricultural water deliveries minus tributary inputs (which varied from about 2000 cfs in early May to 1500 cfs in early June).] [See original attachment for Figure 44. Streamflow (daily average cfs) and water temperature (daily average F) in lower Sacramento River in north Delta at Freeport gage (FPT) (rm 50) in June of wet year 2023 and above-normal water year 2024. Also shown is daily-average June air temperature at Red Bluff in 2023.] [See original	Refer to Standard Response 6, Hydrologic Modeling and Surface Water Resources, regarding modeling assumptions and analyses of drought. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives. Operations of Oroville Dam are outside the scope of the EIS and are not addressed as part of the study area. Please refer to Chapter 2, Purpose and Need, regarding the study area location and description.

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	attachment for Figure 45. May-June 2023 salmon salvage at south Delta export facilities with export rates (acre-ft).] [See original attachment for Figure 46. May-June 2024 salmon salvage at south Delta export facilities with export rates (acre-ft).] [See original attachment for Figure 47. Water temperature and air temperature at Rio Vista Bridge (RVB) and Delta outflow (DTO) mid-May to mid-July 2024.] [See original attachment for Figure 48. Delta outflow and Rio Vista Bridge water temperature mid-May to mid-June 2024. Blue line is recommended Delta outflow standard. Orange line is recommended water temperature standard See original attachment for Figure 49. Daily average water temperature at Rio Vista Bridge gage (RVB) 2019-2024.] [See original attachment for Figure 50. Hatchery fall-run adult salmon survival percentage from Bay releases vs Delta outflow to the Bay at the time of release. The years noted are the percent returns for the below normal water years 2016 and 2018 and the wet year 2017. Blue dots with outflow below 5000 cfs are from 2014 and 2015 which were drought years under relaxed water quality standards. The red line is the hypothesized relationship between survival and Delta outflow.] [See original attachment for Figure 51. Water temperature dissolved oxygen and chlorophyll concentration in western Suisun Bay 2022-2024.] [See original attachment for Figure 52. Water temperature (F) in the lower American River at Watt Avenue Bridge 2019-2024.] [See original attachment for Figure 53. Water temperature (F) in the lower Feather River upstream of Afterbay outlet 2019-2024.] [See original attachment for Figure 54. Water temperature (F) in the lower Feather River at Gridley gage (downstream of Afterbay outlet) 2019-2024.] [See original attachment for Figure 55. Water temperature (F) in the lower San Joaquin River at Mossdale 2019-2024.]	
29-26	Summary of Streamflow and Water Temperature	The EIS has been prepared in compliance with NEPA and evaluates

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	Recommendations Nearly three decades ago state and federal regulators prescribed a year-round upper water temperature limit of 68 degrees F (20 degrees C) for the Lower Sacramento River below Red Bluff to protect salmon sturgeon steelhead and water quality. The condition was put in water right permits anadromous fish restoration plans the state's water quality plan for the basin and in water quality standards adopted by the USEPA. Adult spring fall and winter-run salmon migrate up the Lower Sacramento River and its tributaries to spawn from spring through fall. This is also the rearing season for spring-spawning sturgeon striped bass splittail and steelhead all once abundant in the Lower Sacramento River watershed. The effect of the prescription's administration in the early 1990s can be seen in the water temperature record for Wilkins Slough in the Lower Sacramento River near Grimes (Figure 56).The foremost issue here is the long-term trend of reduced river flows (Figure 57) especially in drought years such as 2014 2015 2021 and 2022 under emergency drought orders that resulted 59 in Delta inflow water temperatures near 80 degrees F (Figure 58) and the highest summer salinities in recent decades in the Bay (Figure 59). [See original attachment for Figure 56. Water temperatures in the lower Sacramento River at Wilkins Slough (rm 120) from 1967-2022. Red line is water quality standard.] [See original attachment for Figure 57. Daily average streamflow in the lower Sacramento River at Wilkins Slough (rm 120) from 1951-2022.] [See original attachment for Figure 58. Daily average water temperatures in the lower Sacramento River at Freeport (rm 50) from 1967-2022.] [See original attachment for Figure 59. Salinity (EC) measured at Benecia Bridge at east entrance to San Pablo Bay (North Bay) 1997-2023.]	the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, regarding water temperatures in the Sacramento River. Refer to Chapter 4, Water Quality, and Appendix G, Water Quality Technical Appendix, regarding water quality conditions. Refer to Standard Response 7, Aquatic Resources, regarding the impact analysis and Sacramento River seasonal operations, spring pulse flows, and coldwater pool management. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, for information about spring-run Chinook salmon, fall-run Chinook salmon, green sturgeon, and white sturgeon, among other aquatic species. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. Refer to Standard Response 6, Hydrologic Modeling and Surface Water Resources, regarding modeling assumptions and analyses of drought. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives.
29-27	III. Review of Alternatives Alternative 2/2b (as described in	Alternative 2 (Multi-Agency Consensus) represents actions and

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	Appendix E.5) Preferred Alternative Alternative 2 (Multi-Agency Discussion) represents actions and tradeoffs made to reach consensus among Reclamation DWR USFWS CDFW and NMFS. Alternative 2 includes CDFW for harmonizing the state's regulatory approach for the operation of the SWP under CESA with the federal regulatory approach for the CVP and SWP under ESA. It includes actions and approaches identified by the state and federal fish agencies in addition to the objectives of Reclamation and DWR regarding operation of CVP and SWP. The multi-agency discussion resulted in revised descriptions of actions considered to be common to all alternatives including the No Action Alternative. Alternative 2b is derived from Alternative 2 but includes recent components developed by CDFW and DWR as part of the Incidental Take Permit application process for the SWP. We generally concur with the actions/prescriptions presented in Alternative 2/2b for streamflows in Section E.5 of the DEIS. Areas or prescription where we differ are covered in our specific recommendations. The following are summaries of differences. 1. E.5.1.2 Coordination Forums While we understand the value of such forums in coordinating effective operations we believe in strict prescriptions objectives or standards to ensure protection of the public trust resources. For example: In order to minimize the risk of juvenile stranding and redd dewatering during the fall season to the extent possible given Reclamation's other legal and contractual obligations Reclamation will coordinate with the SRG to consider planned summer flows that are smoothed out to minimize the net difference between the flow at spawning versus emergence. (pE-70). Comment: this statement is too vague in prescribing a remedy for an important risk factor for endangered winter run salmon. 2. E.5.1.4 Minimum Instream Flow - If these flows are determined	tradeoffs made to reach consensus among Reclamation, DWR, USFWS, CDFW, and NMFS. At this time, Reclamation believes that Alternative 2 meets the screening criteria, including the purpose and need. If Reclamation determines that modifications are needed to the alternative selected in the ROD, Reclamation will then determine whether additional environmental compliance is needed. Refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook for the formulation of alternatives.

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	to meet the same biological intent Reclamation may temporarily reduce flows below 3250 cfs to preserve storage. (pE-70) Comment: we do not concur with such Reclamation management authority. 3. E.5.1.5 Sacramento River Pulse Flows To increase outmigration survival of Chinook salmon Reclamation would release up to 150 TAF in pulse flow(s) each water year typically in the spring to benefit Chinook salmon in the Sacramento River watershed when the pulse does not interfere with the ability to meet temperature objectives or other anticipated operations of the reservoir. Reclamation will schedule this pulse after coordination through the SRG and SHOT and may include coordinating timing with natural flow events potential storage management operations and/or pulse flows in tributaries. (pE-70). See above comments. 4. E.5.1.7 Adult Migration and Holding Temperature Objectives It is possible that high air temperatures and/or an intentional warmwater power bypass could cause warmer temperatures than normal and may require additional protective measures. Under a circumstance where these conditions may cause water temperatures to rise to concerning levels prior to the final temperature management plan Reclamation will begin temperature management as early as March 1 to target water temperatures of 58.0 degrees F daily average at the Sacramento River above the Clear Creek Gage (CCR). Comment: CCR gage should have year-round maximum 53 degrees F requirement (Figure 60) because there is year-round salmon spawning except in coldest winter months. [See original attachment for Figure 60. Water temperature in the Sacramento River at CCR gage 2019-2024 at the lower end of the primary spawning reach for salmon above the mouth of Clear Creek near Redding. Also shown is average by date from 1996-2005.] 5. E.5.4.2 Drought Operations Priority Framework Under certain	

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	conditions such as prolonged drought or unexpected hydrologic conditions the February 90% forecast may indicate that EOS is projected to be less than 2.0 MAF. Under these conditions Reclamation will develop a drought emergency plan. (pE91). Comment: Reclamation's strategy of drought year planning needs improvement as seen in Figure 2 where EOS levels of 2.5 maf led to problems in drought years after drier years (2021 2014 and 2015) which required very strict requirements the next year (2022). Mandating a higher minimum EOS after a dry year as we suggest (Figure 34) would be reasonable. 6. E.5.7 Delta and Old and Middle River Flow Management (Entrainment)Recommendations 7-10 would provide better protection than these prescriptions. If not then the two Sacramento River diversions (DCC and GS) should be screened. Under no condition should prescriptions to reduce salvage/entrainment be based on catch in sampling gear or export salvage facilities. 7. Suisun Marsh Salinity Control Gates The gates should remain open year-round except in low-flow dry years when gates may be used to maintain the low salinity zone (LSZ) in Montezuma Slough as necessary. 8. Barker Slough Pumping Plant The plant should only divert Barker Slough water if Cache Slough outlet flows (as measured upstream of the mouth of Miners Slough) to the Sacramento River remain positive. 9. E.6.4 Delta Inflows and Outflows Delta inflows and outflows would be controlled by constraints in our recommendations (specifically numbers 5-16). Higher flows would be provided naturally from unimpaired flows from the watershed under our recommended constraints on exports and other project operations. The resultant flows specified in Table E-23 (pE-166) would be significantly lower than the minimums required in our recommended operation restrictions that would be provided by	

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	more conservative operations of project storage and contract deliveries. (pE-167): To meet the Delta outflow in Table E-23 consistent with annual modeling demonstrating that storage requirements are reasonably likely to be achieved for the months of December through May Reclamation and DWR shall bypass 55% of unimpaired inflow to Shasta Folsom and Oroville reservoirs and 40% of unimpaired inflow to New Melones Reservoir. If the storage requirements and monthly Delta Outflow criteria in Table E-23 are met then releases from Shasta Folsom and Oroville reservoirs that month may be reduced to 45% of unimpaired inflows from December through May. Reclamation and DWR may release stored water to meet Delta outflow criteria in May through November. Comment: Our recommended minimum storage, storage release, streamflow, and water temperature criteria would significantly alter interannual and annual storage and storage release and long-term patterns of annual and monthly unimpaired bypass percentages of system inflows to project reservoirs. Total outflow to the Bay would be higher and project yield in terms of exports and contract deliveries would be lower.	
29-28	Need for a Climate Change Alternative We recommend developing a climate change alternative that provides recognition of increased air temperatures in the past decade over the prior decade (see two figures below). Future air temperatures and water supply are expected to be further problematic at a level similar to changes between the past two decades. Heat waves are expected to be more frequent and warmer. [See original attachment for Figure Daily average air temperatures at Redding Airport in summer of 2009-2013.] [See original attachment for Figure Daily average air temperatures at Redding Airport in summer of 2019-2023.]	Need for a Climate Change Alternative We recommend developing a climate change alternative that provides recognition of increased air temperatures in the past decade over the prior decade (see two figures below). Future air temperatures and water supply are expected to be further problematic at a level similar to changes between the past two decades. Heat waves are expected to be more frequent and warmer.[See original attachment for Figure Daily average air temperatures at Redding Airport in summer of 2009-2013.][See original attachment for Figure Daily average air temperatures at Redding Airport in summer of 2019-2023.]
29-29	IV. Appendices Review of Draft LTO DEIS	The EIS provides a summary of the current state of the Southern

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	Appendix O Fish and Aquatic Resources Trinity River Coho salmon were not likely the dominant species of salmon in the Trinity River before dam construction Today wild coho salmon are not abundant in the Trinity River and most of the coho salmon that return to the river are of hatchery origin. NMFS (2014b) considers this proportion of hatchery fish in the population a high-level risk factor for the continued existence of coho salmon in the Trinity River basin. pO-11. Comment: But coho were certainly in much higher abundance than they are today a result of a project impact due in part to CVP operations of the Shasta/Trinity division. The trans-basin diversion of Trinity water via project infrastructure to the Sacramento River remains a constraint on the wild coho of the Klamath/Trinity watershed. Because the CVP has failed to meet its obligation goals for coho the Klamath/Trinity coho recovery program should be expanded to make real progress toward the recovery goals.	Oregon/Northern California Coast Evolutionarily Significant Unit of coho salmon. Refer to Chapter 12, Fish and Aquatic Resources, Section Coho Salmon, Southern Oregon/Northern California Coast Evolutionarily Significant Unit. Coho salmon are an important ecological and cultural resource of the Trinity River but are not believed to have existed in large numbers in the Trinity basin. The TRRP's restoration target for coho salmon, which was adopted unanimously by the eight-agency and Tribe partnership, is 1,400 natural origin fish, which is based upon an escapement estimate developed in the late 1970s by the California Department of Fish and Game. The recently completed synthesis report (Gough et al. 2024) found that the TRRP's coho escapement goal has been met in 7 of 22 years from 1997-2018. That said, it only met the SONCC Coho recovery goal for the Upper Trinity River population in one year (2004). The TRRP's suite of restoration tools are applied in ways that directly consider benefits and impacts to Coho salmon. • Off-channel habitat construction along the mainstem Trinity River in the 40-mile restoration reach is particularly beneficial for juvenile coho, who preferentially use slow to zero velocity habitats for foraging. New temperature objectives • The TRRP's adoption of a temperature target at the Lewiston gage, while characterized as a component of temperature management for Chinook salmon, was developed in large part in response to late-fall mortality of Coho eggs and fry at Trinity River Hatchery (and presumably in the river downstream) following an unprecedentedly warm temperature release in 2021 during unprecedented drought. • Over the last 10 years, the TRRP's tributary restoration efforts have specifically targeted streams with existing or potential Coho populations, and has prioritized fish passage remediation,

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		habitat improvement, and increased low season flows specifically for Coho salmon and steelhead. • The Trinity River Hatchery and Yurok Tribal Fisheries Department, with support and funding from Reclamation, installed the first in a series of planned Remote Stream Incubators in the winter of 2023-2024 with the intent of reintroducing Coho salmon into suitable but unoccupied or transiently occupied tributaries throughout the basin.
29-30	Williams et al. (2011) concluded that although abundance was low compared with historical abundance the spring-run Chinook salmon population (which includes hatchery fish) appears to have been variable but stable from 1980 to 2021. It should be noted however that there has been a marked decline in run size estimates in recent years. p0-13. Comment: "Recent years" probably refers to the 2020-2022 drought and stresses on the adult spring-run spawning runs up the Trinity in those years. Such stresses would include warm summer holding conditions (>60 degrees F) in the upper river prior to early fall spawning a consequence of low Trinity reservoir summer releases to the lower Trinity River and depletion of Shasta and Trinity storage in all three years to EOS 1.0-1.5 maf (see Figure 2) [Footnote 4: In August 2022 water temperatures at Douglas City reached a daily average 65F because Lewiston Dam releases reached 58F instead of the normal cold-water-pool release of 51-53F as the cold-water pool supply fell too low]. The low Trinity Reservoir storage was a result of high summer water transfers to the Sacramento River (nearly 100 taf per month [Footnote 5: https://www.usbr.gov/mp/cvo/temperature.html]) during those three years such transfers eventually had to be curtailed in late summer of 2022 when the water had to be released to the Trinity River to save its salmon (Figure 61). In the upper 50 miles of river below Lewiston Dam water temperatures above the	Reclamation appreciates this comment and the information provided. Reclamation is aware of recent Trinity River Division storage, release, and water temperature information (e.g., Buxton, T.H. 2023. Trinity River water allocation, temperatures, and model results for implemented flows and proposed hydrographs for water year 2022. Technical Report TRRP-2023-1. Bureau of Reclamation, Trinity River Restoration Program, Weaverville, CA.); however, this information is not used to assess impacts. The EIS uses modeling to assess future impacts of the EIS alternatives relative to the No Action Alternative on fisheries resources including water temperature impacts on spring-run Chinook salmon. Refer to Appendix O, Sections O.3.19, O.4.1.3, O.4.26, O.5.25, O.6.26, O.7.1.3, and O.7.26 for detailed analysis across alternatives and Chapter 12, Effects of the Alternatives, Trinity River, Spring-run Chinook salmon for the summarized analysis. Figure O-10 shows that modeled average monthly temperatures in the Trinity River below Lewiston Dam under the No Action Alternative and all Action Alternatives would be below 53°F. Please refer to Standard Response 8, Trinity River Division, for information on the steps of future proposed modifications to the 2000 Trinity ROD flows, including separate Section 7 consultation. Buxton, T.H. 2023. Trinity River Water Allocation, Temperatures, and Model Results for Implemented Flows and Proposed

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	entrance to the North Fork near Helena (Figure 62) reached the mid 70's in summer 2022 before emergency releases to the Trinity below Lewiston Dam. Mid-reach water temperatures reached the mid 60's at Douglas City (Figure 63). The high water temperatures were caused by low Lewiston Dam releases (Figure 64) and low Trinity Lake cold-water-pool supply (Figure 65). Water temperatures in September and October in excess of 53 degrees F likely contribute to poor reproductive success of spring run salmon. Note that the old standard of 56 degrees F is still used on the Trinity while the new standard of 53.5 degrees F is used on the Sacramento River.	Hydrographs for Water Year 2022. Technical Report TRRP-2023-1. Bureau of Reclamation, Trinity River Restoration Program, Weaverville, CA.
29-31	Adult fall-run Chinook salmon typically enter the Trinity River from September through October (Moyle et al. 2015). Two to four weeks after river entry adults have made it to 68 the primary spawning reach which extends from Lewiston Dam downstream to the mouth of the North Fork Trinity River and the Hoopa Valley (Myers et al. 1998). After entering freshwater fall-run Chinook salmon remain in deep pools until the onset of the spawning season which typically ranges from the third week of September through November peaking in October (Chesney and Knechtle 2012). Optimal spawning temperatures for spawning are reported to be less than 55.4 degrees F (Moyle 2002). Spawning activity typically begins just downstream of Lewiston Dam and then extends farther downstream as the spawning season progresses. P0-13. Comment: Like the spring run salmon fall run salmon are also stressed by low flows and high water temperatures of late summer and early fall in the 50-mile spawning reach below Lewiston Dam. Water temperatures in September and October in excess of 53 degrees F likely contributed to poor reproductive success in drought years like 2020-2022. Such stress likely reduces population abundance and numbers of spawning adults over time. [See original attachment	The EIS uses modeling to assess future impacts of the EIS alternatives relative to the No Action Alternative on fisheries resources including water temperature impacts on adult fall-run Chinook salmon. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, Sections O.3.20, O.4.1.3, O.4.27, O.5.27, O.6.27, and O.7.27 for detailed analysis across alternatives and Chapter 12, Fish and Aquatic Resources, Effects of the Alternatives, Trinity River, Fall-run Chinook salmon for the summarized analysis.

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	for Figure 61. Lewiston Dam releases and water temperatures May-Nov 2022.] [See original attachment for Figure 62. Water temperatures June-November 2022 in Trinity River near Helena upstream of entrance of North Fork. Note the water quality standard for the Helena gage is 56 degrees F after October 1.] [See original attachment for Figure 63. Water temperatures June-November 2022 in Trinity River near Douglas City 25 miles downstream of Lewiston. Note the water quality standard for the Trinity River at Douglas City is 60 degrees F after July 1 and 56 degrees F after September 15.] [See original attachment for Figure 64. The effect of Lewiston Dam releases on flow and water temperature in lower spawning reach of salmon 50 miles below Lewiston Dam near Helena CA. Note the water quality standard for the Trinity River upstream of the North Fork at Helena is 56 degrees F after October 1.] [See original attachment for Figure 65. Trinity Lake cold-water-pool supply 2014-2022 and average 2000-2021.]	
29-32	Sacramento River Water Temperature Reclamation operates a TCD on Shasta Dam primarily for the protection of winter-run Chinook salmon during egg incubation in the summer. Under Water Board Order 90-5 Reclamation must meet 56 degrees F at Red Bluff Diversion Dam unless: (1) daily average water temperatures higher than 56 degrees F will be detrimental to the fishery: and (2) factors beyond the reasonable control of Reclamation prevent maintaining 56 degrees F as the Red Bluff Diversion Dam. These factors include conditions where: (1) protection of the fishery can best be achieved by allowing a higher temperature in order to conserve cool water for later release: and (2) allowing a higher water temperature is necessary to implement measures to conserve winter-run Chinook salmon. pO-25. Comment: Water temperatures at Red Bluff rarely meet the 56 degrees F standard	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.1.3, regarding Sacramento River water operations, including flow and water temperature.

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	especially in the spring and summer months when it most applies and is most needed (see Figures 6-8). All the factors controlling water temperatures necessary to support salmon below Shasta Dam are within the control of Reclamation.	
29-33	Winter-run Chinook Salmon Sacramento River DPS Adult winter-run Chinook salmon return to freshwater during winter but delay spawning until spring and summer. Adults enter freshwater in an immature reproductive state similar to springrun Chinook salmon but winter-run Chinook salmon move upstream much more quickly and then hold in the cool waters downstream of Keswick Dam for an extended period before spawning. pO-27. Comment: Reclamation's practice of delaying spawning for one to two months by releasing warm water from Shasta Dam in spring may become a necessity in some drought years but only because they create low end of summer end of year and end of spring storage levels via excessive deliveries in drier years.	Historically, winter-run Chinook salmon were able to spawn in the spring and summer due to their ability to access high elevation spawning habitat fed by snowmelt and cold-water springs. Water temperatures in the upper Sacramento River are currently managed according to State Water Resources Control Board Water Rights Orders 90-05 and 91-01, as well as the current Biological Opinions. The orders provide that Reclamation operate Keswick and Shasta dams and the Spring Creek Power Plant to meet a daily average water temperature of 56°F as far downstream in the Sacramento River to the RBDD as practicable during periods when higher water temperatures would be harmful to winter-run Chinook salmon. The commenter's statement about Reclamations operations pertains to the No Action Alternative. The Draft EIS addresses the existing conditions on the Sacramento River in Section 12.1.2, Sacramento River, with additional detail about existing conditions provided in Appendix O, Section O.1.3, Sacramento River. Water temperature related impacts on winter-run Chinook salmon egg incubation are specifically addressed in Section O.1.3.4, Aquatic Habitat Spawning Habitat, Water Temperatures. Standard Response 3, Baseline and No Action, explains that the no action alternative serves as the baseline against which the proposed action and other alternatives are compared.
29-34	Spring-run Chinook Salmon Central Valley DPS High water temperature during spawning and egg/alevin incubation is potentially a major stressor for spring-run Chinook salmon spawning in the Sacramento River. The river currently serves primarily as a migratory corridor for the adult and juvenile	The No Action Alternative and alternatives include different Shasta and Keswick dams ramping rates. None are quantifiably distinct and through development with CDFW, NMFS, USFWS, DWR, and others, Alternative 2 includes protective, slow ramping rates and smoothing releases for spring-run and other Chinook redd

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	life stages of spring-run Chinook salmon from the river's tributaries. pO-29. Comment: The once-prolific spring run in the upper Sacramento River have likely introgressed with the upper Sacramento River fall run via sharing of spawning season and location as well as hatchery practices. Another factor is the historical practice of allowing high water temperatures (and sudden drops in flow/stage) in the late summer after winter run spawning to conserve cold-water pool for fall season spawning and egg incubation (see Figure 1). Changes in these practices would provide conditions that could support recovery of the upper river spring-run population. Operation of Feather River Fish Hatchery (FRFH) may pose threats to spring-run Chinook salmon stock genetic integrity (National Marine Fisheries Service 1998). pO-29. Comment: The same would apply to the Battle Creek Hatchery program.	maintenance in the fall and winter. Operation of Feather River Hatchery and Coleman National Fish Hatchery are not within the scope of this EIS. Please refer to Standard Response 4, Alternatives Formation, regarding the Purpose and Need of this multipurpose project.
29-35	Green Sturgeon Southern DPS Suitable spawning temperatures and spawning substrate exist for green sturgeon in the Sacramento River upstream and downstream of RBDD (Bureau of Reclamation 2008). Although the upstream extent of historical green sturgeon spawning in the Sacramento River is unknown the observed distributions of sturgeon eggs larvae and juveniles indicate that spawning occurs from Hamilton City to as far upstream as Inks Creek confluence and possibly up to the Cow Creek confluence (Brown 2007; Poytress et al. 2013 2015). There appears to be a positive relationship between annual outflow and abundance in rotary screw traps at RBDD of green sturgeon larvae and juveniles (Heublein et al. 2017). Also there is a positive correlation between mean daily freshwater outflow (April to July) and white sturgeon year class strength (California Department of Fish and Game 1992 and U.S. Fish and Wildlife Service 1995 cited in National Marine Fisheries Service 2018b). pO-33. Comment:	Please see Standard Response 7, Aquatics Resources. The summary of project impacts for the southern DPS of green sturgeon are located in Appendix O, Fish and Aquatic Resources Technical Appendix, Sections O.4.11, O.5.11, O.6.11, and O.7.11 with the Summary of Impacts in Table O-282 on pages O-1610 through O-1612. The summary of project impacts on white sturgeon are located in Appendix O, Sections O.4.15, O.5.15, O.6.15, and O.7.15 with the Summary of Impacts in Table O-282 on pages O-1623 through O-1625. An updated CDFW outflow-year class index analysis was completed in Attachment J.2. This analysis was used as a surrogate for the southern DPS of green sturgeon and shows mixed predictions of year class strength depending on which phase of Alternative 2 is actionable and water year type.

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	Despite life history requirements related to flow and water temperature especially during spring spawning and embryo incubation there is no assessment of project effects on either green or white sturgeon in the DEIS or whether project operations could be changed to improve their populations.	
29-36	Fall-/Late Fall-run Chinook Salmon Central Valley DPS Comment: The fall-run salmon assessment in the DEIS is outdated and does not reflect recent science and agency assessments including strong interest in listing the run. Nor does it present project operation changes that could improve fall-run populations in Central Valley rivers especially the important upper Sacramento River run that supports a high portion of California's salmon fisheries.	Please refer to Standard response 7, Aquatic Resources, section Fall-run Chinook Salmon Impact Analysis and Mitigation. Furthermore, Rice decomposition smoothing involves coordination of diversions to lower peak rice decomposition demand. The measure may impact stranding, redd dewatering, refuge habitat, and outmigration in the fall. The aquatics analysis used expert opinion and multiple quantitative analyses to assess impacts to the ESU. Please see Standard Response 5, Adequacy of the Analysis and Mitigation Measures, regarding the NEPA related requirements. The 2021 EIS Appendix O incorporated several new lines of evidence that were not included in the 2019 EIS. These analyses used hydrological inputs generated by CalSim 3 to assess juvenile through-Delta survival, Redd Dewatering, Juvenile Stranding, and several analyses that asses spawning and rearing habitat changes. The Delta Passage Model (Attachment I.6, Delta Passage Model) simulates migration of fall-run/late fall-run Chinook salmon smolts entering the Delta from the Sacramento River, Mokelumne River, and San Joaquin River and estimates survival to Chipps Island. The Redd Dewatering Analyses assess impacts to Fall-/Late Fall-run Chinook Salmon in the Sacramento and American Rivers (Attachment L.4 Sacramento River Redd Dewatering Analysis, Attachment M.1 American River Redd Dewatering). The Juvenile Stranding Analysis assesses impacts to Fall-/Late Fall-run Chinook Salmon in the Sacramento River (Attachment L.5 Sacramento Juvenile Stranding Analysis). Spawning and rearing habitat

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		analyses assess impacts in the Sacramento River, American River, Stanislaus River, and Clear Creek (Attachment O.3 Sacramento Weighted Usable Area Analysis, Attachment M.3 American River Weighted Usable Area Analysis, Attachment N.2 Stanislaus River Habitat Availability Analysis, Attachment O.1 Clear Creek Weighted Usable Area Analysis, Attachment O.2 CVPIA SIT DSM habitat modeling).
29-37	O.5 Alternative 2 (pO-621) Alternative 2 (Multi-Agency Consensus) represents actions approaches and tradeoffs made to reach consensus among the state and federal fish agencies: Reclamation CDFW DWR NMFS and USFWS. Alternative 2 consists of four "phases" which are all evaluated to present the maximum possible effects (adverse and beneficial) resulting from operations under any singular phase. The four phases of Alternative 2 include a combination of implementation of a Temporary Urgency Change Petition (TUCP) and adoption of the Voluntary Agreements (VA) and are as follows: Alternative 2 Without TUCP Delta VA Alternative 2 Without TUCP Without VA Alternative 2 Without TUCP Systemwide VA Alternative 2 With TUCP Without VA Comment: The first problem with Alt 2 is that does not directly address (fix) problems with the No Action Alternative and how Alt 2 would fix the problems. Alt 2 should be the resource agencies way to protect the public trust fisheries resources under improvement to the long-term operations of the state and federal water projects above the no-action alternative. If that is not possible then any continuing adverse effects of the projects under Alt 2/2b should be clearly identified in the EIR/EIS. If further adverse effects are expected to any future reasonably expected changes then those should be identified in the Cumulative Effects Assessment. Furthermore if TUCPs are included in the No-Action Alternative or Alternative 2 then their	Alternative 2 (Multi-Agency Consensus) represents actions and tradeoffs made to reach consensus among Reclamation, DWR, USFWS, CDFW, and NMFS. At this time, Reclamation believes that Alternative 2 meets the screening criteria, including the purpose and need. If Reclamation determines that modifications are needed to the alternative selected in the ROD, Reclamation will then determine whether additional environmental compliance is needed. Reclamation performed a robust effects analysis that included all four phases of Alternative 2 including those with TUCPs. Also, Reclamation clearly identified the process and approach for Voluntary Agreements in Appendix E, Draft Alternatives, Section E.5.7.3. Please refer to Standard Response 10, Voluntary Agreements, for more information on the Voluntary Agreements. Refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook for the formulation of alternatives. Please refer to Standard Response 7, Aquatic Resources, for the adequacy of the aquatics effects analysis.

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	added effects should be addressed. As for Voluntary Agreements they should be identified as being part of the project alternative or not.	
29-38	O.5.1.1 Trinity River Flows below Lewiston Dam Comment: Flows are inadequate.	All of the alternatives in the Draft EIS include continued implementation of the 2000 Trinity ROD. Refer to Standard Response 8, Trinity River Division, regarding the steps for consideration of future proposed modification to the Trinity River Division operations.
29-39	O.5.1.2 Trinity Reservoir Storage Comment: Storage levels EOS are too low.	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Please refer to Standard Response 4, , regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives. Refer to Standard Response 8, Trinity River Division, regarding the consideration of Trinty River operations in the EIS and future environmental review processes anticipated for the Trinity River.
29-40	O.5.2 Sacramento River Under all the action alternatives flows in the upper Sacramento River result from controlled releases from Shasta Reservoir and Keswick Dam as well as transfers from the Trinity River and natural accretions. The releases and transfers are determined by a suite of laws regulations contracts and agreements to address demands of water users requirements for water quality and needs of fish populations throughout the river and the Delta. In particular operations of all the action alternatives are regulated by the Water Board's D-1641 decision which requires flow	Please refer to Standard Response 2, Related Regulatory Responses, regarding the Bureau of Reclamation's compliance with applicable federal laws and regulations.

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	releases to meet Delta standards and their WRO 90-5 decision which requires coldwater releases to meet water temperature targets at compliance points in the upper Sacramento River. Comment: All releases are under the control of Reclamation therefore they must comply with their permits to operate. In many cases these decades old requirements are inadequate to protect beneficial uses as prescribed in permits. In such cases Reclamation should clearly articulate where target resources in permits are not protected and why something they have neglected to do.	
29-41	Dry hydrologic conditions often lead to inadequate storage in Shasta Reservoir for operators to provide suitable conditions for salmonids and other native species in the upper Sacramento River. In most cases however water temperature rather than flow is the limiting factor creating unsuitable conditions as discussed below. Flow releases are high during the summer to satisfy downstream demands of water users and Delta water quality and to meet water temperature requirements of incubating Winter-run Chinook salmon eggs and alevins downstream of Keswick Dam. pO-632. Comment: The lack of storage sustainability in Shasta and Trinity Reservoirs is a clear example where Reclamation has failed to manage water supplies to protect the target species despite their clear ability (and mandate) to do so. Water temperatures of their dam releases are clearly under their control as they are primarily a function of storage levels in the reservoirs and their ability to release from different temperature strata of their reservoirs. Given the variability in Nature's inputs from year to year Reclamation failure to provide adequate release water temperatures comes directly from allowing excessive risk in the planning process. This suggests the need for a more conservative strategy for storage and releases in this plan for the future. Contrary to their	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for the impacts of the alternatives on fish and aquatic resources and water temperatures. Refer to Standard Response 7, Aquatic Resources, regarding the impact analysis and Sacramento River seasonal operations, spring pulse flows, and coldwater pool management. Refer to Chapter 4, Water Quality, and Appendix G, Water Quality Technical Appendix, regarding water quality conditions in the Bay-Delta. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives. Refer to Standard Response 10, Climate Change regarding how

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	statement in the lower two thirds (200 miles) of the Sacramento River below Shasta Dam flow is the controlling factor in river water temperatures in the warm air of spring through fall. Flow is what needs to be adjusted especially in the many heat waves encountered. Climate change has brought an increase in the frequency and magnitude of heat waves thus requiring further diligence (and more stored water supply) on Reclamation's part to maintain their permit requirements. Reclamation has been too eager to ignore their permit requirements in the face of such challenges although they have supported possible mitigative solutions (e.g. floodplain forest restoration farmland fallowing Site Reservoir and Raising Shasta Dam). Perhaps their plan for the future should be more aggressive towards some of these solutions.	climate change data was included in the modeling assumptions for the Draft EIS.
29-42	After coordination through the Sacramento River Group and Shasta Reservoir Operations Team and through Adaptive Management Reclamation may determine that lower flows achieve the same biological effects as the minimum flow of 3250 cfs at Keswick Dam. If these flows are determined to meet the same biological intent Reclamation may temporarily reduce flows below 3250 cfs to preserve storage while meeting the same intent as the minimum flow of 3250 cfs. pO-632. Comment: This may be possible in winter if stage flow spawning habitat area water temperature and other spawning and rearing habitat characteristics are considered. Spring-run fall-run and late fall run salmon all spawn or egg incubate in winter.	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for the impacts of the alternatives on fish and aquatic resources and water temperatures.
29-43	To increase outmigration survival of Chinook salmon Reclamation would release up to 150 thousand acre feet (TAF) in pulse flow(s) each water year under Alternative 2 typically in the spring to benefit Chinook salmon in the Sacramento River watershed when the pulse does not interfere with the ability to meet water temperature objectives or other anticipated	Reclamation appreciates this comment. Refer to Standard Response 4, Alternatives Formulation, for additional information regarding formulation of alternatives. Alternative 2 (Multi-Agency Consensus) represents actions and tradeoffs made to reach consensus among Reclamation, DWR,

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	operations of the reservoir. pO-632. Comment: Pulse flows are needed and should be required in the late fall winter and spring especially in drier years and should be coordinated with dry year natural flow tributary flow events. Pulse flows should be key elements of temperature-flow management plans that should be developed at EOS storage determination.	USFWS, CDFW, and NMFS. At this time, Reclamation believes that Alternative 2 meets the screening criteria, including the purpose and need. If Reclamation determines that modifications are needed to the alternative selected in the ROD, Reclamation will then determine whether additional environmental compliance is needed.
29-44	Under a circumstance where conditions may cause water temperatures to rise to concerning levels prior to the final Temperature Management Plan Reclamation will begin water temperature management as early as March 1 to target water temperatures of 58.0 degrees F daily average at the Sacramento River above Clear Creek gage (CCR). Another key component of Alternative 2 includes baseflows in the Fall and Winter for Refill of Shasta Reservoir and Redd Maintenance. pO-632. Comment: As stated above planning should commence at the end of summer and be updated as necessary through the fall winter and spring. We recommend maintaining the 53 degrees F standard year-round as salmon spawn above CCR in every month of the year. Note in Figure 1 the 58 degrees F action does not fit the historical perspective and it stresses the entire Sacramento River system especially in the spawning and rearing reach between Shasta Dam and Red Bluff.	Refer to Standard Response 4, Alternatives Formulation, for additional information regarding formulation of alternatives. Alternative 2 (Multi-Agency Consensus) represents actions and tradeoffs made to reach consensus among Reclamation, DWR, USFWS, CDFW, and NMFS. At this time, Reclamation believes that Alternative 2 meets the screening criteria, including the purpose and need. If Reclamation determines that modifications are needed to the alternative selected in the ROD, Reclamation will then determine whether additional environmental compliance is needed.
29-45	O.5.2 Sacramento River Flows Comment: see our recommended flows and water temperatures in Section II.	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for the impacts of the alternatives on fish and aquatic resources and water temperatures. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public

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		outreach and multiagency input. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives.
29-46	O.5.3 Bay Delta Comment: see our recommended flows and water temperatures in Section II.	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for the impacts of the alternatives on fish and aquatic resources and water temperatures. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives.
29-47	O.8 O.10 Summary of Impacts and Mitigation - Alternative 2 Comment: The project alternatives including the proposed Alternative 2/2A would not overcome past present and future impacts to salmon steelhead sturgeon and smelt nor reduce the risks of extinction or increase numbers to allow historical levels of fishery harvest. Our proposed changes to operations and standards presented in Section II would reduce these risks if implemented now and in the future. Our recommendations would significantly increase the chances of recovery if a complete package of habitat improvements conservation hatchery programs and project infrastructure is implemented in a comprehensive adaptive management strategic framework.	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Please refer to Standard Response 4, Alternatives Formulation, regarding the process used to identify, evaluate, refine, and select a reasonable range of feasible action alternatives to be evaluated in the Draft EIS and the level of detail provided in the descriptions of each alternative. Please refer to Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.8, Summary of Impacts, and Table O.9-1 for a summary of impacts. Avoidance and minimization measures and potential mitigation measures can be found in more detail in Section O.9, Mitigation Measures, and Appendix D, Mitigation Measures.

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		The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives.
29-48	O.8 Summary of Impacts Table O-282 Spawning and Egg/Alevin Incubation: Possible adverse to beneficial impacts from flow on spawning and redd dewatering habitat possible adverse and beneficial impacts on spawner abundance. Possible beneficial impacts from water temperatures from TDM beneficial impacts on spawning and egg/alevin incubation negligible adverse impacts specific to egg incubation and fry emergence. Comment: Alt 2/2b would not alleviate existing adverse effects.	Alternative 2 and the other alternatives would provide improvement in certain parameters when compared to the No Action Alternative. The alternatives would also have some adverse effects. With a project of this magnitude, tradeoffs are expected. Please refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources, section titled Sacramento River Winter-run Chinook Salmon ESU, regarding a description of the methods, impact thresholds, criteria, data, and variables considered in the analysis of potential effects on Sacramento River Winter-run Chinook Salmon ESU. Please also refer to Standard Response 7, Aquatic Resources, regarding concerns about adverse project impacts on salmonids and other fishes. The EIS has been prepared in compliance with NEPA and evaluates potential impacts that may result from the alternatives. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.
29-49	Juvenile Rearing and Emigration: Potential adverse to beneficial impacts from flow on fry and juvenile rearing habitat beneficial impacts on fry stranding adverse impacts on juvenile production index beneficial impacts on survival and travel time except Alternative 2 without TUCP Delta VA. Potential adverse to beneficial impacts on fry survival. Alternative 2 with TUCP without VA which could have beneficial impacts in critically dry	Alternative 2 and the other alternatives would provide improvement in certain parameters when compared to the No Action Alternative. The alternatives would also have some adverse effects. With a project of this magnitude, tradeoffs are expected. Please refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources, section titled Sacramento River Winter-run Chinook Salmon ESU, regarding a description of

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	year. Potential adverse impacts from water temperatures on juvenile rearing and emigration under three phases of Alternative 2 negligible adverse impacts under Alternative 2 with TUCP without VA. Comment: Alt 2/2b would not alleviate existing adverse effects.	the methods, impact thresholds, criteria, data, and variables considered in the analysis of potential effects on Sacramento River Winter-run Chinook Salmon ESU. Please also refer to Standard Response 7, Aquatic Resources, regarding concerns about adverse project impacts on salmonids and other fishes. The EIS has been prepared in compliance with NEPA and evaluates potential impacts that may result from the alternatives. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.
29-50	Adult Migration and Holding: Potential adverse to beneficial impacts from flow generally beneficial impacts early in the season (December: January) and adverse impacts later in the season (May and June) flows high enough to allow upstream passage. Negligible adverse impacts from water temperatures on upstream migrating and holding adults. Comment: Alt 2/2b would not alleviate existing adverse effects.	Alternative 2 and the other alternatives would provide improvement in certain parameters when compared to the No Action Alternative. The alternatives would also have some adverse effects. With a project of this magnitude, tradeoffs are expected. Please refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources, section titled Sacramento River Winter-run Chinook Salmon ESU, regarding a description of the methods, impact thresholds, criteria, data, and variables considered in the analysis of potential effects on Sacramento River Winter-run Chinook Salmon ESU. Please also refer to Standard Response 7, Aquatic Resources, regarding concerns about adverse project impacts on salmonids and other fishes. The EIS has been prepared in compliance with NEPA and evaluates potential impacts that may result from the alternatives. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.
29-51	O.9 Avoidance and Minimization Measures Table 0-284 Minimum Instream Flows Certain hydrologic circumstances may cause short-term periods	Thank you for the correction, the EIS text will be modified to reflect comment.

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	of high flows. Minimum instream flows are temporary reductions in reservoir releases to preserve water storage. Comment: No! Minimum instream flows are the lowest level allowed they are prescribed to protect beneficial uses not conserve storage. Often higher storage releases are required to maintain minimum downstream flows.	
29-52	Minimum instream flows store water in reservoirs and decrease flows resulting in increased and decreased water temperatures and dissolved oxygen levels decreased and increased refuge habitat and spawning habitat dependent on geography muted outmigration cues as a consequence of flattening the hydrograph increased stranding and dewatering of eggs decrease stranding and juvenile dewatering and decreased food availability for smelt and the size of the Low Salinity Zone as a consequence of decreasing Delta inflow. Comment: Poorly stated misleading and incorrect definition see above comment.	Thank you for the correction, the EIS text will be modified to reflect comment.
29-53	Appendix AB-L Shasta Coldwater Pool Management This appendix analyzes alternatives for the management of Shasta Reservoir for water temperatures downstream of Keswick Dam. (pl-1). Comment: There is only one prescription for water temperatures below Keswick 53.5 degrees F maximum daily average temperature as measured at the CCR gage (above the mouth of Clear Creek just downstream from Redding). This water temperature objective is based on comprehensive scientific studies of the needs of spawning salmon and monitoring of decades of salmon spawning in the upper Sacramento River. This is the present management objective to protect spawning salmon their eggs and alevin in spawning gravel in the primary spawning reach. Each DEIS alternative has been modeled to determine its ability to meet that objective. This objective essentially is the same as providing 56 degrees F average daily water temperature at Bend Bridge near Red Bluff. It does not	Refer to Standard Response 4, Alternatives Formulation, for additional information regarding formulation of alternatives and the range of alternatives. None of the alternative's' Shasta Coldwater Pool Management actions for early life stage winter-run Chinook salmon are identical and representative of a common component. Each was developed independently. The proposed new strategy does not relax the existing standard or permit requirements, but adapts with new science to further improve cold water pool management and other strategies affecting early life stage survival. Alternative 1 CWP management makes releases and operates the TCD to the 90-5 logic, targeting 56F at the most downstream feasible location from May 15 through October 30 each year.

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	meet prior water quality objectives and requirements in other project permits of 56 degrees F downstream to Red Bluff or Hamilton City. Therefore the proposed new objective represents a slight relaxation of the existing standards and permit requirements. At least one alternative should provide the necessary operation and structural requirements to meet the objective.	Alternative 2 CWP management makes releases and operates the TCD to target 53.5F at various locations of varying durations downstream of CCR depending on predicted EOS storage. Alternative 3 CWP management makes releases and operates the TCD to target 53.5F or 54.5F at CCR depending on water year type, along with a 7-day daily maximum target at Jelly's Ferry from March 1 through May 15. Alternative 4 CWP management makes releases and operates the TCD to target temperatures ranging from 56F to 53.5F during the temperature management season at CCR based on the EOS cold-water storage.
29-54	How do water releases prior to the temperature management season influence the coldwater pool volume and temperature management capability during the temperature management season? (pL-3). Comment: Saving Shasta storage (e.g. reducing downstream demands providing higher EOS storage in prior water year meeting more demands with Trinity water) is possible upon analyzing tradeoffs and expected end of April storage after flood control management. Tradeoffs include insuring adequate fall-winter flows and water temperature for fall and winter spawning rearing and migrating salmon. A basic package of minimum salmon protection should be developed as a baseline for the October-April nontemperature-management period that would depend on EOS conditions and precipitation and storage through the period. There should be strong prescriptions on water supply deliveries especially on April ag deliveries under drier conditions to maximize End-of-April storage.	Reclamation has developed, with input from fisheries agencies, NGOs, and the public, the alternatives that balance the need for special-status fish species protection and water supply reliability and take into consideration seasonal CVP operations, water year types and multiple beneficial uses of stored CVP water. Several alternative components are generally consistent with the approach described in this comment. Please refer to Standard Response 4, Alternatives Formulation, for the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives.
29-55	How do different carryover storage targets influence the cold-water pool volume in subsequent years and corresponding temperature management capability? (pL-4). Comment:	The Draft EIS includes an adequate range of alternatives under NEPA, developed with input from comments received during the scoping process, intense public outreach, and multiagency input

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	Carryover storage targets have the potential of greatly influencing water supply deliveries and the risk of running out of cold-water-pool supply. We have proposed a carryover storage regime that balances risks while providing considerable protection to salmon based on prior experience (see Section II). We suggest that such a carryover storage regime be included in a DEIS alternative.	and collaboration. Please refer to Standard Response 4, Alternatives Formulation, for additional information regarding the rigorous approach Reclamation undertook in the formulation of alternatives and the range of alternatives.
29-56	Temperature management capability is strongly correlated with end-of-April fill and the contributing spring hydrology and meteorology throughout the season. Comment: EOS storage Oct-Apr releases and inputs make up EOApril storage to start the season. EOS Storage and releases are the only controls Reclamation has on EOA storage.	Comment provides background information on operations of the system.
29-57	Carryover storage can affect end-of-April storage if the subsequent winter and spring are very dry. Comment: Note 2016 2018 and 2020 were below-normal water years with depressed EOA storage (see Figure 2). The latter two years were after wet years.	Comment provides background information on the historical record.
29-58	Higher levels of carryover can result in significant spill in the following winter and spring possibly representing foregone deliveries in the previous year and increasing flood damage risk. Comment: Likewise lower levels of carryover can put the water supply and salmon at risk the following year. We have proposed EOS storage levels that minimize the risk to salmon from low EOA storage. Yes the higher EOS storage requirements may result in some added spill in winter but not more than occurs in most water years.	Comment provides background information on operations of the system.
29-59	In critically dry years project allocations are minimal and operations focus is on meeting environmental criteria and delivering water supply as possible to senior water users. A carryover target under such conditions may be hydrologically	Comment provides background information on operations of the system.

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	and operationally impossible to meet. Comment: Many of the critically dry years are handicapped by low EOS storage from the previous years. For example water year 2022 was severely handicapped by water year 2021 resulting in severe restrictions in 2022. The less-conservative release of water in 2021 a million acre-ft greater than 2022 was the problem (see Figure 2).	
29-60	What is the ability of other CVP and SWP operations to support cold water in Shasta reservoir? (pL-4). Comment: We have identified a number of options: out of basin transfers (Trinity water) out of basin water temperature control (Spring Creek power house from Lewiston Reservoir) hydropower operations in Shasta-Trinity Division water deliveries to contractors coordination with Oroville and Folsom releases San Joaquin reservoir system groundwater use and Delta exports. CVP's facilities are operated collectively balancing local obligations with overall system needs and taking advantage of opportunities for flexibility. Margins for exploring tradeoffs between Folsom and Shasta and between Trinity and Shasta are limited in years where water supply conditions present operational challenges. Comment: SWP should also be included.	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Please refer to Standard Response 8, Trinity River Division, regarding the consideration of Trinty River operations in the EIS and future environmental review processes anticipated for the Trinity River. Refer to Standard Response 1, Responses to General Comments, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. The reasonable range of alternatives in the Draft EIS is adequate and was developed from input during scoping, intense public outreach and multiagency input. Refer to Standard Response 4, Alternatives Formulation, on the rigorous approach Reclamation undertook to formulate the reasonable range of alternatives. Operations of Oroville Dam are outside the scope of the EIS and are not addressed as part of the study area. Please refer to Chapter 2, Purpose and Need, regarding the study area location and description.
29-61	Restricting early season releases at Keswick to improve Shasta fill potential shifts the burden of CVP release to Folsom. This can render the role of the December planning minimum for Folsom	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are

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	storage ineffective. Comment: Restricting releases in winterspring at Keswick also effects salmon steelhead sturgeon and smelt in drier year types.	evaluated and discussed in Chapters 4–22 of the EIS. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, for analysis of the alternatives and impacts on flows and temperatures.
29-62	Tradeoffs with SWP operations have not been evaluated in these studies. Comment: Oroville-Banks SWP operations play a significant part in Sacramento River and Bay-Delta operations.	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, for analysis of the alternatives and impacts on flows and temperatures. Operations of Oroville Dam are outside the scope of the EIS and are not addressed as part of the study area. Please refer to Chapter 2, Purpose and Need, regarding the study area location and description.
29-63	What flows are most sensitive to redd dewatering? pL-5. Comment: Streamflow drops of 1-2 ft are highly detrimental to salmon redds. Most redds are made in 2 feet of water. Significant reductions or increases can lead to dewatering (less flow means less oxygen) and scour.	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS.. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, for analysis of the alternatives and impacts on flows and temperatures.
29-64	80% of winter-run Chinook salmon spawn in locations that are inundated when flows are about 6200 cfs. Comment: Winter run Chinook spawn from May to August (peak in June and July) where water velocity depth substrate turbidity and water temperature are in their optimal range. The amount and quality of spawning habitat varies with operation. No case has been made by Reclamation that they are providing adequate spawning habitat at the right time and location.	Reclamation's habitat programs will continue through separate environmental compliance and future restoration plans as independent programs Refer to Appendix Y, Cumulative Impacts, for additional evaluation of habitat restoration programs.

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29-65	Historical dewatering of total winter-run Chinook salmon redds (2013 through 2021) has ranged from 0% (in 2015 2016 2017) to 0.67% (in 2020) averaging 0.13%. Chinook spawn primarily in 1-3 ft of water. Dewatering effects may occur with the sudden drop of 1-2 ft of water depth. The frequency of such drops during the spawning and incubation season in the 10-mile upper river spawning reach below Keswick Dam is much higher than described in DEIS.	Historical estimates of winter-run Chinook salmon redd dewatering were based on reports by PSMFC and CDFW during monitoring studies in 2013-2022. Please see Section L.5.4.14 in Appendix AB-L Shasta Coldwater Pool Management for a summary of these annual reports.
29-66	L.5.3.5 Hydrodynamic and Temperature: Further updates were performed under the Long-Term Operation EIS modeling that included improved meteorological data and subsequent validation of the Sacramento and American River models implementation of the Folsom Temperature Control Devices and low-level outlet implementation of the Trinity auxiliary outlet improved temperature targeting for Shasta and Folsom Dams. (pL-31). Comment: These are important factors in the effects on Shasta storage but feature vague and uncertain tools in the conservation of Shasta storage. In some cases the tools are as yet unavailable at least in working condition. Furthermore guarantees that such tools would be effectively applied are not provided.	40 C.F.R. §1502.23 provides guidance about information to be used in an EIS. It states, "Agencies shall make use of reliable existing data and resources. Agencies may make use of any reliable data sources, such as remotely gathered information or statistical models. They shall identify any methodologies used and shall make explicit reference to the scientific and other sources relied upon for conclusions in the statement." Please see Appendix F, Modeling - Part 1, section titled Temperature Model Updates, regarding a description of changes within the 2021 LTO to the temperature modeling workflow. The comment pertains to HEC-5Q, which is a temperature model and is not used for the purposes of evaluating changes in storage. CalSim 3 was used to model storage and elevation, which is discussed in Appendix F, Modeling - Attachment 2-1. Please also refer to Standard Response 6, Hydrologic Modeling and Surface Water Resources, regarding the use of specific models. The analysis contained in the EIS has been conducted in compliance with NEPA.
29-67	L.5.4.1 Storage and Coldwater Pool Criteria: From the full list of quantitative models outlined above (5.3 Models) and the literature a subset of tools was selected to evaluate the environmental impacts of the CVP and SWP operations on listed fishes. (pL-31). Comment: the origins of these criteria are vague.	Refer to Standard Response 4, Alternatives Formulation, for additional information regarding the rigorous approach Reclamation undertook in the formulation of alternatives and the range of alternatives.

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	A reasonable range should be considered in the alternatives. Our recommended criteria are described in Section II.	
29-68	L.5.4.2 Warmwater Bypass: Warm water bypasses may occur in the spring to preserve coldwater pool for later use in the summer for fisheries benefits. (pL-31). Warmwater bypasses were more common prior to the TCD installation however since the TCD was installed these types of bypasses have been used infrequently. Comment: The effects of spring warmwater bypass are shown in Figures 1 and 5 (and figure below). There is no mention of the effects of the warm water on the ecosystem (winter and spring run salmon adults holding for later spawning green sturgeon spawning and larvae/fry survival both impacts are substantial and part of the numerous reasons the water quality standard for Red Bluff is 56 degrees F). Furthermore taking warm water off the surface of the reservoir from upper dam river outlets during hydropeaking accentuates the warming and exposes deeper layers to an unmeasured degree of additional warming and further degradation of the cold-water pool. Despite Reclamation's last statement the warmwater is used and offered as a remedy. A more balanced approach using the TCD (see Figure 4) may prove an improvement over this method that uses the upper dam outlets however that would require further upgrades to the TCD.	A spring warmwater bypass will require evaluation in any potential year to understand whether the subsequent cold water benefits are worth the warm water impacts. This evaluation occurs through the SRTTG. Updates to the TCD would require in-depth evaluation, construction, and time for implementation that would not support operations at this time. The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Potential impacts of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, for analysis of the alternatives and impacts on flows and temperatures. Impacts specific to the spring warmwater bypass will be included in the FEIS.
29-69	L.5.4.3 Coldwater Bypass: Cold water bypasses may occur in the summer and fall to reduce overall temperature of Shasta releases for fisheries benefits. By releasing water from the river outlet gate at elevation 750' rather than the TCD side gate which pulls from elevation 720' it may offset warm water entering the TCD. Warmer water may enter the TCD at a lower elevation due to significant leakage unique and uncommon thermodynamics around the device or inaccurate temperature profile. Coldwater bypasses were more common prior to the TCD installation	Because of the design of the TCD, there is some level of leakage. Reclamation regularly uses a remote operated vehicle (ROV) to inspect the TCD and make any necessary repairs. Infrastructure repairs are outside of the scope of this document. Please refer to Chapter 2, Purpose and Need, regarding the purpose and need of this multipurpose project. Refer to Standard Response 4, Alternatives Formulation, for information regarding formulation of alternatives and the

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	however since the TCD was installed a coldwater bypass has only been used once. Comment: Fixing the TCD leakage problem would be a wise upgrade to preserve hydropower production although there may be circumstances where use of the lower river outlets would be more efficient at preserving the cold-water pool supply. [See original attachment for Chart: Red Bluff (rm 240) spring water and early summer temperature in recent drought years a consequence of warm water releases and low flows from Keswick Reservoir (rm 300). The red line represents the water quality standard and the temperature above which salmon and sturgeon eggs and embryos would experience above-normal mortality. Juvenile salmon and sturgeon are present into July and experience increased mortality at temperatures above 60 degrees F.]	inclusion of a reasonable range of alternatives in the Draft EIS. Information provided in this comment is generally consistent with the affected environment presented in Appendix O, Fish and Aquatic Resources Technical Appendix.
29-70	L.5.4.5 Winter-Run Temperature Synthesis: Winter-run temperature needs were previously described in sections 5.1.1 Adult Holding and Spawning Winter-Run Chinook Salmon Water Temperature Needs and 5.1.2 Egg Incubation and Alevin Winter-Run Chinook Salmon Water Temperature Needs. The upper temperature thresholds for the egg and alevin life stages at which higher temperatures are expected to increase mortality varied between 53.6 and 56.5 degrees F (Table L-12). (pL-33). Comment: Note that laboratory studies are generally not as stressful or as representative of real-world conditions in the spawning reach of winter run salmon. Water temperature measured at a gage may not be representative of what is occurring in the sun-exposed riffle or tailout in 1-2 ft depths where salmon are spawning and eggs are incubating. Note also that river stages may be deeper than at tailout locations which are often the shallowest and warmest in a fluvial river. Adjustments in target temperatures at specific gage may be necessary depending on further studies.	Comment L.5.4.5 – Small-scall differences in water temperature related to depth, shade, water movement, and a large number of other factors are included as potential sources of uncertainty in Section L.1.2.1 Assumptions/Uncertainty in Attachment L.1 Sacramento River Water Temperature Analysis. All water temperature index values and ranges used in the analysis were taken from the scientific literature and represent high quality information. Reclamation's analysis includes models of egg to fry survival calibrated to the real-life conditions described here (e.g., sun exposed areas, realistic spawning depths, hyporheic velocities). These models reflect many of the uncertainties described in this comment. Until these uncertainties influence on egg to fry survival is better understood, the lines of evidence reflect the best observations, models and studies to evaluate temperature needs for winter-run Chinook salmon. Comment L.5.4.9 – The comment refers to the background information and literature that informed the water temperature

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	L.5.4.9 Spring Temperature Effects on Spawn Timing: Temperature is an important driver of spawning behavior and timing in salmonids. Delays to migration caused by temperatures from 19-23C can cause delays in spawning events for salmonids (NMFS 2019)…there is evidence that higher April and May water temperatures correspond to increased and delayed peak spawning in July and August. (pL-37) Comment: Unnaturally high spring water temperatures delay migration and spawning which would lead to less energy being available for spawning and embryo development (and loss of essential nutrients such as Thiamine for adults and embryos). The loss of one to two months of the summer growth season of juveniles would lead to higher mortality of fall juvenile emigrants. Maintaining the lower April temperature resulted in a tradeoff of greater difficulty in maintaining the September temperatures. Only because the cold-water pool supply was exhausted by high summer water deliveries to contractors in that and/or prior water years. Regardless any delay in spawning from May-June to July-August should be considered a significant adverse impact on the winter-run population. L.5.4.12 Historical Emergence Timing (Offramp): The offramp of temperature management currently occurs based on either calendar date (October 31) or when real-time monitoring suggests that 95% of eggs have hatched and alevin have emerged depending on which is earlier. (pL-39). Comment: Note that this statement only applies to winter run salmon spring and fall run salmon are at the peak of their spawning at the end of October. In the figure below showing stage and flow below Keswick the offramp occurred in early September. In this very wet year cold water temperatures prevailed and there was no spring winter run spawning delays thus the offramp occurred over a month earlier than in drier years when spawning is delayed in spring. Some redd dewatering of later spawning	assessment from Appendix L of the Biological Assessment. In Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.5.8.1, nine analyses were done to assess impacts on winter-run Chinook salmon spawning and egg incubation and the summary of those results are provided in Table O-282. Comment L.5.4.12 – All water temperature index values and ranges used in the analysis were taken from the scientific literature and represent high quality information. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis. Comment L.5.4.13 – All water temperature index values and ranges used in the analysis were taken from the scientific literature and represent high quality information. Comment L.5.4.13 - Juvenile stranding was assessed for all runs of Chinook salmon in the Sacramento River in the EIS (winter-run, spring-run, fall-run, and late fall-run) and summary of those results under Alternative 2 compared to the No Action Alternative can be found in Section O.5.8.1, O.5.9.1, O.5.10.1, and O.5.14.1. Detailed results, including assumptions and uncertainties are located in Attachment L.5, Sacramento River Juvenile Standing Analysis.

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	winter run likely occurred in September. Spring and fall run salmon peak spawning was likely in October under optimum water temperatures but under stage increases of up to several feet (a likely detriment to the earlier spawned redds). Regardless, the offramp-management regime causes stress in winter spring and fall run salmon in most years. The abrupt stage changes are the result of high summer water deliveries and declining demands in September. A more reasonable gradual change in late summer stage-discharge would better protect the three salmon spawning populations. The "offramp" strategy and high late summer and early fall water temperatures likely was a major factor in the decline in the upper Sacramento River populations of spring-run and fall-run salmon. L.5.4.13 Historical Juvenile Salmonid Stranding: Greater drops in flow are more likely to cause dewatering and juvenile stranding but keeping flows above 3750 cfs can help to avoid substantial juvenile stranding (USFWS 2006) which is generally in agreement with the cumulative proportion of stranding sites from years 2014-2015 and 2019-2020 (Figure L-1). (pL41). Comment: From these surveys it appears that allowing river flows to fall into the 3000-4000 cfs range increases the likelihood of juvenile salmon stranding. Pond/alcove rearing area likely declines at such low flows resulting in the loss of rearing habitat and alcove disconnection. A 4000-5000 cfs minimum flow below Keswick Dam to Red Bluff seems an appropriate prescription to minimize redd and fry stranding and provide some alcove rearing habitat. Earlier studies of salmon production and survival in the upper Sacramento River indicate the amount of fry rearing habitat was an important factor in salmon production (Bartholow 2003). [See original attachment for Chart: Sacramento River flow and stage below Keswick Dam in 2023.]	
29-71	Appendix AB Biological Assessment Chapter 13 Conclusion13.1	Reclamation acknowledges this comment.

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	Sacramento River Winter-run Chinook salmon (p13-1) The Proposed Action may affect and is likely to adversely affect Sacramento River winter-run Chinook salmon. Comment: we agree with this conclusion.	
29-72	Holding and Spawning Adults The Proposed Action is expected to have a beneficial effect on winter-run Chinook salmon adult holding and spawning through a reduction of water temperatures achieved by releasing water from Trinity and Shasta reservoirs and increasing flows below Keswick Dam in compliance with water right terms and conditions. P13-2. Comment: There is no basis for this conclusion. Conditions in Figures 1 and 2 are not likely to change. The only way this conclusion would be valid is to decrease contractor deliveries which is not proposed. Because of the ongoing nature of the Proposed Action the effects of operations for water temperature management under the Proposed Action cannot be separated from the environmental baseline. Therefore Reclamation and DWR are requesting incidental take coverage for water temperature management as a whole without attempting to parse out the specific effects of the Proposed Action. Comment: In other words maintain the environmental baseline. We have proposed specific criteria for water temperature flow and minimum storage levels.	Figures 1 and 2 presented by the commenter are figures of water temperature and storage levels from historical conditions. The figures are not representative of the Biological Assessment modeled water temperatures and storage levels of the Proposed Action. The Proposed Action, which is Alternative 2 in the Draft EIS, was developed with multi agency input to, among other things, specifically address temperature effects on winter-run Chinook salmon. Operations of Shasta Reservoir and water temperature criteria are coordinated with several technical groups that help in the decision-making approaches and protocols. The Sacramento River Group (SRG) is a multiagency and stakeholder group established to provide technical and scientific information regarding temperature management and instream flows. The SRG is composed of representatives from Reclamation, DWR, USFWS, CDFW, NMFS Central Valley Office, NMFS Southwest Fisheries Science Center, the SWRCB Water Board, Western Area Power Administration, the Yurok Tribe, the Hoopa Valley Tribe and the SRS Contractors. Under Alternative 2, the SRG would begin meeting no later than March to develop a Sacramento River temperature management plan and meet at least monthly through the temperature management and the winter-run Chinook salmon redd maintenance season to coordinate during implementation. At the conclusion of the water temperature management season, the SRG will develop a summary report pursuant to seasonal and annual reporting requirements for various actions related to aquatic resources including pulse flows.

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		The portion of the incidental take statement issued by NMFS is expected to include reasonable and prudent measures and terms and conditions to avoid take.
29-73	Eggs and Larvae The Proposed Action is expected to have a beneficial effect on winter-run Chinook salmon eggs and larvae through increasing redd quality. The Proposed Action will increase surface flows that may improve dissolved oxygen levels and reduce sedimentation. The Proposed Action is also expected to have a beneficial effect on winter-run Chinook salmon eggs and larvae through generally decreasing water temperatures. Conversely the Proposed Action is also expected to sporadically increase water temperature as described below. P13-2. Comment: There is no basis for this conclusion. Conditions in Figures 1 and 2 are not likely to change. The only way this conclusion would be valid is to decrease contractor deliveries which is not proposed. Although the Proposed Action generally may result in beneficial effects on winter-run Chinook salmon eggs by aiming to provide suitable water temperatures managing water temperatures as part of the Proposed Action consist of tradeoffs that may result in temperature dependent mortality of incubating eggs by blending water from Shasta Dam with water from Trinity Reservoir. P13-3. Comment: Tradeoffs include transfer of Trinity water hydropower operations and contractor deliveries. Reclamation acknowledges that these project impacts will continue and cause negative effects on winter run salmon. We propose eliminating tradeoffs that result in negative effects. Because of the ongoing nature of the Proposed Action the effects of operations under the Proposed Action cannot be separated from the environmental baseline. Therefore Reclamation and DWR are requesting incidental take coverage	Figures 1 and 2 presented by the commenter are figures of water temperature and storage levels present in historical conditions. The figures are not representative of the Biological Assessment modeled water temperatures and storage levels of the Proposed Action. The Proposed Action, which is Alternative 2 in the Draft EIS, was developed with multi agency input to, among other things, specifically address temperature effects on winter-run Chinook salmon. Please refer to Standard Response 1, Response to General Comments and Comments about Public Outreach, regarding the purpose and need for this multipurpose project, Please see Standard Response 7, Response to General Comments Regarding Adverse Impacts on Aquatic Resources As described in EIS Chapter 3, Draft Alternatives, existing water right decisions and orders, such as Water Board Water Right Decision 1641 (D-1641) and Water Right Order 90-5, contain requirements for fish and wildlife beneficial uses; and these restrictions are incorporated into the operations described in all Alternatives. Since 1993, with the first winter-run Chinook salmon Biological Opinion, Reclamation has had requirements for complying with the federal Endangered Species Act (ESA) in addition to water right requirements for fish and wildlife. Please refer to Standard Response 4, Alternatives Formulation, regarding the National Environmental Policy Act (NEPA) process , water rights, and the relationship to other ongoing plans, programs, or policies, including the State Water Board Bay-Delta Plan

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	for water temperature management as a whole without attempting to parse out the specific effects of the Proposed Action. P13-3. Comment: The Projects are requesting allowing take of the most problematic take occurring from the project impacts the destruction of complete broodyears of winter run salmon in their spawning area in drier years mainly from depletion of storage from excessive water deliveries in multiyear drought sequences (07-09 13-15 and 20-22).	amendments. See Standard Response 2, Related Regulatory Processes, for discussion of the federal ESA permitting process and previous Biological Opinions. Incidental take is take of listed fish or wildlife species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by a Federal agency or applicant (50 CFR § 402.02).
29-74	Rearing and Outmigrating Juveniles The Proposed Action is expected to incidentally take winter-run Chinook salmon rearing and outmigrating juveniles. P13-3. Comment: After decimating winter-run reproduction in the upper river near Redding the projects then decimate the remaining winter-run fry production entering the middle 200 miles of the Sacramento River from low flows in fall and winter. In wet years tributary inputs move the winter run fry effectively through the reach to the Bay-Delta Estuary but in dry years there is insufficient transport and turbidity as well as inadequate rearing and refuge habitat including non-natal tributary rearing habitat. Simple late fall and winter pulse flows could improve fry numbers reaching the Bay-Delta but not are offered or prescribed.	Under Alternative 2, there are several Avoidance and Minimization Measures that seek to help recovery of winter-run Chinook salmon. The Fall and Winter Baseflows for Shasta Reservoir Refill and Redd Maintenance seeks to build and conserve storage in a manner that minimizes winter-run and fall-run Chinook salmon redd dewatering. During the fall, Sacramento River flows will decrease from the high releases in the summer; during the winter (December–February) Reclamation will release baseflows. Each year, the baseflow will be set to balance between the risk of required storage management or flood control releases in the coming fall and winter with supporting refill capabilities for Shasta Reservoir to build coldwater pool for the following year. Additional Avoidance and Minimization measures targeted for winter-run Chinook salmon include Adult Migration and Holding Water Temperature Objectives and Egg Incubation and Emergence Water Temperature Objectives. (For a full list of Avoidance and Minimization measures under Alternative 2, see Appendix D, Mitigation Measures, Table D-5.) Under Alternative 2, in discussion with the agencies, the priorities were storage in Shasta Reservoir for coldwater pool management, so Alternative 2 doesn't include this action.
29-75	Delta Division The Proposed Action may affect the following stressors on juvenile rearing and outmigrating winter-run Chinook salmon in	The comment discusses issues with historical conditions. Please refer to Standard Response 2, Alternatives Formulation, regarding the purpose and need for this multipurpose project. Standard

Ltr#-Cmt#	Comment	Response
	the Delta Division resulting in potential adverse effects. Entraining rearing and outmigrating juveniles in the Sacramento San Joaquin Delta (Delta) fish collection facilities by diversion of flow in the Delta through exports and also by influencing fish to migrate away from the Sacramento River mainstem and be routed into the central and south Delta. Incidental take of winter-run Chinook salmon entrained into the central and south Delta can be quantified by zone of influence (ZOI) and ecological particle tracking model (ECO-PTM) analyses. Incidental take of winter run Chinook salmon entrained in the Delta fish collection facilities can be quantified using salvage density model negative binomial salvage model and the machine learning salvage model. P13-4. Comment: one only must look at the following two figures to assess the threat to migrating juvenile winter run salmon as the enter the Delta in late fall and winter of nearly all water year types. More than half of the water entering the Delta at Freeport is diverted into the Central Delta via the Delta Cross Channel and Georgianna Slough despite the DCC being closed in winter in the last two decades. No amount of modeling can assess the effect on juvenile winter-run (or spring-run or fall-run salmon) no salmon population can be sustained under such an effect unless 20 million hatchery smolts are trucked around the offending project element. [See original attachment for Flow in Sacramento River at Freeport (FPT) and below entrance to Georgianna Slough (GES) 11/1-12/15 2020-2023.] [See original attachment for Flow in Sacramento River at Freeport (FPT) and below entrance to Georgianna Slough (GES) 1/1-3/31 2020-2022.] The Proposed Action is expected to result in incidental take of winter-run Chinook salmon. Winter-run Chinook salmon face a number of stressors in their current environment including habitat loss climate change and extreme vulnerability to catastrophic events. Once the effects of the Proposed Action are isolated from baseline conditions that include ongoing effects	Response 1, Responses to General Comments and Comments about Public Outreach, also provides information about general support and opposition to the project. Hatchery operations and releases are permitted through separate environmental compliance and are outside the scope of this Draft EIS. See Standard Response 2, Related Regulatory Processes, for discussion of the ESA consultation process.

Ltr#-Cmt#	Comment	Response
	from construction of the Central Valley Project (CVP) and State Water Project (SWP) facilities and other non-discretionary activities most effects on winter-run Chinook salmon associated with the Proposed Action in the Sacramento River upstream of the Delta are beneficial. Modeling the Proposed Action's effect on the population growth rate of winter-run Chinook salmon demonstrates that the population can experience positive and negative population growth rates when evaluated based on water year type. Over the twenty-year simulation period winter-run Chinook salmon population growth rate increased in wet and dry water years and decreased in critically dry and above normal years. This suggests hydrologic influences which broadly drive water year type affect winter-run Chinook salmon population growth rates and operations may be able to provide some stability during some water year types. P13-4. Comment: the borderline incomprehensible and ridiculous statements do not reflect the serious level of project impacts that have driven the wild salmon populations in the Central Valley to near extinction and listing as endangered species.	
29-76	Summary The Proposed Action provides cold water for pre-spawning spawning and incubation conditions for winter-run Chinook salmon. The Proposed Action would improve flows and water temperatures for spawning rearing and migration of winter-run Chinook salmon. The Proposed Action would have higher flows during summer when flow is generally low and potentially limiting winter-run Chinook salmon holding and spawning success. Cooler water temperatures may diminish stress on adults taxed from upstream migration and spawning. P13-4. Comment: The proposed action would have none of the above benefits at least in terms of reducing present project effects and conditions to a level deemed overall beneficial to the species.	The Proposed Action, which is Alternative 2 in the Draft EIS, was developed with multi agency input to, among other things, specifically address temperature effects on winter-run Chinook salmon. See Standard Response 2, Related Regulatory Processes, for discussion on the Biological Assessment. Standard Response 1, Response to General Comments and Comments about Public Outreach, provides information about general support and opposition to the project.

Table 4-30. Letter No. 30

Ltr#-Cmt#	Comment	Response
30-1	The Council [Pacific Fishery Management Council] manages U.S. West Coast federal fisheries, including Chinook and coho salmon that originate from the California Central Valley (CV). In addition to developing harvest management regulations, Section 305(b)(3)(B) of the Magnuson-Stevens Fishery Conservation and Management Act states that the Council "shall comment on and make recommendations to the Secretary and Federal or State agency concerning any such activity that, in the view of the Council, is likely to substantially affect the habitat, including essential fish habitat, of an anadromous fishery resource under its authority." The Council has provided written comments several times in the past, including a September 2022 letter [Link: https://www.pcouncil.org/documents/2022/09/september-2022-letter-to-nmfs-bor-and-ca-state-water-resources-control-board.pdf/] on the Central Valley Project. That letter contained specific recommendations to improve water conditions and rebuild a sustainable salmon fishery. The Council is scheduled to meet September 18 -- 23, 2024, which is after the September 9 close of the DEIS comment period. In order to accommodate meaningful and transparent discussion of this important issue among the Council, its Advisory Bodies, and the public, we will provide comments to BOR after the Council meeting has concluded.	Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the public outreach and the comment period.

Table 4-31. Letter No. 31

Ltr#-Cmt#	Comment	Response
31-1	I have witnessed the dramatic decline of salmon populations over the past 50 years. I want to be sure we are doing everything possible to prevent extinction of local salmon and to provide healthy rivers for future generations.	Refer to Standard Response 7, Aquatic Resources, regarding general concern for negative adverse effects on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta), that could potentially result from the project described in the action alternatives. Environmental effects of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Specifically, concerns regarding fish species are addressed in Chapter 12, Fish and Aquatic Resources. Refer to Appendix O, Fish and Aquatic Resources, Section O.8, for a summary of the aquatic resources impacts. Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the purpose and need for and the proposed continued operation of the CVP and SWP.

Table 4-32. Letter No. 32

Ltr#-Cmt#	Comment	Response
32-1	"Only the science-based Alternative 3 supports recovery of these species and the healthy rivers needed to sustain them. Reclamation must revise its operations as indicated in Alternative 3 to require greater flows, stronger temperature requirements, and other actions to save and recover endangered species and the ecosystems they depend on. I urge to take action to use only the science-based Alternative 3 which supports recovery of these species.	Refer to Standard Response 4, Alternatives Formulation, regarding the alternatives analyzed in the EIS. Refer to Appendix O, Fish and Aquatic Resources, Section O.8, for a summary of the aquatic resources impacts. Refer to Standard Response 2, Related Regulatory Processes, regarding Section 7 consultation in accordance with the ESA. Support for Alternative 3 has been noted.

Table 4-33. Letter No. 33

Ltr#-Cmt#	Comment	Response
33-1	This email is concerning water allocation for the California Trinity River > Klamath River > Pacific Ocean. As a local Trinity River constituent, the heath of the river for all that use it is of at most importance. I come from the Sierra, where the waters were poisoned and traveling aquatic animals segregated and hurt. We as a people do not need this again. We as a community are freeing the Klamath, while talking about chaining it at the same time via the Trinity.	This contains introductory information. It is not a comment on the contents of the EIS. Please refer to Standard Response 8, Trinity River Division, regarding the consideration of Trinity River operations in the EIS and future environmental review processes anticipated for the Trinity River.
33-2	If the central valley needs more water and more electricity, let's look at covering the aqueduct with solar panels to reduce evaporation and create energy for the massive pipes used in moving whole watersheds over mountains.	Please refer to Standard Response 4, Alternatives Formulation, describing the alternatives definition process and how the alternatives considered in the EIS meet NEPA requirements. Standard Response 4, Section AD.3.4.2, Development of Alternatives, discusses the screening criteria used to develop alternatives as explored in the 2022 Initial Alternatives Report. Reclamation's use of these screening criteria supports its clear and consistent description of its methodology for selecting which alternatives to analyze in detail.
33-3	As far as this EIS specifically, please consider Alternative 3.	Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding comments that state opinions of general support for the project. Potential environmental effects of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Support for Alternative 3 has been noted.
33-4	Reclamation's own analyses show that the Proposed Action in the Draft Environmental Impact Statement for Long-Term Operations	Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding comments that state opinions of general opposition to the project.

Ltr#-Cmt#	Comment	Response
	of the Central Valley Project and State Water Project will lead to the extinction of endangered salmon, steelhead, and smelt.	Potential environmental effects of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Refer to Chapter 12 and Appendix O, Fish and Aquatic Resources for an analysis on fish mentioned by the commenter.
33-5	Only the science-based Alternative 3 approach supports recovery of these species and the healthy rivers needed to sustain them. Reclamation must revise its operations as indicated in Alternative 3 to require greater flows, stronger temperature requirements, and other actions to save and recover endangered species and the ecosystems they depend on. Please consider Alternative 3.	Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding comments that state opinions of general support for the project. Potential environmental effects of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Support for Alternative 3 has been noted.

Table 4-34. Letter No. 34

Ltr#-Cmt#	Comment	Response
34-1	Only the science-based Alternative 3 supports recovery of these species and the healthy rivers needed to sustain them. Reclamation must revise its operations as indicated in Alternative 3 to require greater flows, stronger temperature requirements, and other actions to save and recover endangered species and the ecosystems they depend on.	Refer to Standard Response 2, Related Regulatory Processes, regarding Section 7 consultation in accordance with the ESA. Refer to Standard Response 4, Alternatives Formulation, regarding the alternatives analyzed in the EIS Support for Alternative 3 is noted.

Table 4-35. Letter No. 35

Ltr#-Cmt#	Comment	Response
35-1	I am a Hoopa Tribal Member who was born and raised on the Trinity River in Hoopa California former Chairwoman of the Hoopa Valley Tribe. This Final hearing on the Water Project should not be on a zoom but should be held public in the area where the water is being taken from the Central Water has taken so much water over the years off the backs of our salmon and tKen gtom an underserved and rural area, the CVP water diversions have made millions, while delivering nothing to our communities. Our river is "Not for Sale" and we don't agree with water grabs during the winter months when the tributaries need to be restored our ocean water ways and fisheries and abalone/shell fish are nearly extinct. Give the people a chance to comment and be present on your proposed plans.	Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding comments that state opinions of general opposition to the project and public outreach, public meetings, and the comment period. Refer also to Standard Response 1 regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP. Refer to Standard Response 7, Aquatic Resources, regarding general concern for negative adverse effects on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta), that could potentially result from the alternatives. Refer to Standard Response 8, Trinity River Division, regarding the consideration of Trinity River operations in this EIS as well as future environmental review processes anticipated specific to Trinity River Operations.

Table 4-37. Letter No. 37

Ltr#-Cmt#	Comment	Response
37-1	To whom it may concern, I feel our water should be filtered and everyone in the community get a free filter water spout. It is very difficult to drink due to chlorine or other chemicals used for it to be clear and clean.	This concern is not within the scope of this EIS. Please refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, for responses to general comments on the EIS.

Table 4-38. Letter No. 38

Ltr#-Cmt#	Comment	Response
38-1	Reclamation's own analyses found that the Proposed Project will lead to the extinction of federally-endangered salmon and smelt.	Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding comments that state opinions of general opposition to the project. Refer to Standard Response 7, Aquatic Resources, regarding the evaluation of endangered fish. The analysis is documented in EIS Chapter 12 and Appendix O, Fish and Aquatic Resources Technical Appendix.
38-2	In contrast, the science-based Alternative 3 supports recovery of these species; no other alternative evaluated will accomplish this. It is imperative that the Bureau of Reclamation revise its operations, consistent with Alternative 3, to require greater flows, stronger temperature requirements, and other actions to save and recover endangered species and the ecosystems they depend on. This will sometimes require a reduction in water diversions by the CVP and SWP, in order to balance water diversions with conserving and restoring endangered species and degraded ecosystems. The source rivers and Delta, after all, are rivers and aquatic ecosystems first, not conveyance utilities for water deliveries.	Please refer to Chapter 5 and Appendix H Water Supply for a description of potential impacts from the alternatives on water supply. Refer to Chapter 12 and Appendix O, Fish and Aquatic Resources, for analysis of alternatives impacts on aquatic resources. Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding comments that state opinions of general support for the project, and the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Refer to Standard Response 4, Alternatives Formulation, regarding the alternatives analyzed in the EIS. Refer to Standard Response 7, Aquatic Resources, regarding general concern for adverse effects on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta), that could potentially result from the alternatives. Support for Alternative 3 is noted.

Table 4-39. Letter No. 39

Ltr#-Cmt#	Comment	Response
39-1	You must give more emphasis to an Alternative that helps preserve and recover salmon runs. Your current proposed action would fail to provide protection for ESA listed fish species. This would result in further harm to already struggling fall run salmon which are critical to both commercial fisheries and Tribal needs.	Please refer to Standard Response 4, Alternatives Formulation, regarding the process for the development of the reasonable range of alternatives analyzed in the EIS. Refer to Standard Response 7, Aquatic Resources, regarding general concern for adverse effects on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta), that could potentially result from the alternatives. Refer to Chapter 12 and *Appendix O Fish and Aquatic Resources,* for an evaluation of the alternatives impacts on aquatic resources.
39-2	Additionally, you should not rely on unspecified and possibly unlikely voluntary agreements to increase flows. Mandating increases in river flows would be a much more reliable way to ensure that the organisms that depend on cool, clean water have their needs met.	Please refer to Standard Response 4, Alternatives Formulation, regarding the process for the development of the reasonable range of alternatives analyzed in the EIS. Refer to Standard Response 10, Voluntary Agreements, regarding general concern about voluntary agreements. In addition to the description below of Alternative 2, the analysis of alternative is further broken down into three additional Phases. These phases are intended to further demonstrate the flexibility and impacts of these components, some of which are outside Reclamation's direct control. Those phases include: *Alt 2 With TUCPs, Without Voluntary Agreements, Early Implementation of Delta Voluntary Agreements*, and Implementation of *All Voluntary Agreements*. It should be noted that the phases of Alternative 2 could be utilized under its implementation. All four phases are considered in the assessment of Alternative 2 to demonstrate the range of potential impacts. For more information describing the difference between the phases see Appendix F.

Ltr#-Cmt#	Comment	Response
39-3	In the DEIS, not enough emphasis is placed on Tribal rights and cultural uses. You must do a better job of acknowledging the Tribal cultural resources that need protection and restoration. This is especially important in light of the injustices of the past that must be addressed.	Please refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding public meetings and the adequacy of public outreach. Refer to Standard Response 2, Related Regulatory Processes, regarding tribal consultation. Refer to EIS Chapter 7, Indian Trust Assets, and Chapter 17, Environmental Justice, regarding tribal interests in environmental resources. 40 C.F.R. §1502.23 provides guidance about information to be used in an EIS. It states that agencies shall make use of reliable existing data and resources. Refer to the EIS Section 23.4, Consultation and Coordination, regarding Reclamation's coordination with interested parties, including tribal consultation. Furthermore, as described in Chapter 17, Environmental Justice, Mitigation Measure EJ-1 would require that Reclamation identify opportunities to gather Tribal Indigenous Knowledge for consideration in future Reclamation projects.
39-4	As the devastating impacts of climate change march on, it is crucial for species like salmon to have cool river temperatures maintained in the future. More instream flow is necessary to safeguard these species' future in a warming climate.	Please refer to Standard Response 4, Alternatives Formulation, regarding the process for the development of the reasonable range of alternatives analyzed in the EIS. The range of alternatives in the EIS explores different degrees in which the alternatives rely on instream flow to meet the purpose and need. Refer to Standard Response 7 regarding general concern for adverse effects on aquatic resources. EIS Chapter 12, Aquatic Resources, Section 12.3 Mitigation Measures, summarizes mitigation measures to reduce the impacts of the alternatives on fish and aquatic resources, including water temperature and storage management, minimum instream flows, etc. All mitigation measures are detailed in Appendix D of the EIS.

Ltr#-Cmt#	Comment	Response
		Refer to Standard Response 9, Climate Change, regarding the consideration of climate change in the analysis provided in the EIS as also described in Chapter 10 and Appendix M, Greenhouse Gas Emissions.
39-5	All of this is especially relevant in the context of the recently completed Klamath River dam removal project. The Trinity River is the largest tributary to the Klamath, so ensuring that the Trinity River has adequate flow is essential to maximizing the benefit of the Klamath River dam removal project.	All of the alternatives explored in the EIS include continued implementation on the 2000 Trinity ROD flows. Please refer to Standard Response 8, Trinity River Division, for a description of potential efforts to evaluate alternatives to the 2000 Trinity ROD flows.

Table 4-40. Letter No. 40

Ltr#-Cmt#	Comment	Response
40-1	Grassland Water District ("GWD") submits these comments on the Bureau of Reclamation's ("Reclamation") Draft Environmental Impact Statement for the Long-Term Operations of the Central Valley Project ("Draft EIS"). GWD is a cooperating agency and appreciates Reclamation's acceptance of feedback from GWD leading up to this Draft EIS. Through this cooperation the Draft EIS was strengthened and clarified. GWD requests that two additional clarifications be incorporated into the Final EIS. First the Draft EIS should be clearer that the Long-Term Operations ("LTO") plan for the Central Valley Project ("CVP") covers all deliveries of water made by Reclamation through its CVP facilities up to full existing contract amounts including the delivery of full Level 4 refuge water under the Central Valley Project Improvement Act ("CVPIA"). The current LTO documents make statements to this effect. [Footnote 1: Reclamation's February 2020 Record of Decision on Reinitiation of Consultation on the Coordinated Long-Term Modified Operations of the Central Valley Project and State Water Project p. 19 (covers water deliveries "under the terms of all existing contracts up to full contract amounts including full Level 4 refuge contract amounts"); Reclamation's December 2019 Final EIS regarding same p. 3-2 ("The action alternatives assess operation of the CVP and SWP to deliver water under the terms of all existing contracts up to full contract amounts including Sacramento River Settlement Contractors and full Level 4 refuge contract amounts.").] The Draft EIS states that Reclamation delivers both Level 2 refuge water from the CVP "plus additional supplies from other sources" (Draft EIS p. 1-2) and it indicates that average annual deliveries to CVPIA wildlife refuges would remain similar under most alternatives (Draft EIS p. 0-9). However it is only in	Reclamation appreciates this comment. The suites of actions to meet full level 4 at this time are not well defined and may require additional NEPA. The proposed action does include refuge contracts, including incremental and full level 4. However, the scope of actions to accomplish full level 4 deliveries is greater than the LTO. These actions would have separate compliance efforts.

Ltr#-Cmt#	Comment	Response
	the appendices where a reference can be found to both the Level 2 and Incremental Level 4 water supplies that make up the full Level 4 refuge contract amounts (Draft EIS Appendix AB-E - Exploratory Modeling p. E-5). Because the Draft EIS makes so many references to Level 2 water it would be helpful to include an express statement that the Draft EIS continues to include full Level 4 refuge contract amounts.	
40-2	Second GWD appreciates the clarification made in the Draft EIS that "minor deviations in CVP Refuge Level 2 deliveries are the result of modeling but do not reflect an intention by Reclamation to deviate from the Central Valley Project Improvement Act" (Draft EIS Appendix H pp. H-20 and H-44). This clarification is included in the technical discussion of Alternatives 1 and 3 but is absent from a similar discussion of Alternative 2. To avoid the potential for confusion GWD requests that the quoted clarification also be included in the discussion of Alternative 2 in Appendix H. Thank you for taking these comments into consideration.	The No Action Alternative and alternatives 1 and 3 are anticipated to support CVP Refuge Level 2 supplies. Under Alternatives 2, Reclamation will coordinate with USFWS to maintain summer deliveries of Level 2 supplies to Sacramento Valley CVPIA refuges to provide essential dry year habitat for Giant Garter Snake, Western Pond Turtle, Tricolored blackbirds, and migratory waterfowl in a manner consistent with refuge contracts and agreed upon operational priorities. If conditions remain dry through the fall Reclamation and USFWS will coordinate on how to address instream flow objectives, lake levels and refuge needs. Reclamation will continue to utilize level 4 to supplement supplies for refuges in drier years when storage and coldwater pool are limited. An assumption of voluntary reductions by refuges during times of extreme drought is supported by historical collaboration on practices during challenging conditions and consistent with the CVPIA.

Table 4-41. Letter No. 41

Ltr#-Cmt#	Comment	Response
41-1	Thank you for the opportunity to comment on the Draft EIS for the Long-Term Operations of the Central Valley (CVP) Project and State Water Project (SWP). The following comments are submitted on behalf of the California Native Plant Society (CNPS) a non profit environmental organization with over 13000 members in 36 Chapters across California and Baja California Mexico. CNPS 's mission is to protect California's native plant heritage and preserve it for future generations through the application of science research education and conservation. We work closely with decision-makers scientists and local planners to advocate for well-informed policies regulations and land management practices.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
41-2	We are concerned that this DEIS did not fully capture the special status plant species with the potential to occur in the study area specifically in associated aquatic margins of CVP reservoirs. We are also concerned that the upstream impacts of operations were not considered in this document. We would recommend that a supplemental or revised DEIR be prepared and circulated to address impacts described below that are not discussed in the current draft.	Potential environmental effects to plant species associated with aquatic margins of CVP reservoirs that could be impacted by operations are evaluated starting on Pg. 39 in Table P.1 2. Special-Status Plant Species. Changes in flows and water surface elevations from the alternatives compared with the No Action Alternative are expected to result in minor to no effects on plants and wildlife along reservoir and river margins. These effects do not differ from the potential changes in terrestrial biological resources under the No Action Alternative at reservoirs that store CVP water, tributaries, and the Delta, which were described and considered in the 2020 Record of Decision. Additional special-status plant species along aquatic margins of CVP Reservoirs have been evaluated and added to Appendix P under Table P.1-2. Potential for effect to Shasta snow-wreath will be low given no new land inundation.

Ltr#-Cmt#	Comment	Response
		Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, Section AD 3.3.5, Supplementation of the EIS regarding the rationale for the adequacy of the Draft EIS.
41-3	The California Natural Diversity Database (CNDDB) was used to identify species that are not federally listed "that occur in or may be affected by projects in the study area." CNDDB is a positive occurrence database meaning that the lack of an occurrence in the study area does not preclude a species from being present. Relying on documented CNDDB locations within the study area to evaluate impacts to special status plants creates a likelihood that there are many more taxa with the potential to be impacted than were evaluated. Typically we would recommend that not only the entire USGS quad that the project area intersects is queried but all adjacent quads as well. This will create a comprehensive list of taxa with the potential to occur in the study area that can be reviewed to verify that the habitat type or elevation range for each taxon would be present within the project footprint.	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the methodology and scientific accuracy that the impact analysis utilizes in accordance with the NEPA regulations cited in the standard response. The CNDDB was queried for the study area and all species whose occurrences overlapped the study area or with suitable habitat were included in the analysis. However, those special-status plant species with no suitable habitat present within the study area were not included in the analysis because there is no potential for operational changes from the alternatives to affect these species compared to the conditions under the No Action Alternative.
41-4	The Draft EIS for the Long-Term Operations of the Central Valley Project and State Water Project states that the study area includes areas that could be affected directly or indirectly by the action alternatives and regarding terrestrial resources the study area includes the aquatic areas and associated aquatic margins of CVP reservoirs rivers and wetlands including the Bay-Delta. However all of the associated aquatic margins of CVP reservoirs are not included in the analysis. As the operations to maintain flows at Bend Bridge below 100000 cfs would affect Shasta Reservoir and the potential for reservoir elevations to exceed the top of conservation pool storage Shasta Reservoir should have been included in analysis of impacts. Several species listed in the CNDDB have documented occurrences with the potential to be affected by elevations exceeding the top of conservation pool	In the DEIS, Reclamation modeled operations of all alternatives using the existing capacity of Shasta Reservoir, 4,552 thousand acre-feet (TAF), therefore the maximum reservoir elevation would be within the historical range and no new land would be inundated. Additional special-status plant species along aquatic margins of CVP Reservoirs have been evaluated and added to Appendix P under Table P.1-2. Potential for effects on Shasta snow-wreath will be low given no new land inundation.

Ltr#-Cmt#	Comment	Response
	storage at Shasta Reservoir including Shasta limestone monkeyflower (Erythranthe taylorii) 1B.1 Shasta fawn lily (Erythronium shastense) 1B.2 Shasta snow-wreath (Neviusia cliflonii) 1B.2 State Threatened under Federal Review Shasta Huckleberry (Vaccinium shastense ssp. shastense) 1B.3 and oval-leaved viburnum (Viburnum ellipticum) 2B.3. Of particular concern is the Shasta snow-wreath this narrow endemic is only known from the region immediately surrounding Shast Reservoir and levels exceeding the top of conservation pool storage could impact 9 of the 26 known occurrences of this species. Given the potential impacts of operations to populations of these species we recommend a monitoring plan be developed to ensure that inundation due to increased elevations do not negatively impact populations and a management plan be developed to mitigate potential impacts of operations to these populations.	
41-5	We would strongly recommend that a supplementary DEIS be prepared to ensure that all species with the potential to occur are considered to analyze impacts to species in associated aquatic margins of CVP reservoirs that could be impacted by operations to develop monitoring plans for species with the potential to be impacted specifically for impacts to special status pant species associated with increased reservoir elevations at Shast Reservoir due to restrictions in outflows.	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding comments recommending or requesting that the Draft EIS be revised or supplemented and redistributed for public review. Potential environmental effects on plant species associated with aquatic margins of CVP reservoirs that could be impacted by operations are evaluated starting on page 39 in Table P.1 2, Special-Status Plant Species. Changes in flows and water surface elevations from the alternatives compared with the No Action Alternative are expected to result in minor effects on plants and wildlife along reservoir and riverbanks. These effects do not differ from the potential changes in terrestrial biological resources under the No Action Alternative at reservoirs that store CVP water, tributaries, and the Delta, which were described and considered in the 2020 Record of Decision, which is incorporated by reference in the Draft EIS. Please refer to Alternative 1 of that document.

Ltr#-Cmt#	Comment	Response
		Regarding Shasta Reservoir—in the 2019 LTO Public Draft EIS, Reclamation modeled operations of all alternatives using the existing capacity of Shasta Reservoir, 4,552 thousand acre-feet (TAF); therefore, the maximum reservoir elevation would be within the historical range, and no new land would be inundated. Thus, no new impacts on special-status plant species would occur beyond what has been analyzed in previous modeling. Appendix O, Aquatic Resources Technical Appendix, includes an analysis of Shasta Reservoir impacts on warmwater fish species and coldwater fish species (see Sections O.4.34.1, O.5.34.1, O.6.34.1, and O.7.34.1).
41-6	Thank you for the opportunity to comment on the operation of the CVP and SWP and please contact me if you have any questions.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.

Table 4-42. Letter No. 42

Ltr#- Cmt#	Comment	Response
42-1	I support Alternative 3 which will support the recovery of endangered salmon, steelhead, and smelt. Healthy rivers are needed to sustain the fish. Alternative 3 will bring greater flows, stronger temperature requirements to save the endangered species and ecosystems.	Support for Alternative 3 is noted. Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding comments that state opinions of general opposition to the project. Refer to Standard Response 7, Aquatic Resources, regarding general concern for negative adverse effects on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta), that could potentially result from the alternatives. Refer to Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.8, for a summary of the impacts on aquatic resources.
42-2	The present Proposed Action in DEIS will lead to the extinction of these species. Thank you.	Please refer to Chapter 12, Fish and Aquatic Resources and Appendix O, Fish and Aquatic Resources Technical Appendix, for a discussion of impacts to aquatic resources associated with the alternatives.

Table 4-43. Letter No. 43

Ltr#-Cmt#	Comment	Response
43-1	Resources (1) Sacramento Bee: Trump sending more water to CA farms troubled federal biologists - they were sidelined (2) Water users submit request to Gov. Newsom and Sec. Haaland to waive environmental ("X2") requirements (3) FOR and partners' letter to Sec. Haaland to maintain environmental ("X2") requirements	This is a list of resources provided by the commenter. It is not a comment on the contents of the EIS.
43-2	Why is Reclamation doing this? We must help the endangered salmon and smelt not do harm.	Please refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Please refer to Chapter 12, Fish and Aquatic Resources and Appendix O, Fish and Aquatic Resources Technical Appendix, for a discussion of impacts to aquatic resources associated with the alternatives.

Table 4-44. Letter No. 44

Ltr#-Cmt#	Comment	Response
44-1	My only comment is that the storage added by the upcoming Folsom Dam raise should be used solely for added flood protection for Sacramento. This is the expressed purpose of the dam raise and we should not even be entertaining other ideas for this storage. Of course it might be tempting to say, oh, let's let that storage fill up in the winter so we have more water for other uses, but that was never the intention so it should not be allowed or considered.	This comment is on a topic outside the scope of this EIS.

Table 4-45. Letter No. 45

Ltr#-Cmt#	Comment	Response
45-1	Hello, and thank you for taking my comments into consideration. My name is [commenter name], and I am representing myself as a resident of Sacramento and a UC Davis graduate of Sustainable Environmental Design.	Reclamation appreciates this comment. This is introductory text that presents background information about the commenter.
45-2	Alternative 3 is my preferred alternative because it is the only alternative that resembles a sustainable long-term outcome and viable future for generations to come. Additionally, alternative 3 is the only alternative that encourages and implements a reduction in water use.	Support for Alterative 3 is noted. Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding comments that state opinions of general support for the project. Potential significant environmental effects of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS.
45-3	I would like to encourage and request that the Bureau of Reclamation conduct a life- cycle assessment (LCA) of the commercial water supply for each alternative.	Please refer to Standard Response 5, Adequacy of the Analysis and Mitigation, regarding the scope of the analysis. Refer also to EIS Chapter 5 and Appendix H, Water Supply, regarding effects of the alternatives on potential changes in water supply deliveries. EIS Appendix H details the changes to water supply deliveries under each alternative compared to the No Action Alternative.
45-4	I also would like to request additional data tables be shown in Section 0.3.1 Water Quality that show the comparison of Delta Inflow and Outflow per alternative. That would be eight graphs: one for each alternative showing its inflow and outflow. It would be nice to be able to compare each alternative in this regard.	Section 0.3.1 is part of the Executive Summary. Chapter 4, Water Quality, presents graphs comparing average river flows under each alternative during various water year types. In addition, refer to Appendix H, which provides tables of changes in CVP and SWP contract deliveries in the Bay-Delta for each alternative under various possible scenarios. Refer the tables found under the Bay-Delta subheadings in Sections H.2.4, Alternative 1; H.2.5 Alternative 2; H.2.6 Alternative 3; and H.2.7 Alternative 4. Table H-54, Impact Summary, describes the magnitude and direction of impacts for all alternatives relative to the No Action Alternative in a single table.

Ltr#-Cmt#	Comment	Response
		Refer to Standard Response 5, Adequacy of the Analysis and Mitigation regarding the scope of the analysis.
45-5	Lastly, I am confused why this project is not subject to CEQA. I suspect there is nothing to address on this final note, but I still wanted to include.	Please refer to Standard Response 2, Related Regulatory Processes regarding CEQA.

Table 4-46. Letter No. 46

Ltr#-Cmt#	Comment	Response
46-1	As a component of Preferred Alternative 2b (Multi-Agency Consensus) there is a proposed Governance structure. The Bureau of Reclamation is involved throughout the Governance model and the Western Area Power Administration (WAPA) is included in the Sacramento River Group (SRG) but commercial power customers are not represented. Given that power is an authorized purpose of the CVP power customers should be included in the Governance Structure to help the operating agencies adaptively manage the federal resource while balancing environmental requirements water deliveries public safety and power generation. The proposed Governance structure provides the Sacramento Settlement Contractors (SSC) a direct link to the Shasta Operations Team (SHOT). This represents a key water stakeholder with direct involvement in the Governance and adaptive management of the federal project. Adding similar representation for CVP commercial power customers would be appropriate and help to balance representation for the various project purposes. Commercial power customers should also be represented in other key river system (American and Stanislaus) adaptive management groups.	The Governance Structure proposed for Alternative 2B contains the flexibility to include additional entities as necessary. For example, the Draft EIS describes that the SHOT may convene relevant technical teams to support Shasta or system-wide policy decisions.
46-2	The proposed Directors Group as well as the SHOT are composed of key agencies responsible for various water and environmental management activities. Given that power is an authorized project purpose WAPA should be included in these Governance groups to represent power interests while maximizing the environmental and economic benefits of the federal hydropower resource	WAPA is included in the Sacramento River Temperature and Flow Technical Group (SRG). As shown in Figure E-20 in Appendix E, Draft Alternatives, to the Draft EIS, this group has a direct relationship for elevation and decision-making with the SHOT, which has a direct relationship for elevation and decision-making with the Directors Group.
46-3	The proposed governance model has the potential to disrupt the CVO's ability to meet all of the various requirements of system	The commenter’s input regarding the function of the governance groups is noted and included in the record for consideration by

Ltr#-Cmt#	Comment	Response
	operations while keeping rates low and supporting system reliability. The governance groups should be limited to advising and setting overarching goals to meet environmental requirements while allowing the CVO to continue daily weekly and monthly operations planning in collaboration with water and power stakeholders.	decisionmakers. Refer to Section E.5.16 of Appendix E, Draft Alternatives, to the Draft EIS for a description of the purposes of CVP/SWP governance.
46-4	Studies to evaluate the impacts of each potential Alternative are critical to identify and weigh benefits and impacts to the environment as well as economic impacts to the region. As documented in WAPA's comments during the Cooperating Agency Draft process significant air quality and greenhouse gas (GHG) impacts could occur if CVP operations change such that renewable emission free hydropower is not available during peak power periods. During these times which typically correspond with high demand on the overall power grid (summer peak and daily peak) if hydropower isn't available then high emissions GHG producing generators are required to operate to meet regional customer loads and ensure system reliability. This beneficial environmental aspect of the CVP is represented in the emissions modeling presented as part of the "Low Emissions with Flexible Management" Alternative provided during the Cooperating Agency review of the Draft EIS. Reclamation did not include the Low Emissions with Flexible Management Alternative in this Draft Public EIS but has stated that it will be included in the ongoing Trinity River Supplemental EIS process. The current EIS certainly has the potential to increase harmful emissions so why was the Low Emissions with Flexible Management Alternative not considered in this EIS? High demand timeframes also correspond with the most expensive energy market conditions increasing customer economic pressure throughout the region. Analysis of these issues should be thoroughly studied and included in Chapters 9	The alternatives in the Draft EIS include the continued implementation of the 2000 Trinity ROD. Please refer to Standard Response 8, Trinity River Division, for the steps for future potential modification to operations of the Trinity River Division. The Low-Emissions Alternative submitted by WAPA will be considered in accordance with the process described in Standard Response 8.

Ltr#-Cmt#	Comment	Response
	(Air Quality) 10 (Greenhouse Gas Emissions) and 21 (Public Health and Safety) of the EIS.	
46-5	Reclamation states that they will incorporate the results of the Trinity River Division (TRD) parallel environmental analysis in this EIS/Record of Decision (ROD). The upper Sacramento and Trinity River Divisions are closely connected due to the fact that Trinity diversions benefit hydropower production and contribute to management of the Shasta cold water pool. Trinity Diversions are of particular importance for CVP hydropower. Each acre-foot of water released from Trinity Reservoir will create one set of environmental and other benefits if it is released down the Trinity River at Lewiston and another larger set of benefits if it is released through the Carr Power Plant. Water released through the Carr Power Plant generates 545kWh/AF of clean energy and lowers the temperatures in the depths of Whiskeytown lake and those lower temperatures create fish and wildlife benefits in the successful Clear Creek restoration efforts. Assuming the Clear Creek flows are maintained at their successful levels net changes in TRD are allowed to flow the cool water through the Spring Creek turbine generating 555kWh/AF more energy as the water is released into Keswick Reservoir to enhance supplies there and to reduce concentrations of man-made pollutants flowing into Keswick from the prior century's mining operations. The TRD water brings its remaining coolness to help manage and blend temperatures in Keswick reservoir on the Sacramento River. The TRD water then flows through the Keswick generators creating an additional 70 kWh/AF of vital baseload electrical power. Given that the CVP exists primarily for flood control reclamation and water management and that it has additional purposes of clean electric generation and fish and wildlife enhancement and mitigation it makes sense to consider the full stack of benefits each acre foot can create whether it's an incremental AF onto	The Trinity River Division is part of the CVP. Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives.

Ltr#-Cmt#	Comment	Response
	the Trinity River path or onto the Sacramento and Delta path. The TRD water at the margins of the 50/50 sharing is the most environmentally productive water in the CVP. Care must be taken to make sure those acre-feet near the intended 50/50 split of water are used to perform the most benefit they possibly can. The Trinity River supports the Sacramento for meeting water and environmental goals. The two basins are tied together and need to be analyzed together. The paragraph above explains the large environmental benefits created by each marginal acre-foot of TRD water allowed to flow through Carr Spring Creek and Keswick power plants keeping summer and fall water temperatures cool and contributing to healthy conditions in the Sacramento River and the Delta. The TRD water either flows to the bay or is pumped for delivery to enhance water purposes or to reduce ground water overdraft and its associated problems. The tie between the TRD and the rest of the CVP needs to be modeled together in a single EIS so that the benefits and risks to environmental and social justice as well as the power water and environmental interests can be weighed together to make the best decisions possible for maintaining the set of values created. We cannot make optimal decisions with two separate EISs. The increasingly stressed environment from climate change and the long run social justice needs long ignored are too important to risk selecting sub-optimal solutions from segregated analyses.	
46-6	The Bay-Delta Water Quality Control Board is in the process of completing their state environmental analysis. How will these two closely-related processes be integrated? For instance one of the Alternatives for the state process includes implementation of Voluntary Agreements which includes a Governance proposal as well. Each Governance group would be making decisions and implementing operational practices for managing water deliveries throughout the state for environmental and water use	Please refer to Standard Response 10, Voluntary Agreements, regarding general concern about voluntary agreements. Please refer to Chapter 3, Section 3.4.10, Governance, for discussion of the Governance structure and the Voluntary Agreements. The Governance structure is also illustrated in Figure 3-17, Governance Structure for CVP and SWP Water Operations. For the full description of Governance and the adaptive management program, please refer to Appendix E.

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	requirements as well as impacting hydropower. How would the two Governance structures interact?	The phases analyzed in Reclamation's preferred alternative (Alternative 2) provide a range of analysis of impacts that include no Voluntary Agreements, partial Voluntary Agreements, and full Voluntary Agreements. Reclamation would default to operations in line with the Board's implementation of Voluntary Agreements.
46-7	Modeling of Alternative 2 as shown in the Draft Public EIS Appendix U Power Model Documentation indicates that hydropower production will remain similar or potentially increase slightly compared to the No Action Alternative. However energy production for Alternative 2 as modeled shows significant increases in the months of March and April. Increased energy production is likely to be nullified by the fact that these spring months overlap with regular negative pricing windows in the CAISO market. Negative pricing is driven by overproduction of solar energy during the day overlapping with low to moderate energy demand due to favorable seasonal temperatures. Given that market prices are often near zero or negative during these months rather than generating energy the CVO would bypass water around CVP generators to avoid economic impacts. Therefore the forecast increase in energy production would not occur. Moving this much additional water in March and April will also impact river temperature management throughout the summer season as well as reducing hydropower "fuel" available in CVP reservoirs during high-demand periods of the year. In addition project-use pumping load is forecast to decrease during these same months. This further exacerbates the economic impacts since green energy overgeneration during this timeframe would have to be curtailed if these large project use loads are reduced in March and April. In the event WAPA must purchase power to replace resources that are unavailable or lost due to bypass operations these costs should be non-	Please refer to Standard Response 6, Hydrologic Modeling regarding the appropriate use of models as a comparative tool for assessing potential impacts. Reclamation has coordinated closely with WAPA to consider modeling approaches used in the EIS analysis. In compliance with NEPA, the EIS provides an evaluation of potential direct, indirect and cumulative impacts on power production (See Chapter 18 and associated Appendix U, Power Technical Appendix). The commenter is correct that the prevalence of negative pricing in power markets has been increasing and is being seen in multiple months across the year. To date, the daily volume of CVP generation offered in Day-Ahead markets has not been reduced by negative Day-Ahead pricing and negative Day-Ahead prices have not caused spills to be scheduled in place of generation. Under the current market practices, negative pricing is only causing generation reductions and/or spilling in the Real-Time market. Pumping load is similarly scheduled in the Day-Ahead process with a heavy load preference for low or negative priced hours. Currently, there is uncertainty regarding the timing and extent of negative pricing in power markets. Factors such as the ongoing integration of renewables, expansion of energy storage, carbon pricing, and the development of regionalized energy markets

Ltr#-Cmt#	Comment	Response
	reimbursable and should not be borne by WAPA or WAPA's hydropower customers. If implemented federal non-reimbursable funding should be provided to cover these financial impacts or project beneficiaries of these operational practices should be responsible for the associated costs of these operations. NCPA and its members have a long-standing commitment to provide California residents with an electricity supply that is reliable affordable and socially and environmentally responsible and have a long tradition of investment in conservation projects. The CVP hydropower resource is an important component of our business model with NCPA and its members holding approximately 42% of the CVP Preference Power allocations. These clean power resources are incredibly important to the environment power system reliability and continued economic success of the region.	contribute to the unpredictability of seasonal energy values. This uncertainty, combined with the flexibility of hydro facilities to mitigate negative pricing, makes it challenging to accurately assess whether future generation shifted to the indicated seasons results in a loss or benefit. An acknowledgement of uncertainty has been added to Appendix U.

Table 4-47. Letter No. 47

Ltr#-Cmt#	Comment	Response
47-1	Please use Alternative 3, the SCIENCE based choice! Other options will lead to extinction of several fish, as shown by your own analysis!!	Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding comments that state opinions of general opposition to the project. Refer to Standard Response 7, Aquatic Resources, regarding general concern for negative adverse effects on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta), that could potentially result from the alternatives. Refer to Appendix O, Fish and Aquatic Resources, Section O.8, for a summary of the aquatic resource impacts. Refer to Standard Response 5, Alternatives Formulation, regarding the alternatives analyzed in the EIS. Support for Alternative 3 has been noted.

Table 4-48. Letter No. 48

Ltr#-Cmt#	Comment	Response
48-1	I am a long time river advocate and have spent a LOT of time on CA rivers as well as rivers in other states.	This information describes the background of the individual commenter. It is not a comment on the contents of the EIS.
48-2	Balancing the needs of water for humans and taking care of the health of the rivers is a difficult task but it is possible with good and fair policies.	Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP.

Table 4-49. Letter No. 49

Ltr#-Cmt#	Comment	Response
49-1	I'm writing regarding operation of California's Central Valley Project.	This information describes the structure or organization of the comment letter. It is not a comment on the contents of the EIS.
49-2	The Biological Opinions (biops) currently in effect were rewritten by the Trump administration when the truly unbiased biops were deemed to be too protective of the environment and less favorable to water transfers. The Newsom administration in California has subsequently attempted to create "Voluntary Agreements" for CVP operation, but those agreements do not protect the important environmental values of the San Francisco Bay-Delta. Please do not use these documents and agreements to base operation of the CVP.	Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding comments that state opinions of general opposition to the project, and regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Please refer to Standard Response 2, Related Regulatory Processes, regarding the 2019 Biological Opinions and the Biological Opinion Process. Please refer to Standard Response 10, Voluntary Agreements, regarding general concern about voluntary agreements.
49-3	I'm counting on you to revise operations as indicated in Alternative 3.	Please refer to Standard Response 4, Alternatives Formulation, regarding the development of alternatives. The selected actions will be described in the Record of Decision. Support for Alternative 3 has been noted.

Table 4-50. Letter No. 50

Ltr#-Cmt#	Comment	Response
50-1	My organization, Northern California Council, Fly Fishers International, has been engaged for many years in pushing California and BOR to operate the state's major water project in the San Francisco Bay-Delta in a manner that supports its anadromous and pelagic fisheries. It has been frustrating that so little progress has been made to stabilize these fisheries, and support recovery of them. In fact, in the past generation it has gotten worse, not better.	This information describes the background of the organization or individual commenter. It is not a comment on the contents of the EIS. Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding comments that state opinions of general opposition to the project. Refer to Standard Response 7, Aquatic Resources, regarding general concern for negative adverse effects on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta), that could potentially result from the alternatives.

Table 4-51. Letter No. 51

Ltr#-Cmt#	Comment	Response
51-1	INTRODUCTION The U.S. Bureau of Reclamation (Reclamation) Draft EIS declares that Reclamation "prepared this Environmental Impact Statement (EIS) for the 2021 Endangered Species Act Reinitiation of Section 7 Consultation on the Long-Term Operation of the Central Valley Project (CVP) and State Water Project (SWP)." (Draft EIS p. 0-1.) The Endangered Species Act and the endangered and threatened species affected by Project operations are the primary subject of the Draft EIS. So these comments will focus on the deficiencies of the Draft EIS with respect to subject endangered and threatened species. 1. THE DRAFT EIS DOES NOT PROVIDE BROAD PUBLIC DISSEMINATION OF RELEVANT INFORMATION ABOUT AND RECLAMATION DID NOT USE ITS BEST EFFORTS TO FIND OUT ALL THAT IT REASONABLY CAN ABOUT THE ADVERSE EFFECTS OF CVP AND SWP OPERATIONS ON ENDANGERED AND THREATENED FISH SPECIES These comments focus on 6 of the listed fish species that were subjects of the Draft EIS. Chinook Salmon Sacramento River Winter-Run ESU (evolutionary significant unit) are endangered under both the federal and state ESAs. Chinook Salmon Central Valley Spring-Run ESU are threatened under both federal and state ESAs. Steelhead California Central Valley DPS (distinct population segment) are threatened under the federal ESA not listed under the state ESA. Green Sturgeon Southern DPS are threatened under the federal ESA SSC (species of special concern) under state law. Delta Smelt are threatened under the federal ESA endangered under the state ESA. Longfin Smelt San Francisco Bay-Delta DPS were proposed endangered when the Draft EIS was issued and are now endangered under the federal	The impact analysis provided in the EIS was based on a wide range of analyses above and beyond what is typically compiled for water-based projects similar to the scope and complexity of the Reinitiation of Consultation on the Coordinated Long-Term Operation. In addition to CalSim 3 modeling, many biological models were used to assess impacts on listed and non-listed fish species, including several models specific to changes in flows through the Bay-Delta. Impacts on fish species are evaluated using a comparative analysis and by location and are detailed in Appendix O, Aquatic Resources Technical Appendix. For details on the structure of the EIS, refer to Standard Response 7, Aquatic Resources.

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	ESA and threatened and SSC under state law. All 6 species are considered to be of tribal commercial or recreational importance. All 6 species occur within the Bay-Delta all except for Delta and Longfin Smelt also occur within the Sacramento River Chinook Salmon Central Valley Spring-run ESU also occur within Clear Creek and Steelhead also occur within Clear Creek Lower American River Stanislaus River and the San Joaquin River. (Draft EIS Chapter 12 Table 12-1 p. 12-1.) A. The Draft EIS Fails to Disclose Relevant Information that Delta Outflows Must be Increased Meaning that Exports Must be Reduced to Protect Endangered and Threatened Fish Species Reclamation's Draft EIS hides instead of provides broad public dissemination of relevant information about the adverse effects of the CVP and SWP operations on endangered and threatened fish species. The adverse effects result from diverting freshwater flows for export thereby reducing flows in the watershed including the Sacramento River and Delta. The flows are the critical habitat for the endangered and threatened fish species. Reclamation failed to use its best efforts to find out all that it reasonably can about the adverse effects of diverting freshwater flows for exports on the endangered and threatened fish species. Reclamation's absence of disclosure and failure to use its best efforts violated NEPA as explained below in section 1B of these comments.	
51-2	1. Water Board Information Hidden from Readers of the Draft EIS On September 28 2023 the State Water Resources Control Board (Water Board) issued its Draft Staff Report/Substitute Environmental Document in Support of Potential Updates to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary for the Sacramento River and its Tributaries Delta Eastside Tributaries and Delta. The Water Board Document will hereafter be referred to as the Staff	This comment pertains to Reclamation's comments on the State Water Resources Control Board's Draft Staff Report in support of updates to the "Water Quality Control Plan for the San Francisco Bay-Sacramento-San Joaquin Delta Estuary for the Sacramento River and Delta watersheds" and therefore does not pertain directly to the Draft EIS.

Ltr#-Cmt#	Comment	Response
	Report/SED. Reclamation has the Water Board's Staff Report/SED. In fact Reclamation commented on the Water Board's Staff Report/SED in its January 19 2024 three-page single spaced letter with its seven page attachment of detailed comments. A copy of Reclamation's comment letter is attached as Exhibit 1. Reclamation expressed concerns about the impacts of the increases in freshwater flows called for by the Staff Report/SED and resulting reductions in exports. Reclamation said "Based on Reclamation's review of the Draft Staff Report the VA [voluntary agreement] alternative appears to be the only alternative that has a viable path towards implementation. In addition we note that the VA is preferable over the unimpaired flows (UIF) alternatives and modules because the uniform application of UIF objectives across varied watersheds has disparate impacts due to the variability in hydrology in those watersheds." (Exhibit 1 p. 1.) In comment 38 Reclamation said "The reduction in exports from the Delta to reservoirs in other regions should be analyzed in more detail as a potential major impact associated with the course of the proposed action." (Exhibit 1 comment 38.) Reclamation said in comment 44 "Concur with analysis of alternatives statement? "Under the proposed VAs impacts from changes in hydrology and supply would be smaller in magnitude and geographic scope than the changes that would occur under the proposed Plan amendments. In many instances the VAs would have no impact or less-than-significant impacts where the proposed Plan amendments would have potentially significant impacts. " (Exhibit 1 comment 44) (Emphasis in original.) So Reclamation was telling the Water Board that the proposed Plan amendments which proposed an unimpaired flow alternative would increase flows by reducing exports whereas the voluntary agreements which were not proposed for implementation by the Staff Report/SED would not result in reducing exports. With one hand	

Ltr#-Cmt#	Comment	Response
	Reclamation expressed its concerns in its January 19 2024 comment letter about the Staff Report/SED to the Water Board. With the other hand Reclamation concealed instead of disclosed to the public the information in the Staff Report/SED in the Draft EIS Reclamation issued 6 months later on July 26 2024. The Staff Report/SED is not even mentioned in the Draft EIS Chapter 12 on "Fish and Aquatic Resources." The Staff Report/SED is not listed as a reference for Chapter 12 in Draft EIS "Appendix B-References." The Staff Report/SED is not disclosed or discussed anywhere in the Draft EIS and appendixes. Reclamation hid from the public all of the following information in its Draft EIS. The Staff Report/SED is furnished to Reclamation with these comments. The Staff Report/SED is also available online athttps://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delt a/staff_report.html The Water Board's Staff Report/SED proposed Delta Plan amendments require substantial increases in Delta outflows to protect the environment including prevention of extinctions of endangered and threatened fish species. "The last major update to the flow objectives for the protection of fish and wildlife beneficial uses in the Sacramento River watershed and Delta occurred in 1995." (Staff Report/SED Ch. 5 p. 5-3.) "The current Bay-Delta Plan is primarily implemented through water right requirements included in State Water Board Water Right Decision 1641 (D-1641)." (Id.) D-1641 dates back to 1999 and 2000. Chapter 7 of the Staff Report/SED sets forth the Environmental Analysis for the Document. The Chapter explains "The Sacramento/Delta update to the Bay-Delta Plan is critically important to the health and survival of the Bay-Delta ecosystem. Native species in the Bay-Delta ecosystem are experiencing an ecological crisis." (Ch. 7.12 Hydrology and Water Quality 7.12.1 Surface Water p. 7.12.1-1) (Emphasis added.) The Chapter goes on to explain the quality of water in the channels has been degraded and there	

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	has been a substantial overall reduction in flows and significant changes in the timing and distribution of those flows and species have been cut off from natal waters. These issues have led to severe declines and in some cases extinction of native fish and other aquatic species. The overall health of the estuary for native species is in trouble and expeditious action is needed on the watershed level to address the crisis including actions by the State Water Board fisheries agencies water users and others to address the array of issues affecting the watershed. (Id.) Chapter 7.23 of the Environmental Analysis explains in similar fashion The Delta is experiencing an ecological crisis in the watershed and the prolonged and precipitous decline in numerous native species of spring-run and winter-run Chinook salmon longfin smelt Delta smelt Sacramento splittail and other species and the factors involved in those declines. Failing to take actions proposed by the proposed Plan amendments could result in the loss of Delta function beyond restoration of its original function and therefore would result in a significant irreversible environmental change. (Ch. 7.23 Cumulative Impact Analysis Growth-Inducing Impacts and Significant Irreversible Environmental Changes p. 7.23-69) (Emphasis added.) Chapter 7.6.2 of the Environmental Analysis explains "Anadromous salmonids which use habitat in the Bay-Delta estuary and upstream tributaries have also exhibited substantial declines in population abundance in recent decades." (Ch. 7.6.2 Aquatic Biological Resources p. 7.6.2-4.) The Chapter goes on to explain It is estimated that the average annual natural production of Sacramento River winter-run Chinook salmon Sacramento River spring-Chinook salmon Sacramento River fall-run Chinook salmon (mainstem) and Sacramento River late fall-run Chinook salmon (mainstem) decreased between 1967 and 1991 and between 1992 and 2015 by 89 61 43 and 52 percent respectively (see Table 3.4-3 in Chapter 3). Available data also show a long-	

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	term decline in escapement of steelhead from the Sacramento and San Joaquin River basins (McEwan 2001). Hatcheries now provide most of the salmon and steelhead caught in the commercial and recreational fisheries. (Id. p. 7.6.2-4.) "The population abundance of Sacramento splittail Delta smelt and longfin smelt have declined by 98 98 and 99 percent respectively since sampling began in 1967." (Ch. 3 Scientific Knowledge to Inform Fish and Wildlife Flow Recommendations p. 3-134.) Chapter 7.6.2 explains how the proposed increases in Delta inflows and outflows would improve flow and habitat conditions for anadromous estuarine and resident fish conditions to support their life stage needs. (Ch. 7.6.2 p. 7.6.2-36 and pp. 7.6.2-35-39.) Escapement of winter-run Chinook salmon was 100000 fish in the 1960s as high as 35000 fish in 1976 since declining to a few thousand. (Ch. 3 p. 3-23.) Spring-run Chinook salmon runs were as large as 600000 fish from 1880 to 1940 but now average around 14500 fish. (Id. p. 3-25.) Higher flows are protective of all Central Valley Chinook salmon and steelhead as they migrate through the Delta as juveniles. (Id. p. 3- 42.)"Delta outflow also affects biological resources in San Francisco Bay and the nearshore coastal ocean." (Id. p.3-10.) "Increased Delta outflows provide higher water quality and habitat complexity leading to positive effects on native fish species and foodwebs." (Id.) "The abundance reproductive success and mortality rate of Orca whales that migrate and specialize in feeding on salmon outside the Golden Gate have been affected by the major salmon declines in recent years (Ford and Ellis 2006; Ford et al. 2010; Ward et al 2009). Their populations are limited by the availability of salmon prey highlighting the importance of Delta outflow all the way to the top of the aquatic chain." (Id.) The abundance of longfin smelt is positively correlated to Delta outflow. (Id. p. 3-56.) Chapter 2 of the Staff Report/SED explains The combined effects of water exports and upstream diversions have	

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	contributed to reduce the average annual net outflow from the Delta by 33% and 48% during the 1948 through 1968 and 1986 through 2005 periods respectively compared with unimpaired conditions (Fleenor et al. 2010). Dayflow data also show a trend for decreasing Delta outflow through time. Since the 1990s there has been a reduction in spring outflow and a reduction in the variability of Delta outflow throughout the year (Figure 2.4-7) due largely to the combined effects of exports diversions and variable hydrology. (Ch. 2 Hydrology and Water Supply p. 2-106) (Emphasis added.)"The species evaluations indicate that multiple aquatic species in the Bay-Delta estuary are in crisis. Recovery of native species would require both habitat restoration and increased flow in Central Valley tributaries and the Delta. Successful recovery of native species is not possible without parallel investment in both efforts." (Id. p. 3-134) (Emphasis added.)"Based on available information regarding several proposed water diversion and conveyance projects and pending water right applications that propose surface water diversions during the wet season it is assumed that streamflows may be reduced during the winter and spring under the no project alternative which could result in potentially significant impacts on aquatic and terrestrial species and habitats in the Sacramento/Delta watershed." (Ch. 7.24 Alternatives Analysis p. 7.24-9.) So Delta outflows must be increased. That means exports must be reduced. The Executive Summary explains existing regulatory minimum Delta outflows would not be protective of the ecosystem and without additional instream flow protections existing flows may be reduced in the future particularly with climate change and additional water development absent additional minimum instream flow requirements that ensure flows are preserved instream when needed for the reasonable protection for fish and wildlife. (Id. p. 1-9.) The proposed minimum inflow objective is 55% of	

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	unimpaired flow within an allowed adaptive range between 45% and 65% from Sacramento/Delta tributaries. (Ch. 5 p. 5-17.) The outflow objective includes "Inflow-based Delta outflows that would require inflows required as part of the Bay-Delta Plan including from the Sacramento/Delta tributaries and San Joaquin River and tributaries to be provided as outflows." (Ch. 7.2 Description of Alternatives p. 7.2-2.) "Changes in hydrology would increase annual Delta outflow in all months except August." Ch. 7.12 p. 7.12.1-77.) Water exports and upstream diversions have combined to reduce the average annual Delta net outflow 33% from 1948 to 1968 and 48% from 1986 to 2005 compared with unimpaired conditions. (Ch. 2 p. 2-106.) Moreover "Since the 1990s there also has been a significant decline in spring outflow and a reduction in the variability of Delta outflow throughout the year (see Figure 2. 4-71 Chapter 2 Hydrology and Water Supply) due in part to water diversions as well as hydrology." (Ch. 5 p. 5-27.) Chapter 5 explains Outflows are needed to provide for ecological processes including continuity of flows from tributaries and the Delta to the Bay to protect native estuarine and anadromous aquatic species that inhabit the Bay-Delta and its tributaries throughout the year as juveniles or adults. Those outflows are needed to provide appropriate habitat conditions for migration and rearing of estuarine and anadromous fish species. (Id.) Chapter 5 states "Current Delta outflow requirements are far below protective levels." (Id. p. 5-28) (Emphasis added.) "The proposed Delta outflow objectives working with the inflow objectives are intended to provide a comprehensive integrated flow regime that protects fish and wildlife from natal streams out to the ocean. The changes are proposed both to enhance Delta outflow protections and to ensure that existing protections are not diminished." (Id.) The proposed narrative Delta outflow objective includes "Maintain Delta outflows sufficient to support and	

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	maintain the natural production of viable native anadromous fish estuarine fish and aquatic species populations rearing in or migrating through the Bay-Delta estuary." (Id.) By increasing Delta inflows and outflows the proposed Plan amendments lead to reductions in exports. Chapter 7.6.2 explains in general terms that there will be reduced exports for irrigation for agriculture and the Metropolitan Water District of Southern California (MWD.) (Ch. 7.6.2 pp. 7.6.2-96-98.) "Implementation of the proposed Plan amendments will result in changes in Sacramento/Delta water supply including reductions to agricultural and municipal uses.." (Ch. 7 p. 7.1-17.) The impacts of reductions in exports from the Sacramento/Delta for agricultural and municipal uses are discussed in Chapter 7.12 on Hydrology and Water Quality. (Ch. 7.12 pp. 7.12.1-96-100.) According to the Chapter 6 explanation of the simulation period of 93 water years 16% of years are critical 23% are dry and 18% are below normal collectively making up 57% of the water years. (Ch. 6 Changes in Hydrology and Water Supply p. 6-52.) Under the proposed flow objectives of 55% unimpaired flow exports from the Sacramento/Delta supply to the San Joaquin Valley region will be reduced by 383 TAF (thousand acre-feet per year) in critical years 707 TAF in dry years 510 TAF in below normal years 277 TAF in above normal years and 96 TAF in wet years. (Id. Table 6.4-20 p. 6-74.) Exports from the Sacramento/Delta supply to the Southern California region would be reduced 177 TAF in critical years 673 TAF in dry years 655 TAF in below normal years 541 TAF in above normal years and 265 TAF in wet years. (Id. Table 6.4-24 p. 6-79.) The referenced tables give the reductions under all scenarios under all 3 alternatives presented in the Staff Report/SED. There will be a significant reduction of water exports under the proposed Plan amendments. There will also be increased releases from upstream storage not subject to export under the proposed Plan amendments.	

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51-3	2. EPA Information Hidden from Readers of the Draft EIS On January 19 2024 the U.S. Environmental Protection Agency (EPA) issued a Comment Letter ("EPA Letter") to the California Water Resources Control Board on the Board's "Sacramento/Delta Draft Staff Report." A copy of EPA's letter and its 14 page Enclosure EPA Comments on the September 28 2023 Draft Staff Report in support of updates to the Water Quality Control Plan for the San Francisco Bay-Sacramento-San Joaquin Delta Estuary for the Sacramento River and Delta watersheds ("EPA Comments") is attached as Exhibit 2 to this comment letter. Reclamation's Draft EIS does not mention the EPA letter at all anywhere According to the expert EPA Delta flows and outflows must be significantly increased to protect endangered and threatened fish species and also to protect public health. According to the EPA "The State Water Board identified the need to comprehensively review and if necessary amend flow objectives in response to growing concern over deteriorating aquatic life conditions climate change and pelagic organism decline." (EPA Letter at 1.) Also "EPA notes that water quality standards for the waterbodies covered in this Staff Report were last updated in 1995 despite a Clean Water Act requirement that States consider and as appropriate make such updates at least once every three years. CWA 303(c)(1)." (EPA Letter at 1 fn. 1.) EPA said with respect to fish species needs The Staff Report along with previous State Water Board reports in which the State Water Board compiled and analyzed a significant amount of comprehensive scientific information recognize that substantially more flow is needed in the Delta and Sacramento-San Joaquin watersheds to support aquatic life. Currently six fish species (Delta smelt longfin smelt green sturgeon Sacramento River winter-run Chinook salmon Central Valley spring-run Chinook salmon Central Valley steelhead) are listed or proposed as threatened or endangered under the Endangered Species Act.	This comment pertains to the U.S. EPA's comment on the State Water Resources Control Board's Draft Staff Report in support of updates to the "Water Quality Control Plan for the San Francisco Bay-Sacramento-San Joaquin Delta Estuary for the Sacramento River and Delta watersheds" and therefore does not pertain directly to the Draft EIS. The U.S. EPA has also provided specific comments on the Draft EIS, which are responded to in this Final EIS. Refer to responses to letter 56 in this Final EIS.

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	Scientific consensus indicates that native fish population abundance is positively associated with flow volumes (e.g. Jassby et al. 1995 Sommer et al. 1997 Mac Nally et al. 2010 Tamburello et al. 2019) and that largescale increases in both flow and habitat restoration are needed to recover and protect these and other native species. (EPA Comments at 1) (Emphasis added.) EPA recommends the State Water Board consider scientific studies published since the State Water Board's 2017 Final Scientific Basis Report was released in the final Staff Report to support draft plan amendments. Studies published after 2017 may refine the State Water Board's identification of critical flow thresholds that benefit native fish species and estuarine habitat. For example recent studies on flow-survival relationships for Chinook salmon in the Sacramento River and Delta provide scientific support for the positive relationship between flow and outmigration survival and recruitment of Chinook salmon including for late-fall fall and winter-run salmon (Michel 2019) late-fall run and spring-run smolts (Cordoleani et al. 2018; Henderson et al. 2019; Michel et al. 2021; Perry et al. 2018) wild origin salmon fry (Munsch et al. 2020) and winter-run juveniles (Hassrick et al. 2022). Furthermore since the 2016 draft Scientific Basis Report and the 2017 Final Scientific Basis Report identified a flow range of 11400-29200 cfs as protective of fish and wildlife uses for the February-June period recent research has demonstrated that even greater flow magnitudes over a period longer than February-June are needed to be protective of zooplankton populations (Hassrick et al. 2023) which are a foundational group in the food web to support species at higher trophic levels including listed salmonids.(EPA Comments at 3-4) (Emphasis added.) There is more. EPA also said As cautioned by the State Water Board: "flow and physical habitat interact in many ways but they are not interchangeable. The best available science suggests that current flows are insufficient to protect	

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	public trust resources." Further scientific consensus indicates that native fish population abundance is positively associated with increasing flow volumes (e.g. Jassby et al. 1995 Sommer et al. 1997 Mac Nally et al. 2010 Tamburello et al. 2019) and that largescale increases in both flow and habitat restoration are needed to recover and protect these and other native species. Clearly flow is a critically important driver of the health of the Bay-Delta watershed. (EPA Comments at 6) (Emphasis added.) According to EPA habitat restoration is not sufficient. This Staff Report does not demonstrate that suitable habitat area in the Sacramento and Delta watersheds is a limiting factor on estuarine and anadromous fish population growth nor does the Staff Report provide an adequate scientific rationale to demonstrate that habitat restoration assets will increase fish abundance without meaningful increases in tributary flows protected as Delta outflows. Any improvements in habitat will likely be achieved only if pursued alongside substantial increases in flow rates because flow is strongly and positively correlated with many indicators of native fish survival including for salmon survival out-migrating from natal tributaries (Michel 2019 Henderson et al. 2019) salmon survival in and through the Delta (Perry et al. 2018) and Delta Smelt post-larval survival (Polansky et al. 2021). Targeted habitat restoration with insufficient flow on the other hand is associated with low salmonid inhabitation (Munsch et al. 2020). (EPA Comments at 9) (Emphasis added.)	
51-4	3. National Marine Fisheries Service Information Hidden from Readers of the Draft EIS Reclamation's Draft EIS also makes no mention anywhere at all of the National Marine Fisheries Service (NMFS) January 19 2024 comment letter on the Staff Report/SED. A copy of the NMFS comment letter is attached as Exhibit 3. The NMFS explained in its January 19 2024 comment letter on the Water Board's Staff Report/SED. Recent	This comment pertains to NMFS and CDFW's comment on the "Staff Report/Substitute Environmental Document in Support of Potential Updates to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary for the Sacramento River and its Tributaries, Delta Eastside Tributaries, and Delta." The commenter presents this information and does not explain how Reclamation should consider it in the context of

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	publications most notably work conducted by the SWFSC [NMFS Southwest Fisheries Science Center] (Michel 2018 Notch et al. 2020 Michel et al. 2021) outline the important relationship between flow and the survival of juvenile Chinook salmon during their outmigration through the Sacramento River and Delta. (Exhibit 3 p. 2.) In supporting recommendations for year-round inflow requirements based on hydrology the NMFS said Specifically we suggest consideration of instream flows that embrace the unimpaired hydrologic flow regime to support all anadromous salmonid and sturgeon life history stages and the ecological function of critical and essential fish habitat. Instream flows should support upstream and downstream migration and rearing needs including successful unimpeded passage over critical riffles and other impediments. Flow regimes should also support effective inundation of important rearing habitats such as riparian zones, floodplains, and side channels. Adoption of unimpaired flow is a useful approach to achieve a more natural flow pattern in the Sacramento River and Delta as it captures both within-year and between-year changes in hydrology. (Exhibit 3 pp. 3-4.) 4. California Department of Fish and Wildlife Information Hidden from Readers of the Draft EIS The California Department of Fish and Wildlife (CDFW) said in its January 19 2024 comments on the Water Board's Staff Report/SED CDFW supports the findings in the draft Staff Report and associated documents regarding the ecological status of the San Francisco Bay-Delta and its tributaries with many native fish species populations at historic low abundances and still declining. In recent years the poor water quality conditions in the Sacramento River watershed and Bay-Delta exacerbated by drought have brought fish species listed under the protection of state and federal Endangered Species Acts to levels near extinction or extirpation. Given the impaired condition of the ecosystem CDFW supports the State Water Board in its update of the Bay-	the Draft EIS; therefore, no additional response can be provided. However, note that Reclamation has coordinated extensively with NMFS and CDFW throughout preparation of the Draft EIS, as listed in Chapter 23, Attachment 1, Consultation and Coordination.

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	Delta Plan and encourages the State Water Board to move forward expeditiously. (CDFW comment letter at pp. 2-3) (Emphasis added.) (A copy of the CDFW comment letter is attached as Exhibit 4) (Emphasis added.) CDFW has also found that Delta Smelt have become virtually extinct in Delta waters. Exhibit 5 is the California Department of Fish and Wildlife Memorandum of January 25 2024 reporting the 2023 Fall Midwater Trawl annual fish abundance and distribution summary. Reclamation's Draft EIS does not disclose or discuss the summary. The summary reported at p. 2 Delta Smelt (Hypomesus transpacificus) No Delta Smelt were collected at any stations from September through December. The 2023 September-December index (0) is tied with 2018-2022 as the lowest index in FMWT history. An absence of Delta Smelt catch in the FMWT is consistent among other surveys in the estuary during this period. For example the Enhanced Delta Smelt Monitoring (EDSM) survey of the U.S. Fish and Wildlife Service (USFWS) caught only 6 Delta Smelt among 16 sampling weeks (between 9/4 and 12/19) comprised of 2054 tows (U.S. Fish and Wildlife Service 2023).The CDFW Memorandum of December 29 2022 reporting the 2022 Fall Midwater Trawl annual fish abundance and distribution summary reported with respect to Delta Smelt "The 2022 abundance index was zero and continues the trend of no catch in the FMWT (Fall Midwater Trawl Survey) since 2017." These summaries were not disclosed or discussed in Reclamation's Draft EIS. Improved flows will be necessary in efforts to revive the species. 5. The Voluntary Agreements are Not the Answer The EPA says the voluntary agreements are not the answer. The EPA explained in its January 19 2024 Comment Letter on the Staff Report/SED Clearly flow is a critically important driver of the health of the Bay-Delta watershed. However the VA [Voluntary Agreement] alternatives as currently proposed do not provide flow to ensure year-round protection	

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	or protection in critical dry years. Rather flow assets provided by the proposed VAs are concentrated January through June with priority in April and May during Dry Below Normal and Above Normal water years (Staff Report p. 9-5). As noted in the Staff Report one or more life stages of native estuarine and anadromous fish including threatened and endangered Chinook salmon and steelhead require access to habitats across the entire watershed at all times of the year (Staff Report Table 3.4-1 and footnote 4). For this reason it is important that the State Water Board include provisions to ensure adequate flow is available for year-round protection of designated uses in its Bay-Delta Plan amendments. Native salmonids are particularly at-risk during drought conditions. However potential VA flow assets are not required for critical dry years on most tributaries the Sacramento River and the Delta (Staff Report Table 9.3-1). Further the Staff Report indicates that during critical dry years the proposed VA alternative will result in a decrease of flows from baseline (Tables 9.5-2 to 9.5-5). (Exhibit 2 pp. 6-7.) The NMFS likewise said in its January 19 2024 comment letter that the voluntary agreements are not sufficient. The NMFS pointed out that only a small percentage of the required funding for "currently-identified habitat restoration projects" would be provided by the VA parties. Substantial funding $740 million hoped to be provided by state and federal agencies "has not been secured." (Exhibit 3 p. 4.) The NMFS also explained The VAs [voluntary agreements] propose that in the eighth year of implementation the Board would consider the reports analyses information and data from the VA Science Program as well as recommendations from the VA Governance Committee and the Delta Independent Science Board to decide the future of the VA Program. This proposed timeframe for assessing the effectiveness of the VAs is concerning given the dire status of native fish species within the Sacramento River Basin and Delta	

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	and the urgency in improving conditions for these species to prevent further declines. (Exhibit 3 p. 4) (Emphasis added.) The NMFS pointed out that the Voluntary Agreements flow assets would not be deployed during the years when ESA-listed species are at highest risk of extinction-- critical water years. (Id.) Also "In addition the potential benefits of the proposed VA flow assets are further reduced in some watersheds by limiting the frequency of deployment. For example the description of the American River states "These flows would be deployed in three out of eight years of the VA in the above year types." (Exhibit 3 pp. 4-5.) This is not sufficient to provide necessary protections to ESA-listed species. The NMFS said "Based on the information in the Staff Report we are highly uncertain that the VAs as currently proposed will provide for the reasonable protection of fish and wildlife beneficial uses through restoration of the Delta ecosystem over time." (Exhibit 3 p. 5.) The NMFS pointed out that the Water Board's Staff Report/SED modeling showed that the flow commitments in the VA Term Sheet are nonbinding and "would not provide a significant difference in average flow relative to the baseline (Alt1)." (Exhibit 3 p. 5.) Also habitat restoration actions required in any event "should not be considered voluntary or new contributions to ecosystem lift." (Id.) Finally, while not directly compared within the Staff Report assessment of the total flows that would be expected under the proposed VAs is much less (range of 1-43 percent depending on location/source and water year type) than what would occur under the Proposed Plan Amendments alternative. (Exhibit 3 p. 5.) The voluntary agreements would not protect the endangered and threatened fish species. As pointed out in section 1A(1) of these comments Reclamation's January 19 2024 comment letter (Exhibit 1) on the Water Board's Staff Report/SED claimed that contrary to the Water Board's proposed Plan amendments; the voluntary agreement "alternative appears to be the only	

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	alternative that has a viable path towards implementation." Reclamation's Draft EIS hides from the public that Reclamation plans to march down the path opposite to the path recommended by the Water Board to actually protect the endangered and threatened fish species	
51-5	B. Reclamation's Draft EIS is Inadequate under NEPA because of the Failure of Reclamation to Use is Best Efforts to find out all that it Reasonably Can and Disclose the Relevant Information to the Public The Ninth Circuit said in Ground Zero Center for Non-Violent Action v. United States Department of Navy 860 F.3d 1244 1257 (9th Cir. 2017) "NEPA requires disclosure 'to the fullest extent possible.' 42 U.S.C. 4332." "One of the purposes of an EIS is to ensure full disclosure of the environmental consequences of a project." Columbia Basin Land Protection v. Schlesinger 643 F.2d 585 594 (9th Cir. 1981.) The Supreme Court said in Robertson v. Methow Valley Citizens Council 490 U.S. 332 350 (1989) The sweeping policy goals announced in 101 of NEPA are thus realized through a set of 'action-forcing' procedures that require that agencies take a " 'hard look' at environmental consequences" [citation omitted] and that provide for broad dissemination of relevant environmental information. (Emphasis added.) The Ninth Circuit said in Center for Biological Diversity v. Bernhardt 982 F.3d 723 735 (9th Cir. 2020) "Drafting an EIS 'necessarily involves some degree of forecasting' and the agency 'must use its best efforts to find out all that it reasonably can' when predicting the environmental effects of the proposed action. City of Davis v. Coleman 521 F.2d 661 676 (9th Cir. 1975)."NEPA Regulation 1502.1 [Footnote 1: The NEPA Regulations are codified at 49 C.F.R. 1500.1 et seq.] sets forth the purpose of an EIS. Section 1502.1(b) states in pertinent part Environmental impact statements shall provide full and fair discussion of significant effects and shall inform decision makers	Reclamation has fully complied with the requirements of NEPA and the CEQ regulations in its preparation and disclosure of potential effects on the quality of the human environment. All of the applicable environmental effects of long-term operation of the CVP are fully disclosed in Chapters 4–22 of the Draft and Final EIS. Please refer to those chapters for disclosure of specific effects on including on water quality and aquatic resources. These effects of changes to the long-term operation of the CVP and SWP rely on CalSim 3 and other hydrologic modeling to provide the best available information about potential effects of modifying reservoir storage and releases and streamflow. The SWRCB's Draft Revised Substitute Environmental Document for potential changes to the Bay-Delta Water Quality Control Plan is a separate but related project that was taken into consideration in combination with the LTO proposed action and alternatives in the cumulative impacts discussion for each relevant EIS resource chapter to the extent it could create impacts in combination with the proposed action and other cumulative projects. The comments submitted on the Bay-Delta Staff Report/SED are available from the State Water Resources Control Board upon request by emailing SacDeltaComments@waterboards.ca.gov. For additional information on the State Water Resources Control Board process, please see Standard Response 10, Voluntary Agreements.

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	and the public of reasonable alternatives that would avoid or minimize adverse effects or enhance the quality of the human environment. (Emphasis added.) Section 1502.1(c) provides in pertinent part Environmental impact statements shall be concise clear and to the point and shall be supported by evidence that the agency has made the necessary environmental analyses. An environmental impact statement is more than a disclosure document. (Emphasis added.) The information in the Water Board's Staff Report/SED and the EPA NMFS and CDFW January 19 2024 comment letters on the Staff Report/SED should have been front and center in Reclamation's Draft EIS. Instead all that information was hidden from the public. In addition Reclamation failed to use its best efforts to find out all that it reasonably can about the adverse effects of diversions for Project exports on endangered and threatened fish species. As opposed to requiring best efforts it requires bare minimum effort for Reclamation to get the public comments of sister agencies on the same project Reclamation is commenting on. The Water Board posted all the comments on the Staff Report/SED. Instead of doing what NEPA requires Reclamation hid the information in the Water Board's Staff Report/SED and the EPA NMFS and CDFW comment letters on the Staff Report/SED from the public. Reclamation's Draft EIS did not provide disclosure to the fullest extent possible did not provide broad dissemination of relevant information to the public and did not provide full and fair discussion of significant effects of diversions of freshwater for the CVP and SWP exports on endangered and threatened fish species and their designated critical habitats. Since an EIS is more than a disclosure document it must at least include disclosure.	

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51-6	2. RECLAMATION MUST PREPARE AND PUBLISH A SUPPLEMENTAL DRAFT EIS BECAUSE THE JULY 2024 DRAFT EIS IS SO INADEQUATE AS TO PRECLUDE MEANINGFUL ANALYSIS NEPA Regulation section 1502.9(b) requires in pertinent part "If the agency determines that a draft statement is so inadequate as to preclude meaningful analysis the agency shall prepare and publish a supplemental draft of the appropriate portion. "The first section of these comments sets forth information and attached exhibits from four expert agencies about the bringing of endangered and threatened fish species to levels near extinction or extirpation. They say freshwater flows must be increased which means that exports must be reduced. These expert agencies are the State Water Resources Control Board, Environmental Protection Agency, National Marine Fisheries Service, and California Department of Fish and Wildlife. Reclamation's Draft EIS issued in July 2024 for public review is so inadequate as to preclude meaningful analysis because it fails to include the information provided by the expert agencies. It would be one thing to include the information and then present contrary information by experts amounting to substantial evidence. It is a different thing to simply omit the information provided by the four expert agencies that have things to say that Reclamation and its water contractors do not want to hear. The public is entitled to a full and fair discussion of significant effects of diversions of freshwater for CVP and SWP operations on endangered and threatened fish species. Reclamation must prepare a supplemental Draft EIS that discloses and discusses the information provided by the four expert agencies. The supplemental Draft EIS must also disclose and discuss the expert agencies information that the voluntary agreements are inadequate to protect the endangered and threatened fish species whereas Reclamation claims the voluntary agreements	Refer to Standard Response 1, Response to General Comments and Comments about Public Outreach, and Standard Response 4, Alternatives Formulation, regarding the purpose and need for this multipurpose project. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding comments recommending or requesting that the Draft EIS be revised or supplemented and redistributed for public review. Regarding the information from the State Water Resources Control Board, EPA, NMFS, and CDFW, refer to the prior responses to comments for this letter. Please refer to Standard Response 10, Voluntary Agreements, regarding general concern about voluntary agreements.

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	"alternative appears to be the only alternative that has a viable path towards implementation."	
51-7	3. RECLAMATION MUST PREPARE A SUPPLEMENTAL DRAFT EIS BECAUSE THERE ARE SUBSTANTIAL NEW CIRCUMSTANCES AND INFORMATION ABOUT THE SIGNIFICANCE OF ADVERSE EFFECTS THAT BEAR ON THE ANALYSIS NEPA Regulation section 1502.9(d)(1) requires in pertinent part that agencies (1) Shall prepare supplements to either draft or final environmental impact statements if a major Federal action is incomplete or ongoing and: (ii) There are substantial new circumstances or information about the significance of adverse effects that bear on the analysis. The information from the four expert agencies set forth in the first section of these comments and included in the exhibits is substantial new information about the significance of adverse effects of diversions of freshwater for CVP and SWP operations that bears on the Draft EIS analysis. Though the information existed 6 months before Reclamation issued the Draft EIS it is new since it was not included in the Draft EIS. In addition the information in the Water Board's Staff Report/SED -- which existed 10 months before Reclamation issued its Draft EIS -- also amounts to new circumstances about the significance of adverse effects that bear on the analysis. The proposed Plan amendments require a reduction in exports. There is also significant new information that came into existence after Reclamation issued its Draft EIS. On July 30 2024 the U.S. Fish and Wildlife Service listed Bay-Delta longfin smelt as an endangered species under the federal Endangered Species Act. The citation for the new listing is Endangered and Threatened Wildlife and Plants; Endangered Species Status for the San Francisco Bay-Delta Distinct Population Segment of the Longfin Smelt 89 Fed. Reg. 61209 (July 30 2024.) This rule is effective August 29 2024. Bay-Delta longfin smelt are added to	Please refer to Chapter 12, Aquatics Resources, and Appendix O, Aquatics Resources Technical Appendix, for analysis of impacts of the alternatives on longfin smelt. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding comments recommending or requesting that the Draft EIS be revised or supplemented and redistributed for public review.

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	the list of endangered and threatened wildlife at 50 CFR 17.11(h.) A copy of the Federal Register pages is attached as Exhibit 6. The Service explained We consider reduced and altered freshwater flows resulting from human activities and impacts associated with current climate change conditions (increased magnitude and duration of drought and associated increased temperatures) as the main threat facing the Bay-Delta longfin smelt due to the importance of freshwater flows to maintaining the life-history functions and species needs of the DPS. However because the Bay-Delta longfin smelt is an aquatic species and the needs of the species are closely tied to freshwater input into the estuary the impact of many of the other threats identified above are influenced by the amount of freshwater inflow into the system (i.e. reduced freshwater inflows reduce food availability increase water temperatures and increase entrainment potential). (89 Fed. Reg. at 61039) (Emphasis added.) Under the heading "Reduced and Altered Freshwater Flows" the Service explain the development of dams and water delivery infrastructure built throughout the Sacramento and San Joaquin River basins for flood protection and water supply for agriculture and human consumption has greatly impacted freshwater flows into the San Francisco Bay estuary (Service 2024 section 3.1.1). The creation of this water storage and delivery system where water is stored during the wet season and conveyed to farms and cities during the dry season has resulted in one of the largest human-altered water systems in the world (Nichols et al. 1986 p. 569). Operation of this system has resulted in a broader flatter hydrograph with less seasonal variability thus changing the timing magnitude and duration of freshwater flows into the San Francisco Bay-Delta (Kimmerer 2004 p. 15; Andrews et al. 2017 p. 72; Gross et al. 2018 p. 8). It is estimated that the Federal and State water projects annually reduce an average of about 5 million acre-feet (MAF) of freshwater into the San Francisco Bay Delta while other	

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	municipal or private reservoirs or diverters annually divert an additional 8 MAF of potential freshwater into the San Francisco Bay Delta (Hutton et al. 2017b fig. 4 p. 2523). The cumulative effect of this annual average of about 13 MAF of freshwater supplies has resulted in a long-term decline in freshwater inflow into the estuary during the period of February through June relative to estimates of what flows would have been available absent water development (Gross et al. 2018 fig. 6 p. 12; Reis et al. 2019 fig. 3 p. 12). This situation has further increased the frequency of very low outflow years that prior to water development would have been very rare and associated only with extreme drought (Reis et al. 2019 fig. 3 p. 12). From 1956 to the 1990s water exports (water removed from the San Francisco Bay Delta as a result of State (State Water Project) and Federal (CVP) water projects) increased rising from approximately 5 percent of the Delta freshwater inflow to approximately 30 percent of the Delta inflow (Cloern and Jassby 2012 p. 7). By 2012 an estimated 39 percent of the estuary's unimpaired freshwater flow in total was either consumed upstream or diverted from the estuary (Cloern and Jassby 2012 p. 8). Water exports continue to the present day and are expected to continue in the future. A reduction in freshwater flows into the estuary influences and impacts the location and function of the low-salinity zone (spawning and rearing habitat for longfin smelt). Freshwater inflow into the estuary and other co-linear indicators of wet versus dry conditions during the winter and spring have been statistically associated with recruitment of larvae to the juvenile life stage of Bay Delta longfin smelt (Service 2024 section 3.1.1). Prior to large-scale water exports and reduced freshwater flows the location of the low-salinity zone (as represented by the 2percent bottom salinity position known as X2) reached the 55-km (34-mi) point in the estuary (monthly averages from February through May) and about half	

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	of all years. More recently the position of X2 reaching at least the 55-km (34-mi) point occurred only very rarely as a result of wet year conditions (Gross et al. 2018 fig. 6 p. 12 and fig. 7 p. 13) (Service 2024 section 3.1.1). In the case of Bay-Delta longfin smelt optimal growth and rearing conditions (food and water conditions (salinity turbidity circulation patterns)) especially for early life stage fish is directly linked to freshwater inflow to the estuary. (89 Fed. Reg. at 61039-61040) (Emphasis added.) As to current efforts to save the longfin smelt Delta Smelt and several salmonid species the Service concluded "However despite efforts such as those identified above the current condition of the estuary and continued threats facing the estuary and Bay- Delta longfin smelt such as reduced freshwater inflow severe declines in population size and disruptions to the DPS's [distinct population segment] food resources have not been ameliorated." (89 Fed. Reg. at 61046) (Emphasis added.) The Service concluded as to the threats starting with reduced freshwater flows "These threats have put the Bay-Delta longfin smelt largely into a state of chronic population decline due to habitat loss (reduction in freshwater flows into the estuary) which is exacerbated by limited food resources and the impacts associated with climate change thereby limiting its resiliency and ability to withstand catastrophic events (reduced redundancy). This decline in numbers of the Bay-Delta longfin smelt is also a reflection of the DPS's ability to adapt to the ecosystem changes. (89 Fed. Reg. at 61046) (Emphasis added. The new circumstances and information require preparation of a supplemental Draft EIS. The case law under NEPA is as clear in this regard as the plain language of the supplemental EIS NEPA Regulations. The Supreme Court explained "The CEQ [Council on Environmental Quality] regulations which we have held are entitled to substantial deference [citations omitted] impose a duty on all Federal agencies to prepare supplements to either draft or final	

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	EIS's if there 'are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.'" (Marsh v. Oregon Natural Resources Council 490 U.S. 360 372 (1989); see also Friends of the Clearwater v. Dombeck 222 F.3d 552 557-558 (9th Cir. 2000.) The Ninth Circuit has explained "Given the limited public input opportunities attendant to the issuance of a final EIS satisfying this directive" requiring agencies to submit proposed actions for public comment prior to making a final decision requires a supplemental draft EIS when necessary to allow outside reviewers to give meaningful consideration to the environmental issues involved. (State of California v. Block 690 F.2d 753 770 (9th Cir.1982.) (Requiring preparation and circulation of a supplemental draft EIS.) Additional pertinent cases requiring agencies to prepare a supplemental EIS include: New Mexico ex rel. Richardson v. Bureau of Land Management 565 F.3d 683 707-707 (10th Cir. 2009) (Supplemental EIS required "Informed public input can hardly be said to occur when major impacts of the adopted alternative were never disclosed"); Illio'ulaokalani Coalition v. Rumsfeld 464 F.3d 1083 1102 (9th Cir. 2006) (Requiring analysis of alternative locations for an Army brigade in a supplemental EIS); Sierra Club v. U.S. Army Corps of Engineers 701 F.2d 1011 1034-1035 (2d Cir. 1983) (Upholding district court ruling that the Corps of Engineers or the Federal Highway Administration prepare a supplemental or amended EIS on fisheries issues.) The purpose of NEPA the NEPA Regulations and the NEPA cases are clear. Reclamation must prepare a supplemental Draft EIS so the public will have the opportunity to review and comment on the assessment of the environmental impacts of Project operations on endangered and threatened fish species that must be but was not provided by the July 2024 Draft EIS.	

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51-8	4. THE DRAFT EIS FAILS TO INCLUDE THE REQUIRED RANGE OF REASONABLE ALTERNATIVES NEPA requires an EIS to include "a reasonable range of alternatives to the proposed agency action.." (42 U.S.C. 4332(C)(iii.)). Moreover NEPA expressly requires Federal agencies to "study develop and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. 4332(E). NEPA Regulation 1502.14 requires that the EIS "analysis should sharply define the issues for the decision-maker and the public and provide a clear basis for choice among options." Section 1502.14(a) requires that the EIS include "a reasonable range of alternatives that will foster informed decision-making." Section 1502.1(b) states the purpose of an EIS includes informing "decision makers and the public of reasonable alternatives that would avoid or minimize adverse effects or enhance the quality of the human environment..” An obvious reasonable alternative would be the proposed Plan amendments set forth in section 7.1 of the Staff Report/SED (pp. 7.1-1 to 7.1-52) by the Water Board in September 2023--10 months before Reclamation issued the Draft EIS. As pointed out at the beginning of section 1A(1) of these comments Reclamation submitted a comment letter on January 19 2024 on the Staff Report/SED disagreeing with the proposed Plan amendments calling instead for the so-called voluntary agreements alternative. The expert Water Board proposed Plan amendments alternative should have been but was not included by Reclamation as an alternative in the Draft EIS. As pointed out at the end of section 1A(1) of these comments the proposed Plan amendments alternative includes specific export reductions in the different types of water years such as 707 thousand acre-feet in dry years to the San Joaquin Valley region and 673 thousand acre-feet to the Southern California region. There is	Refer to Standard Response 4, Alternatives Formulation, for additional information regarding the rigorous approach Reclamation undertook for formulation of alternatives and the reasonable range of alternatives. The SWRCB process is a separate process not suitable for inclusion as an alternative to operate the CVP. The commenter’s input is noted and included in the record for consideration by decisionmakers.

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	more. The January 19 2024 comment letters by the expert EPA National Marine Fisheries Service and California Department of Fish and Wildlife strongly support increasing flows to the extent or even greater than that set forth in the Water Board's proposed Plan amendments. As set forth in section 3 of these comments the U.S. Fish and Wildlife Service July 30 2024 listing of Bay-Delta longfin smelt as an endangered species establish that the reduction in freshwater flows by the CVP and SWP are a significant cause of the species becoming endangered. That Reclamation and its contractors do not want to reduce exports does not permit the failure to include an obvious reasonable alternative the Water Board's proposed Plan amendments--in the Draft EIS. The Water Board's Staff Report/SED handed to Reclamation on a silver platter should have been the basis of a Draft EIS alternative. Another reasonable alternative left out of the Draft EIS is the Staff Report/SED "High Flow Alternative (Alternative 3)" described in section 7.2.3.4. (Staff Report/SED pp. 7.2-7 to 7.2-9.) "The numeric inflow objective and Delta outflow objective under the High Flow Alternative would require a larger amount of inflow to the Delta and required Delta outflows would be greater than those under the proposed Plan amendments." (Staff Report/SED p. 7.2-7.) The Water Board alternatives were actually concealed from the public because Reclamation's Draft EIS as pointed out at the beginning of section 1A(1) of these comments did not even disclose the existence of the Staff Report/SED. The Draft EIS does include an "Alternative 3" which would provide additional Delta outflow. (Draft EIS pp. 3-60 to 3-75.) That is Reclamation's only alternative which would provide significant additional Delta outflow in an effort to protect endangered and threatened fish species. There is no disclosure however of the Water Board's proposed Plan amendments alternative. There is also no disclosure of the Water Board's "High Flow Alternative" described in the Staff Report/SED at pp.	

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	7.2-7.-9. The Draft EIS should have included a broader range of alternatives increasing flows including the Water Board's alternatives and the public trust alternative discussed in the next section of these comments. An alternative proposed by the expert Water Board and supported by the expert EPA National Marine Fisheries Service and California Department of Fish and Wildlife comes with significant force and expertise. By failing to include or even reference the Water Board's proposed Plan amendments alternatives Reclamation's Draft EIS failed to "sharply define the issues for the decision maker and the public and provide a clear basis for choice among options" contrary to NEPA Regulation 1502.14. By omitting the Water Board proposed Plan amendments alternatives Reclamation failed to include the "reasonable range of alternatives that will foster informed decision making" required by NEPA Regulation 1502.14 (A.) The Ninth Circuit Court of Appeals reversed a district court's denial of summary judgment to environmental plaintiffs where Reclamation had failed to sufficiently analyze alternatives. Pacific Coast Federation of Fishermen's Assn's v. U.S. Dep't of the Interior 655 Fed. Appx. 595 (9th Cir. No. 14-15514 July 25 2016) (not selected for publication). The challenged environmental document in Pacific Coast issued by Reclamation under NEPA for eight interim CVP contracts included Westland's Water District's interim contract for two-year interim contract renewals. "Reclamation's decision not to give full and meaningful consideration to the alternative of a reduction in maximum interim contract water quantities was an abuse of discretion and the agency did not adequately explain why it eliminated this alternative from detailed study." Id. at 599. Reclamation's "reasoning in large part reflects a policy decision to promote the economic security of agricultural users rather than an explanation of why reducing maximum contract quantities was so infeasible as to preclude study of its environmental impacts."	

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	Id. at 600. The Ninth Circuit's unpublished decision is consistent with California v. Block 690 F.2d 753 765-769 (9th Cir. 1982) where the project at issue involved allocating to wilderness non-wilderness or future planning remaining roadless areas in national forests throughout the United States. Like the situation here where a trade-off is involved between water exports and saving listed fish species the Forest Service program involved "a trade-off between wilderness use and development. This trade-off however cannot be intelligently made without examining whether it can be softened or eliminated by increasing resource extraction and use from already developed areas." 690 F.2d at 767. Here likewise trade-offs cannot be intelligently analyzed without examining whether the impacts of an alternative reducing exports can be softened or eliminated by increasing water conservation and recycling and retiring drainage-impaired agricultural lands in the areas of the exporters from production. Accord Oregon Natural Desert Assn.v. Bureau of Land Management 625 F.3d 1092 1122-1124 (9th Cir. 2010) (uncritical alternatives analysis in EIS privileging one form of use over another violated NEPA). The State of California released the Water Resilience Portfolio prepared by the California Natural Resources Agency CalEPA and the California Department of Food & Agriculture on July 28 2020. The Water Resilience Portfolio explains (at p. 18) "The most cost-effective environmentally beneficial way to stretch water supplies is through better water use efficiency and eliminating water waste. Many California communities have made great progress in reducing per capita water use in recent decades. “Reclamation’s failure to include or even disclose the existence of the Water Board's proposed Plan amendments alternative also constituted failure to use Reclamation's best efforts to find out all that it reasonably can and disclose relevant information to the public as set forth in section 1B of these comments. The absence of the	

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	required range of reasonable alternatives in the Draft EIS also requires Reclamation to prepare and publish a supplemental Draft EIS as set forth in sections 2 and 3 of these comments.	
51-9	5. RECLAMATION FAILED TO INCLUDE THE PUBLIC INTEREST ALTERNATIVE WHICH IS A REASONABLE ALTERNATIVE SUBMITTED TO RECLAMATION DURING THE SCOPING PROCESS On March 29 2022 Sierra Club California and 8 other public interest organizations submitted written scoping comments on Reclamation's Notice of Intent to prepare the EIS. A copy of the comment letter is attached as Exhibit 7. The comment letter included a proposed alternative entitled the "Public Interest Alternative." The alternative is repeated here exactly as it appeared in the comment letter" II. THE PUBLIC INTEREST ALTERNATIVET he remaining sections and subsections of these comments will explain why the Public Interest Alternative provisions set forth here are required. The Public Interest Alternative provisions required to be included in or with the Draft EIS are as follows: 1. The Draft EIS must include quantification to determine how much water is actually available in contrast to the "paper water" which is estimated to be five times more than real water. 2. The Draft EIS must include accurate scientific analysis of the environmental impacts of CVP and SWP Long-Term operation and their impacts on endangered and threatened fish species and their critical habitat. 3. The Draft EIS must include accurate scientific analysis to determine what stream river and Delta flows are necessary under various conditions to avoid jeopardy to endangered and threatened fish species and adverse modification of their critical habitat. The required protective flows have priority over CVP and SWP contractual quantities. 4. The Draft EIS must include accurate scientific analysis to determine whether diversions and exports comply with California's Constitutional prohibition of	Refer to Standard Response 4, Alternatives Formulation, for additional information regarding the rigorous approach Reclamation undertook for the formulation of alternatives and the range of alternatives. The Modified Natural Hydrograph Alternative (Alternative 3) includes actions developed with the environmental NGOs through discussions with Reclamation. Reclamation met with several environmental NGOs approximately monthly for the development of this alternative. The alternative described in this comment does not meet the screening criteria as it is not sufficiently developed beyond an array of concepts and in its current form is not technically and/or economically feasible.

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	unreasonable use and waste including but not limited to diversions and exports for agricultural lands in the southern San Joaquin Valley including drainage impaired lands. The analysis will include reducing diversions and exports as a result of technological innovations such as conservation recycling drip irrigation and less water intensive agricultural use reducing the need for the diversions and exports. 5. The Draft EIS must include accurate scientific analysis to perform public trust doctrine analysis and balancing of CVP and SWP diversions and exports compared to their adverse impacts on public trust resources. 6. The Draft EIS must include accurate scientific analysis of adverse environmental impacts of CVP and SWP diversions on public health including but not limited to worsening algal blooms adversely impacting the environmental justice communities of the Delta 7. The Draft EIS must include accurate scientific analysis of adverse environmental impacts of any "Potential new storage conveyance and other water supply infrastructure" (Reference NOI 87 Fed. Reg. 11095.) 8. The Draft EIS must include cost-benefit analysis of any "Potential new storage conveyance and other water supply infrastructure" (Reference NOI 87 Fed. Reg. 11095.) 9. Reclamation will reduce diversions and exports to avoid jeopardy to endangered and threatened fish species and adverse modification of their critical habitat. 10. Reclamation will reduce diversions and exports to avoid adverse impacts on public health including but not limited to worsening algal blooms adversely impacting the environmental justice communities of the Delta. 11. Reclamation will reduce diversions and exports to eliminate unreasonable use and waste turning to modern water measures including conservation recycling desalination and agricultural water conservation. 12. Reclamation will stop providing Project water to impaired farmlands on the west side of the San Joaquin Valley and the Tulare Basin. 13. Reclamation will reduce diversion and	

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	export quantities by not providing water for high water-demand permanent crops especially on the west side of the San Joaquin Valley and the Tulare Basin. 14. Reclamation will reduce diversions and exports to comply with California's Delta Reform Act. 15. Reclamation will reduce diversions and exports to reduce or eliminate adverse impacts on public trust resources. 16. Reclamation will Include in the Draft EIS these resilient resource strategies to save water. "MAF" means million acre-feet/year. [See original attachment for table set up: Resource Strategy | Water Savings/Supplies (MAF/year)Ag Water Use Efficiency: 5.6-6.6 MAF Urban Water Use Efficiency: 2.9-5.2 MAF Recycled Municipal Water: 1.2-1.8 MAF Stormwater Capture: 0.4-2.0 MAFTOTAL: 10.1-14.2 MAF] These resilient water strategies are part of the Public Interest Alternative and would save between 10.1 and 14.2 million acre-feet of water per year [Footnote 2: The SMART Alternative to Tunnel(s): A Sensible Water Management Portfolio at p. 2 Sierra Club California (May 2019) referencing Peter Glick et al. The Untapped Potential of California's Water Supply: Efficiency Reuse and Stormwater. Pacific Institute and Natural Resources Defense Council June 2014. Available at https://pacinst.org/wp-content/uploads/2014/06/ca-water-capstone.pdf.].17. All of the accurate scientific analysis and information developed for the above Public Interest Alternative provisions will be disclosed and included in the Draft EIS. Again this Public Interest Alternative --must be identified -- in the Draft EIS summary. NEPA Regulation 1502.17(a.) And these comments must be appended to the Draft EIS or otherwise published by Reclamation. NEPA Regulation 1502.17(a.)" (Sierra Club California et al. comment letter pp. 6-9 March 29 2022.) The Public Interest Alternative as well as the Water Board's proposed Plan amendments alternative and Water Board High Flow Alternative 3 are reasonable alternatives which Reclamation hid instead of including them in the Draft EIS to further its scheme	

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	to avoid and hide from the public alternatives that would reduce exports in order to increase freshwater flows to protect endangered and threatened fish species.	
51-10	There is more. Sierra Club California et al. requested Reclamation to confirm receipt of their March 29 2022 comment letter. Reclamation did confirm receipt by reply email on March 30 2022. The text of the email confirmation is copied into a Word document attached as Exhibit 8. The very first paragraph of the comment letter stated an "alternative entitled the Public Interest Alternative" was included. (Exhibit 8 p. 2.) The second listing in the comment letter's table of contents was "II. THE PUBLIC INTEREST ALTERNATIVE." (Exhibit 8 p. 2.) The second sentence in the comment letter informed Reclamation that "The National Environmental Policy Act (NEPA) Regulations require the Draft Environmental Impact Statement (EIS) to be prepared by Reclamation to "include a summary that identifies alternatives information and analyses submitted by public commenters during the scoping process for consideration by the lead and cooperating agencies in developing the environmental impact statement." 40 C.F.R. 1502.17(a.) Reclamation however ignored the comment letter the Public Interest Alternative the NEPA Regulations and the citation to those regulations at the beginning of the comment letter. Reclamation did not include a summary of the comment letter including the alternative submitted did not append the comment letter to the Draft EIS and did not include the comments or a summary thereof in the appendixes Reclamation prepared. Consequently Reclamation violated NEPA Regulations 1502.17(a) and (b) and 1502.19(d.) Those regulations are quoted below in section 10 of these comments.	Please see Standard Response 4, Alternatives Formulation, regarding the development of alternatives. A description of the Draft Alternatives considered, including those received on the Notice of Intent, is provided in Appendix E, Draft Alternatives. This appendix indicates that all of the potential alternatives received were considered in development of the alternatives evaluated further in the Draft EIS. Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the consideration of scoping comments in the development of the EIS. As described in Standard Response 1, the scoping report is included in the Final EIS. The Final EIS includes the scoping report as Appendix AE.
51-11	6. THE DRAFT EIS FAILS TO INCLUDE THE REQUIRED ANALYSIS OF POSSIBLE CONFLICTS BETWEEN THE PROPOSED ACTION	Regarding consistency with “Potential Updates to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San

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	AND THE OBJECTIVES OF STATE AND FEDERAL PLANS POLICIES AND CONTROLS FOR THE AREA CONCERNED NEPA Regulation 1502.16(a)(4) requires in pertinent part that an EIS "shall include an analysis of:"(4) Where applicable possible conflicts between the proposed action and the objectives of Federal regional State Tribal and local plans policies and controls for the area concerned including those addressing climate change (1506.2() of this subchapter); Reclamation's Draft EIS failed to even disclose let alone analyze possible conflicts between the proposed action and the objectives of Federal and State plans policies and controls for the area concerned. A. Water Board and Other Federal Agency Plans Policies and Controls Not Analyzed for Possible Conflicts As explained in section 1A(1) of these comments Reclamation knew about the Water Board's proposed Plan amendments set forth in its Staff Report/SED commenting on it on January 19 2024 6 months before Reclamation issued its Draft EIS. Moreover Reclamation knew that diversions for CVP operations were in conflict with the proposed Plan amendments setting forth its opposition to any Water Board alternative other than the voluntary agreement alternative which was not the Staff Report/SED recommended alternative. The Staff Report/SED constitutes the objectives of the State policies and controls for the area concerned. The Draft EIS is insufficient as a matter of law because it fails to analyze the possible conflicts between the proposed action and the policies and controls set forth by the Water Board. The Draft EIS is likewise insufficient because it fails to analyze the possible conflicts between the proposed action and the objectives of Federal policies and controls for the area concerned. The EPA objectives were explained in section 1A(2) of these comments. The National Marine Fisheries Service objectives were set forth in section 1A(3) of these comments. The U.S. Fish and Wildlife Service objectives were set forth in section 3 of these comments.	Joaquin Delta Estuary for the Sacramento River and its Tributaries, Delta Eastside Tributaries, and Delta," these updates are still in progress and have not been adopted (see https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/). They are therefore considered in the cumulative analysis for the alternatives, as listed in Table Y-2 in Appendix Y. The commenter refers to the EPA standards; however, the material provided in the letter does not contain standards and is instead EPA's comment on the State Water Resources Control Board's "Draft Staff Report in support of updates to the Water Quality Control Plan for the San Francisco Bay-Sacramento-San Joaquin Delta Estuary for the Sacramento River and Delta watersheds." Similarly, the NMFS material quoted by the commenter is that agency's comments on the Staff Report/SED and does not contain standards. Regarding the USFWS material, see the prior response regarding longfin smelt. Refer to Standard Response 2, Related Regulatory Responses, which addresses the applicability of the California Endangered Species Act.

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	B. California Endangered Species Act Not Analyzed for Possible Conflicts The Draft EIS Fails to Include a California Endangered Species Act (CESA) focused alternative. The California Supreme Court said in Mountain Lion Foundation v. Fish and Game Com. (1997) 16 Cal.4th 105 125 "For example CESA establishes a policy adding significant weight to the CEQA balancing scale on the side favoring protection of a listed species over projects that might jeopardize them or their habitats. (Fish & G. Code 2053.)" Fish and Game Code section 2053 states "Legislative findings and declarations; alternative state agency projects" as follows ``The Legislature further finds and declares that it is the policy of the state that public agencies should not approve projects as proposed which would jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy. Furthermore it is the policy of this state and the intent of the Legislature that reasonable and prudent alternatives shall be developed by the department together with the project proponent and the state lead agency consistent with conserving the species while at the same time maintaining the project purpose to the greatest extent possible. (Emphasis added.) CEQA establishes the policy of the state to "Prevent the elimination of fish or wildlife species due to man's activities insure that fish and wildlife populations do not drop below self-perpetuating levels and preserve for future generations representations of all plant and animal communities and examples of the major periods of California history." (Pub. Res. Code 21001(c).) Despite the listing of endangered and threatened fish species and their ever worsening condition including the California Department of Fish	

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	and Wildlife not being able to find any Delta Smelt in its searches for them over the past seven years and the new federal listing of Longfin Smelt as endangered the Draft EIS does not include those alternatives devoted to conserving the listed fish species and their habitat which would prevent jeopardy such as the Water Board's proposed Plan amendments and also Staff Report/SED "High Flow Alternative (Alternative 3). (Staff Report/SED pp. 7.2-7 to 7.2- 9.) The Draft EIS fails to even disclose let alone analyze the possible conflicts between the proposed action and the policies and controls of the California Endangered Species Act.	
51-12	C. Delta Reform Act Not Analyzed for Possible Conflicts The policy of the State of California is set forth in the Sacramento-San Joaquin Delta Reform Act of 2009 (Delta Reform Act) Water Code section 85000 et seq. Pursuant to the Delta Reform Act the established State policy is "to reduce reliance on the Delta in meeting California's future water supply needs through a statewide strategy of investing in improved water supplies conservation and water use efficiency." (Water 30 Code 85021) (Emphasis added.). Another policy established by the Act is to "Restore the Delta ecosystem including its fisheries and wildlife as the heart of a healthy estuary and wetland ecosystem." (Water Code 85020(c.)) "'Coequal goals' means the two goals of providing a more reliable water supply for California and protecting restoring and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural recreational natural resource and agricultural values of the Delta as an evolving place." (Water Code 85054) (Emphasis added.) The Draft EIS includes no alternative focused on reducing reliance on the Delta. The Draft EIR includes no alternative focused on restoring the Delta ecosystem including its fisheries and wildlife. No	Please refer to Standard Response 1, Responses to General Comments, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Also refer to Standard Response 2, Related Regulatory Responses, regarding Reclamation's compliance with applicable laws and regulations. Reclamation is a federal agency and follows applicable federal laws and regulations. Refer to Chapters 4–22 regarding the analysis of potential environmental effects related to the Delta Reform Act. Specifically, please refer to Chapter 6, Recreation. Please refer to Standard Response 1, Responses to General Comments, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Also refer to Standard Response 2, Related Regulatory Responses, regarding Reclamation's compliance with applicable laws and regulations. Reclamation is a federal agency and follows applicable federal laws and regulations.

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	alternative is included requiring water conservation recycling and greater water use efficiency to reduce the claimed need for exports. The Draft EIS fails to even disclose let alone analyze possible conflicts between the Delta Reform Act policies and controls and the proposed action.	Refer to Chapters 4–22 regarding the analysis of potential environmental effects related to the Delta Reform Act. Specifically, please refer to Chapter 6, Recreation; Chapter 8, Cultural Resources; Chapter 12, Fish and Aquatic Resources; Chapter 13, Terrestrial Biological Resources; and Chapter 15, Land Use and Agricultural Resources, for discussions related to potential impacts of the project on each environmental resource identified by the commenter. Please refer to Chapter 3, Alternatives, and Appendix E, Draft Alternatives, regarding the development of the alternatives analyzed in the EIS. Please also refer to Standard Response 4, Alternatives Formulation, regarding the formulation of alternatives.
51-13	D. The Public Trust Doctrine Not Analyzed for Possible Conflicts The Delta Reform Act mandates "The longstanding constitutional principle of reasonable use and the public trust doctrine shall be the foundation of state water management policy and are particularly important and applicable to the Delta." (Water Code 85023) (Emphasis added.) The California Supreme Court made it clear in the Mono Lake case National Audubon Society v. Superior Court (1983) 33 Cal.3d 419 446 that "The state has an affirmative duty to take the public trust into account in the planning and allocation of water resources and to protect public trust uses whenever feasible." (Emphasis added.) Moreover Once the state has approved an appropriation the public trust imposes a duty of continuing supervision over the taking and use of the appropriated water. In exercising its sovereign power to allocate water resources in the public interest the state is not confined by past allocation decisions which may be incorrect in light of current knowledge or inconsistent with current needs. The state accordingly has the power to reconsider allocation decisions even though those	Please refer to Standard Response 2, Related Regulatory Processes, regarding DWR compliance with CEQA. The Bureau of Reclamation is a federal agency and follows applicable laws and regulations. Refer to Chapters 4–22 regarding the analysis of potential environmental effects, which includes resources held in trust by the federal government. Analyzing past allocation decisions is not within the scope of this EIS.

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	decisions were made after due consideration of their effect on the public trust. The case for reconsidering a particular decision however is even stronger when that decision failed to weigh and consider public trust uses. (National Audubon 33 Cal.3d 419 447) (Emphasis added.) According to the Draft EIS a claimed purpose and need for the proposed action "is to continue the operation of the CVP and the SWP for authorized purposes in a manner that: Satisfies Reclamation contractual obligations and agreements;.." (Ch. 2 p. 2-1.) Reclamation however did nothing to consider whether the allocation decisions made back in the 1960s may be incorrect in light of current knowledge about reduced freshwater supplies due to climate change on the one hand and/or current uses or methods of use being unreasonable on the other hand. Reclamation did nothing to consider whether the past allocation decisions are inconsistent with current needs. The United States Supreme Court recognizes that "the States retain residual power to determine the scope of the public trust over waters within their borders." PPL Mont. LLC v. Montana 565 U.S. 576 604 (2012). And "running waters cannot be owned whether by a government or by a private party." Sturgeon v. Frost 587 U.S. 28 42 (2019.) Chapter 2 of the Water Board's Staff Report/SED points out the "paper water" problem with the Sacramento/Delta watershed being over authorized for diversion by a total volume over 5 times the total annual average unimpaired outflow for the watershed. Specifically A review of the water right records in the Sacramento/Delta watershed included in the demand dataset shows that the total volume of water authorized for diversion in the Sacramento/Delta watershed exceeds the annual average unimpaired outflow from the Bay-Delta watershed. The total average unimpaired outflow from the Bay-Delta watershed is about 28.5 MAF [million acre-feet]/yr. The face value or total volume of water authorized for diversion of the active consumptive post-1914 appropriative	

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	water right records in the Sacramento/Delta watershed is approximately 159 MAF/yr (Table 2. 7-1a) which is over five times the total annual average unimpaired outflow for the entire Bay-Delta watershed. This total face value amount excludes statements of diversion and use (including riparian and pre-1914 appropriative claims) which are not assigned a face value amount but account for many of the water right records in the Sacramento/Delta watershed. (Ch. 2 p. 2-117) (Emphasis added.) Current CVP and SWP authorized contract quantities have no basis in reality because they are not based on water quantities that actually exist. The Draft EIS failed to even disclose let alone analyze whether past water allocation decisions are incorrect in light of current knowledge or inconsistent with current needs. Consequently the Draft EIS failed to analyze possible conflicts between the proposed action and California's public trust doctrine.	
51-14	E. The Principle of Reasonable Use Not Analyzed for Possible Conflicts The Delta Reform Act mandates "The longstanding constitutional principle of reasonable use and the public trust doctrine shall be the foundation of state water management policy and are particularly important and applicable to the Delta." (Water Code 85023) (Emphasis added.) As just one example of applicable State law Article X of the California Constitution states It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable and that the waste or unreasonable use or unreasonable method of use of water be prevented and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.	Please refer to Standard Response 1, Responses to General Comments, regarding the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements and regarding the Bureau of Reclamation's compliance with applicable laws and regulations, including Reclamation's water rights. The Bureau of Reclamation is a federal agency and follows applicable federal laws and regulations. The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the proposed action and the alternatives. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. Analyzing past allocation decisions is not within the scope of this EIS.

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	The right to water or to the use or flow of water in or from any natural stream or watercourse in this State is and shall be limited to such water as shall be reasonably required for the beneficial use to be served and such right does not extend to the waste or unreasonable use or unreasonable method of use or unreasonable method of diversion of water (Cal. Const. art. X 2)(Emphasis added.) The state Water Code reaffirms the Constitutional policy in substantially the same language. (Water Code 100.) Reclamation has frozen water allocations to the existing contractual allocations for water contractors. There should have been scrutiny of whether exports can be reduced as certain uses or methods of use have become unreasonable because of current and forecasted shortages of available water caused by climate change on the one hand and technological improvements and innovations such as conservation recycling and drip irrigation on the other hand. The Draft EIS should have but did not disclose and analyze possible conflicts because of unreasonable use or unreasonable method of use of CVP and SWP exports and the proposed action.	
51-15	F. The Central Valley Project Improvement Act and the ESA Not Analyzed for Possible Contacts The purposes of the Central Valley Project Improvement Act CVPIA Pub. L. No. 102-575 106 Stat. 4706 section 3402 include: "(a) to protect restore and enhance fish wildlife and associated habitats in the Central Valley and Trinity River basins of California; (b) to address impacts of the Central Valley Project on fish wildlife and associated habitats;..(e) to contribute to the State of California's interim and long-term efforts to protect the San Francisco Bay-Sacramento San Joaquin Delta Estuary; (f) to achieve a reasonable balance among competing demands for use of Central Valley Project water including the requirements of fish and wildlife agricultural municipal and industrial and power contractors." Section 3406(b)	Please refer to Appendix C, Facilities Description for a discussion of the applicable laws and regulations regarding operation of CVP facilities, including requirements of CVPIA. Please refer to Standard Response 2, Related Regulatory Processes, regarding the Bureau of Reclamation's compliance with applicable laws and regulations. Reclamation is a federal agency and follows applicable laws and regulations. Please also refer to Standard Response 7, Aquatic Resources, regarding general concern for adverse effects on aquatic resources, including salmonids and sensitive fish species of the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-

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	106 Stat. 4714 of the CVPIA requires operation of the CVP "to meet all obligations under State and Federal law including but not limited to the Federal Endangered Species Act (Emphasis added.) Section 3404(c)(2) 106 Stat. 4709 of the CVPIA requires the administration of "all existing new and renewed contracts in conformance with the requirements and goals of this title." Section 7(a)(2) of the ESA requires federal agencies to "insure that any action authorized funded or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species determined to be critical 16 U.S.C. 1536(a)(2). The ESA's "no-Jeopardy mandate applies to every discretionary agency action--regardless of the expense or burden its application might impose." National Association of Home Builders v. Defenders of Wildlife 551 U.S. 644 671 (2007) (Emphasis in original.) Endangered and threatened fish species and their critical habitat still exist and are jeopardized and their critical habitats are adversely modified by the operation of the CVP and SWP Reclamation's Draft EIS was required to but did not include an analysis of possible conflicts between the proposed action and the requirements of the CVPIA and the ESA. Reclamation's Draft EIS failed to even disclose let alone analyze the possible conflicts between the proposed action and the objectives of Federal and State policies and controls for the subject water resources. The Draft EIS fails to comply with NEPA Regulation 1502.16(a)(4.) This omission also requires preparation of a supplemental Draft EIS.	Delta), that could potentially result from the alternatives. The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the proposed action and the action alternatives. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. Additionally, Reclamation is currently in formal consultation with USFWS and NMFS to comply with the ESA. The Record of Decision for this effort will include both the NEPA and ESA compliance documentation.
51-16	7. THE DRAFT EIS FAILS TO COMPLY WITH NEPA IN ANALZING PROJECT IMPACTS ON THE ENDANGERED AND THREATENED FISH SPECIES A. The Draft EIS Provides Virtually No Meaningful Information about the Impacts of Diversions of Freshwater for Project	40 Code of Federal Regulations Section 1502.7 requires that the main chapters of final environmental impact statements shall not exceed 300 pages. It was not possible to fit the content of all lines of evidence with detailed impact analyses by each species and life stage from Appendix O, Aquatic Resources Technical Appendix,

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	Operations on the Endangered and Threatened Fish Species Alternative 2B is the preferred alternative. (Draft EIS Executive Summary p. 0- 4.) According to the Draft EIS Alternative 2B is anticipated to result in changes on Delta exports from more restrictive QWEST criteria. Alternative 2B also includes an extension of the CCF operation period to December 1 through March 31 from mid-December through mid-March effectively increasing the operation of the SWP by one month. These components were not available in time to be included in quantitative modeling. (Draft EIS Executive Summary p. 0-3.) So the Draft EIS fails to include quantitative modeling for the preferred alternative. For Winter-run Chinook salmon while the Draft EIS gives minimal information on the other alternatives; no such information is given at all on preferred alternative 2B. Information on preferred alternative 2B for the other listed fish species is likewise absent from the Draft EIS. Also the subject of Draft EIS Chapter 3 is the "Draft Alternatives." (Draft EIS Ch. 3 p. 3-1.) There is no section in Chapter 3 on preferred alternative 2B. An EIS must include quantification if it is to serve any purpose for an ESA evaluation. (See Center for Biological Diversity v. Bernhard 982 F.3d 723 747-750 (9th Cir. 2020.) There is material with quantitative modeling results in the appendixes. That material shows that every Reclamation alternative except alternative 3 will cause adverse impacts to the endangered and threatened fish species. Reclamation's quantitative material in the appendixes should have been disclosed in the appropriate Draft EIS Chapter. Draft EIS Chapter 12 says that for Winter-run Chinook salmon the no action alternative "is expected to have an adverse to beneficial impact on juvenile and adult life stages that varies by the component." (Draft EIS Ch. 12 p. 12-46.) That same identical uninformative "information" is given for the other 5 listed for species discussed here. (Spring-run Chinook salmon p. 12-49 steelhead p. 12-50 Green sturgeon p. 12-51 Delta smelt p.	within these requirements. Please refer to Standard Response 7, Aquatic Resources, for a detailed description of the structure of the Draft EIS. Alternative 2B built on the analysis for Alternative 2. The Final EIS contains updated modeling for Alternative 2 that includes the assumptions and actions of Alternative 2B. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.

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	12-53 and Longfin smelt p. 12-55.) Chapter 12 says that alternative 2 "is expected to have an adverse or beneficial impact from increased and decreased entrainment of juvenile LAD winter-run Chinook salmon (predicted average December through April monthly salvage at the Delta fish collection facilities range." (Id.) The Draft EIS Executive Summary informs that "in drier years Alternative 2 reduces fall and winter releases and reduces survival during migration." (Draft EIS Executive Summary p. 0-22.) These comments include Draft EIS information about alternative 2 because preferred alternative 2B "is derived from alternative 2.." (Draft EIS Executive Summary p. 0-3.) For Spring-run Chinook salmon Draft EIS Chapter 12 says alternative 2 "is expected to have beneficial and adverse impacts from decreased and increased entrainment (predicted average March through June monthly salvage at the Delta fish collection facilities range.." (Draft EIS Ch. 12 p. 12-49.) According to the Draft EIS Executive Summary with respect to the no action alternative "Whiskeytown Reservoir summer and fall operations may adversely or beneficially impact spring-run Chinook salmon; potential adverse impacts include low flows and elevated water temperatures in Clear Creek while potential beneficial impacts include cold water releases to reduce thermal stress during holding spawning and egg incubation." (Draft EIS Executive Summary p. 0-25.) With respect to alternative 2 "adverse impacts on juvenile stranding in drier water year types may occur. In Clear Creek operations would adversely impact spawning and rearing habitat." (Draft EIS Executive Summary p. 0-26.) For California Central Valley Steelhead alternative 2 "is expected to have beneficial and adverse impacts from decreased and increased entrainment (predicted average March through June monthly salvage at the Delta fish collection facilities range all non-critically dry water year types and critically dry water year type: 1 3544 fish 7 105 fish) and a negligible to beneficial	

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	impact on survival of outmigrating juveniles (mean predicted survival to Chipps Island range all non-critically dry water year types and critically dry water year type: 0.182 0.328 0.134 0.143)." (Draft EIS Ch. 12 p. 0-50.) According to the Executive Summary "Survival of out migrating juveniles would increase or decrease dependent on Delta inflow conditions." (Draft EIS Executive Summary p. 0-28.) For Delta smelt alternative 2 "For population abundance there are expected adverse to beneficial impacts on the population growth rate (LCME: Geometric mean of predicted population growth rate of wet and above normal water year types and below normal dry and critically dry water year types: 1.24 (Wet and Above Normal) 1.28 (Wet and Above Normal) 0.74 (Below Normal Dry and Critically Dry) 0.74 0.77 (Below Normal Dry and Critically Dry) Figure 12-4). (Draft EIS Ch. 12 p. 12-53.)" For Longfin smelt alternative 2 is expected to have "adverse to beneficial impacts to larvae (Neutrally buoyant particle fate by inflow bin entrained at exports: 45% hihi 90% hilo; neutrally buoyant particle fate by OMR bins entrained at exports 56% at -2000 cfs 79% at -5000 cfs) and adverse to beneficial impacts to juveniles resulting from increased and decreased entrainment (April May predicted juvenile longfin smelt salvage range all non-critically dry water year types and critically dry water year type: 1403 3757 fish 1110 1170 fish)." (Draft EIS Ch. 12 p. 12-56.) According to the Executive Summary "Alternative 2 is expected to increase entrainment in all water years except in a dry year." (Draft EIS Executive Summary p. 0-31.) Also "adverse and beneficial impacts are anticipated related to population abundance." (Id.)	
51-17	B. The Omission of Required Information about the Adverse Impacts of Diversions of Freshwater for Project Operations on Endangered and Threatened Fish Species Violates NEPA	For context, the statue referenced by the commenter provides an overview of the components required of an EIS. Please also refer to Chapter 22, Resources Not Analyzed in the EIS, which describes Reclamation's process for identifying potentially significant

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	NEPA requires an EIS to include a detailed statement on "reasonably foreseeable environmental effects of the proposed agency action;" (42 U.S.C. 4332(C)(i.) The EIS must also include "any reasonably foreseeable adverse environmental effects which cannot be avoided should the proposal be implemented;" (42 U.S.C. 4332(C)(ii.) The NEPA Regulations require an "environmental consequences section" including analysis of "Any adverse environmental effects that cannot be avoided should the proposal be implemented" and "Any irreversible or irretrievable commitments of Federal resources that would be involved in the proposal should it be implemented;" (NEPA Regulation 1502.16(a)(1) and (4.) The agency must analyze "the intensity of effects." (NEPA Regulation 1501.3(d)(2.) That includes "The degree to which the action may adversely affect an endangered or threatened species or its habitat including habitat that has been determined to be critical under the Endangered Species Act of 1973." (NEPA Regulation 1501.3(d)(2)(vi.) NEPA Regulation 1502.16(a) imports the 1501.3 discussion of "significance of those effects" requirement into the required environmental consequences section of an EIS. Reclamation's Draft EIS does not discuss the significance of adverse effects and does not analyze the degree to which diversions of freshwater for Project operations may adversely affect the endangered and threatened fish species. The EIS to be prepared must contain high-quality information and accurate scientific analysis. Lands Council v. Powell 395 F.3d 1019 1031 (9th Cir. 2005.) If relevant data is not available or not complete the EIS must disclose that fact. (Id.) The profound question is whether the diversions for Project operations will or may cause or contribute to the extinction of one or more of the endangered and threatened fish species. The Draft EIS is silent in response to that question. As true of other omissions Reclamation must prepare a supplemental Draft EIS to discuss the significance of adverse effects on endangered and	impacts. The context and magnitude of impacts is discussed throughout the EIS. Please see chapters 4 through 22 of the EIS for evaluation of impacts. Please also refer to Appendices G through X for a summary of impacts and proposed mitigation for potential impacts that may not be avoidable. The EIS explains in Chapter 23, Other NEPA Considerations, that an irreversible commitment of resources is the permanent loss of a resource that cannot be replaced (or restored over a long period of time) and that an irretrievable commitment of resources is a loss of production or use of natural resources. As lead agency under NEPA, Reclamation has identified those irreversible and irretrievable commitments of resources in Chapter 23 of the Draft EIS.

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	threatened for species and the degree to which the diversions for Project operations may adversely affect those species.	
51-18	C. The Omission of any Irreversible and Irretrievable Commitments of Federal Resources which would be Involved in the Proposed Agency Action Violates NEPA An EIS must include "any irreversible and irretrievable commitments of Federal resources which would be involved in the proposed agency action should it be implemented." (42 U.S.C. 4332(v) (NEPA Regulation 1502.16(a)(4.) The Water Board's Staff Report/SED concluded that "Failing to take actions proposed by the proposed Plan amendments could result in the loss of Delta function beyond restoration of its original function and therefore would result in a significant irreversible environmental change." (Ch. 7.23 p. 7.23-69) (Emphasis added.) So an expert agency has determined that continuing merrily along without increasing freshwater flows by reducing exports will likely result in significant irreversible environmental change. The endangered and threatened fish species constitute Federal resources but there has been no disclosure let alone analysis of the likely irreversible commitment of those Federal resources in Reclamation's Draft EIS. That is yet another violation of NEPA.	The State Water Resources Control Board, as a California state agency, must comply with CEQA. Their conclusion is pursuant to CEQA for the Draft WQCP amendment not on modifications to the long term operations of the CVP and SWP. As such, conclusions in the Revised Draft SED are not directly applicable to conclusions in this EIS. The EIS explains in Chapter 23, Other NEPA Considerations, that an irreversible commitment of resources is the permanent loss of a resource that cannot be replaced (or restored over a long period of time and that an irretrievable commitment of resources is a loss of production or use of natural resources. In exercising its discretion as lead agency under NEPA, Reclamation has identified those irreversible and irretrievable commitments of resources in Chapter 23 of the Draft EIS. Regarding disclosure of impacts to fish species, refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, of the Draft EIS.
51-19	8. THE DRAFT EIS FAILS TO COMPLY WITH NEPA IN ANALYZING PROJECT IMPACTS ON PUBLIC HEALTH IN ENVIRONMENTAL JUSTICE COMMUNITIES The California Department of Water Resources (DWR) Draft EIR on State Water Project long-term operations was issued on May 29 2024. DWR's Draft EIR admits "The term CHABs refers to Cyanobacteria harmful algal blooms that have the potential to harm human health or aquatic biota. CHABs are a widespread problem in water bodies worldwide." (Draft EIR Ch. 5 Surface Water Quality p. 5-9.) The Draft EIR also admits Delta CHAB and cyanotoxin monitoring has generally been inconsistent and	Contrary to the commenter's assertions, impacts from CHABs are discussed at the project level in addition to the cumulative impact analysis quoted in the comment. CHABs are addressed in Chapter 21, Public Health and Safety, specifically in Section 21.2.3. That analysis notes that Alternatives 1, 2, and 4 would not increase the potential for public exposure to cyanotoxins in the study area and that there would be no associated adverse effects. It also concludes that Alternative 3 is expected to make CHABs worse in the Delta and Suisun Marsh.

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	incomplete in terms of geographic coverage which makes it difficult to assess changes over time. Nevertheless the California Cyanobacteria and Harmful Bloom Network's Harmful Algal Bloom Incident Report Portal and published studies suggest that cyanotoxins are increasing since they were first detected in the Delta. (Id. p. 5-11.) Reclamation's Draft EIS admits "Some species of cyanobacteria produce toxins referred to as cyanotoxins which can have adverse health effects on humans, domestic animals, fish, and other aquatic biota and other wildlife." (Ch. 21 Public Health and Safety p. 21-2.) According to the Water Board's Staff Report/SED "Harmful algal blooms (HABs) have become a regular occurrence in the Delta since 1999 (Lehman et al. 2005 2013; Kurobe et al. 2013). In freshwater systems like the Delta HABs are mostly attributable to cyanobacteria (Kudela et al. 2023)." (Ch. 4 Other Aquatic Ecosystem Stressors p. 4-16.) "Cyanobacteria species secrete hepato and central nervous system toxins which can be toxic to humans and aquatic wildlife (Lehman et al. 2008; Berg and Sutula 2015). (Id. p. 4-16) (Emphasis added.) "Delta communities have expressed significant ongoing concerns regarding proliferation of HABs in the Delta and requested that the Water Boards take actions to address these concerns. HABs are a component of the phytoplankton community with potentially severe impacts on fish and wildlife as well as on human and pet health and safety. HABs have been increasing in recent years especially in the Bay-Delta although different species and toxins tend to occur in the more saline San Francisco Bay than in the fresher Delta (Kudela et al. 2023). HAB occurrence is related to flow such that HABs benefit from lower inflows high residence times and higher stratification (Kudela et al. 2023) as well as temperature and nutrients." (Ch. 5 Proposed Changes to the Bay-Delta Plan for the Sacramento/Delta p. 5-60) (Emphasis added.) The EPA's January 19 2024 comment letter (Exhibit 2) on the Staff	Because it is not known where in the Delta CHABs could potentially be made worse by implementation of Alternative 3, due to reductions in Sacramento River and San Joaquin River flows entering the Delta, it would be speculative to attempt to apply any degree of specificity to the public health analysis regarding potential effects on environmental justice (or other) communities due to direct or indirect exposure to cyanotoxins. Not only are there multiple factors that influence the growth of cyanobacteria and production of cyanotoxins in the Delta and elsewhere, but there are also several factors that influence the potential for illness from exposure to cyanotoxins (e.g., type and amount of cyanotoxin, exposure route, concentration and duration of exposure, individual susceptibility to potential adverse reactions to exposure). Further, there is a lack of comprehensive, routine monitoring for CHABs in the Delta. Without this, it is difficult to fully anticipate when and where blooms will occur, predict what populations may be exposed and how, or predict exposure levels. Where and when Reclamation has operational discretion, the CVP operates to and complies with water quality requirements under D-1641.

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	Report/SED said The Bay-Delta and its watersheds have also experienced increased frequency of harmful algal blooms (HABs) affecting aquatic life and human health. Restoration of higher flow volumes may address key drivers of HABs including increased stream temperature and water residence time (Kudela et al. 2023; Berg & Sutula 2015 Lehman et al. 2013). EPA reiterates that swift action is needed to address the imperiled state of the Delta and the species communities and economies that depend on this ecosystem for survival. (EPA Comment Letter pp. 1-2.) Stockton urban waterways are stagnant and thick with algal scum and toxins. Algae blooms are regularly found from Stockton to Discovery Bay with smaller ones becoming visible in sloughs between the cities. The CHABs public health situation also involves environmental justice. According to a Restore the Delta Report Percentage-wise the Delta region has the largest environmental justice community in California with parts of Stockton hitting the 95th percentile for economic distress and small Delta towns comprised of 52% of residents for whom English is not their first language. The economic distress of many Stockton environmental justice communities exceeds that of all other environmental justice communities of California [Footnote 3: Climate Equity and Seismic Resilience for the San Francisco Bay-Delta Estuary p. 6 Restore the Delta (2019.)]. Delta counties including San Joaquin and Contra Costa have minority populations exceeding 50% and must be "evaluated for environmental justice impacts." (Draft EIS Ch. 17 Environmental Justice p. 17-2.) Men and women girls and boys in economic distress do not have swimming pools and do not belong to clubs that have swimming pools. Many do not have air-conditioning at home. The Delta region is extremely hot in the summer. Residents in economic distress are the most likely to cool off in Delta waters. Some of these residents fish in Delta waters for part of their food supply. Reducing freshwater flows for CVP and	

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	SWP exports is worsening over time and is now reaching the level of a public health and environmental emergency. On July 9 2024 the Water Board posted a "danger" advisory "after testing of water samples collected from multiple locations of Discovery Bay in Contra Costa County confirmed the presence of harmful algal blooms according to the State Water Resources Control Board and Central Valley Regional Water Quality Control Board. HABs can pose a threat to people and pets and the advisory urges people to avoid swimming boating and other activities to keep pets out of the water until further notice." (Water Boards News Advisory Exhibit 9.) The "danger" advisory also explained Cyanobacteria a group of organisms that form HABs can produce potent toxins. Health risks are associated with HABs as they produce dermatoxins that can cause itching skin and rashes as well as gastrointestinal distress, headaches, agitation and weakness, or abnormal breathing if HAB material is swallowed while swimming. Dogs and children are most susceptible to exposure because of their smaller body size, increased potential to swallow water while swimming, and tendency to stay in the water longer. If you suspect exposure wash your children and dog immediately. (Id) Reclamation's Draft EIS as explained earlier fails to disclose EPA's January 19 2024 comment letter. No evaluation whatsoever is given as to the ongoing impacts of CVP and SWP diversions reducing freshwater flows on the worsening harmful algal blooms. (Draft EIS Ch. 21 pp. 21-4 to 21-5.) Reclamation's Draft EIS does contain an admission with respect to CHABS and cumulative impacts The No Action Alternative would continue with the current operation of the CVP and may contribute to potential changes to Public Health and Safety resources. The action alternatives are anticipated to result in changes in Valley fever related to changes in irrigated agricultural land methylmercury production and resultant changes in bioaccumulation in fish for human consumption and	

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	public exposure to cyanotoxins due to an increase in CHABs. The magnitude of the changes is dependent on alternative and water year type. Therefore the No Action 21-6 Alternative and the action alternatives may contribute to cumulative changes to THE DRAFT EIS Public Health and Safety resources as described in Appendix X Public Health and Safety Technical Appendix and Appendix Y Cumulative Impacts Technical Appendix. (Ch. 21 pp. 21-5 to 21-6.) There is no analysis of "the intensity of effects" and "The degree to which the action may adversely affect public health and safety." That violates NEPA Regulation 1501.3(d)(iv.) There is no analysis of "The degree to which the action may adversely affect communities with environmental justice concerns." That violates NEPA Regulation 1501.3(d)(vii.)	
51-20	9. THE DRAFT EIS ANALYSIS OF THE DELTA CONVEYANCE PROJECT OPERATIONS IS INADEQUATE Instead of addressing the Delta Conveyance Project in the Draft EIS Reclamation put its analysis in Appendix Z. Instead of evaluating the proposed action Alternative 2B--the evaluation is of Alternative 2. (Appendix Z p. Z-1.) Appendix Z states The analysis in the Final EIR assumes the continued operation of existing SWP facilities as permitted under existing regulations that include the 2019 Biological Opinions and the 2020 Incidental Take Permit (ITP). Due to the timing of the Delta Conveyance Project environmental analysis it was not possible to perform new modeling runs with the proposed change in the operation of existing SWP facilities as a result of implementation of Alternative 2 and Delta Conveyance Project; therefore the analysis in this appendix is not quantifying potential additive effects of operating the CVP. Alternative 2 and Delta Conveyance Project. Future development of a combined modeling analysis will facilitate a better understanding of potential project interactions. (Appendix Z p. Z-1.) So Reclamation's Draft EIS and	The purpose of Appendix Z, Evaluation of Delta Conveyance Project Operations, is to disclose the environmental effects of the approved Delta Conveyance Project Alternative 5, as described in the Final Environmental Impact Report for the Delta Conveyance Project, with implementation of LTO Alternative 2, as described in the Draft Environmental Impact Statement. Alternative 2 addresses the Delta Conveyance Project programmatically and recognizes future environmental compliance will be necessary. During the planning and construction period for the Delta Conveyance Project, DWR expects to implement its adaptive management plan, including its baseline study plan and monitoring. The results of these studies, as well as future permitting decisions, may result in further refinements to the proposed operation of the Delta Conveyance Project. Potential refinements, as well as environmental or regulatory changes that may occur during the planning and construction period prior to initial Delta Conveyance Project operations, will be considered in future project-level permitting consistent with NEPA and ESA. As new information/updates become available regarding SWP and Delta

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	appendixes fail to include any actual quantifying analysis of the impacts of CVP and SWP diversions of freshwater with the new upstream diversions of freshwater for exports accomplished by the Delta Conveyance Project tunnel. Also operation under existing regulations is assumed as opposed to the reduced diversions proposed by the Water Board and supported by the EPA National Marine Fisheries Service and California Department of Fish and Wildlife. Appendix Z admits "the Delta Conveyance Project would provide additional export capacity." (Appendix Z p. Z-9.) According to Appendix Z with the Delta Conveyance Project operating As discussed in the Delta Conveyance Project Final EIR Chapter 6 Section 6.3.2.2 Project Alternatives under average annual SWP deliveries would increase for the long-term average (15%) and dry and critical water years (13%). Average annual SWP Table A deliveries are expected to increase under the long-term average (13%) and dry and critical water years (23%). SWP Article 56 deliveries would increase under the long-term average (11%) and dry and critical water years (29%). SWP Article 21 deliveries would increase under the long-term average (254%) and would remain the same during dry and critical water years. CVP deliveries would increase under the long-term average (1%) and during dry and critical water years (2%). (Appendix Z p. Z-23-24.) So there is no actual analysis whatsoever by Reclamation of the degree to which Delta Conveyance Project operations may adversely affect an endangered or threatened fish species or its habitat in violation of NEPA Regulations 1502.16(a) and 1501.3(d)(@)(vi.) There is likewise no analysis whatsoever by Reclamation of the degree to which Delta Conveyance Project operations may adversely affect public health and safety. That violates NEPA Regulation 1501.3(d)(iv.) There is no analysis of the degree to which the action may adversely affect communities with environmental justice concerns. That violates NEPA Regulation 1501.3(d)(vii.)	Conveyance Project operations, additional assessments relative to LTO of the CVP may be necessary. As proposed in the EIS, and as will be proposed at various times in the future, the operation of the SWP's existing facilities will likely change, and the combined effect of modified ongoing operations of the SWP and the operation of the Delta Conveyance Project will need to be determined.

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	There is no analysis of possible conflicts of the Delta Conveyance Project with the objectives of federal and state plans policies and controls discussed above in section 6 of these comments. There is more. The U.S. Army Corps of Engineers issued a Draft EIS on the Delta Conveyance Project on December 19 2022. (EIS No.20220183.) The U.S. Environmental Protection Agency (EPA) issued its comment letter on March 16 2023 on the Army Corps' Draft EIS. The Army Corps' Draft EIS only covered construction of the Project; it did not cover Project operations. The EPA explained in its comment letter to the Army Corps that the EIS must cover the impacts of Project operations. Our organizations' supplemental comment letter of March 30 2023 explained to the Army Corps that it would have to prepare a supplemental Draft EIS because the profoundly significant subject of Project operations could not be addressed for the first time in a Final as opposed to supplemental Draft EIS. There must be a supplemental Draft EIS prepared on operations of the Delta Conveyance Project. If Appendix Z of Reclamation's Draft EIS is intended to be the federal agency Draft EIS on operations of the Delta Conveyance Project that is a clear violation of NEPA's requirements for comprehensive environmental analysis and full disclosure. The Delta Conveyance Project is a huge expensive public works project that would further reduce Delta flows instead of increasing them as proposed by the Water Board and supported by the EPA National Marine Fisheries Service and California Department of Fish and Wildlife. Delta residents and users Delta region counties and cities and public interest organizations are entitled to clear notice in the form of a document entitled "Delta Conveyance Project Draft EIS" that covers Project operations for public review and comment. It would be a violation of everything that NEPA stands for if Reclamation and perhaps other agencies such as the Army Corps claim that the subject of Delta Conveyance Project operations	

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	including the impacts of substantial diversions of freshwater flows on endangered and threatened fish species and on the public health of Delta residents and users has been addressed by an Appendix of a Draft EIS on long-term operations of the CVP and SWP.	
51-21	10. THE DRAFT EIS FAILS TO INCLUDE SCOPING COMMENTS OR SUMMARIES THEREOF NEPA Regulation 1502.17 requires (a) The draft environmental impact statement or appendix shall include a summary of information including alternatives and analyses submitted by commenters during the scoping process for consideration by the lead and cooperating agencies in their development of the environmental impact statement. (b) The agency shall append to the draft environmental impact statement or publish all comments (or summaries thereof where the response has been exceptionally voluminous) received during the scoping process. NEPA Regulation 1502.19 requires inclusion in a prepared appendix in pertinent part (d) For draft environmental impact statements all comments (or summaries thereof where the response has been exceptionally voluminous) received during the scoping process that identified information for the agency's consideration. Reclamation has not included scoping comments in either the Draft EIS or the appendixes. That failure violates NEPA Regulations 1502.17 and 1502.19. This failure prejudiced commenters on the Draft EIS by depriving them of being able to see the scoping comments that had been made. As was shown earlier in section 5 of these comments among the information by commenters hidden from cooperating agencies and the public was the Sierra Club California et al. comment letter of March 29 2022 which included the Public Interest Alternative.	Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the consideration of scoping comments in the development of the EIS. As described in Standard Response 1, the scoping report is included in the Final EIS. Please see Standard Response 4, Alternatives Formulation, regarding the development of alternatives. A description of the Draft Alternatives considered, including those received on the Notice of Intent is described in Appendix E, Draft Alternatives. This appendix indicates that all of the potential alternatives received were considered in development of the alternatives evaluated further in the Draft EIS.
51-22	11. THE DRAFT EIS INAPPROPRIATELY EXCLUDES NUMEROUS TERRESTRIAL BIOLOGICAL RESOURCES FROM ANALYSIS The	Effects on additional species: The Draft EIS does evaluate the alternatives potential for effects on riparian woodrat, California

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	DEIS acknowledges that the proposed Alternatives including the No Action Alternative will have impacts on numerous terrestrial biological resources. However complete analysis of terrestrial biological resources is limited to only a few species. The exclusion of other species that may also be impacted by CVP operations is not justified. Throughout the analysis of terrestrial biological impacts western pond turtle foothill yellow-legged frog bank swallow yellow-billed cuckoo giant garter snake and least Bell's vireo are variously considered depending on the region and alternative of focus. All of these species were determined to experience a "low" to "moderate" effect due to project operations. However numerous other species including riparian woodrat California clapper rail white-faced ibis Suisun song sparrow yellow-breasted chat least tern California black rail least bittern greater sandhill crane saltmarsh common yellowthroat yellow warbler western snowy plover and trinity bristle snail were all also identified as having a "low" potential to occur in the Project area i.e. "Suitable habitat for this species has the potential to overlap with the project area and/or is present in some areas proposed for operational changes." (App. P p-38). The DEIS should also analyze the effects of the proposed operations on these species. Additionally such determinations are based solely on review of existing literature and databases and do not include any actual on-the-ground surveys or habitat assessments. To determine likelihood of occurrence especially because such determinations influence the inclusion or exclusion of species from analysis the DEIS should include general biological surveys and species- specific protocol surveys. Even if the potential for impacts is low these species may still be impacted by the project and those impacts must be disclosed analyzed and mitigated. In fact NEPA requires an analysis of foreseeable impacts which should include impacts to species that inhabit riparian and upland habitats that may be altered as a	clapper rail, white-faced ibis, Suisun song sparrow, yellow-breasted chat, least tern, California black rail, least bittern, greater sandhill crane, saltmarsh harvest mouse, common yellowthroat, yellow warbler, western snowy plover, and trinity bristle snail. While suitable habitat for these species have the potential to overlap with the project area and/or is present in some areas proposed for operational changes, the operational changes proposed under the alternatives were found not to have the potential for adverse effects on these species; therefore, no further evaluation was completed. The determination as to whether terrestrial species would be affected was based on evaluation of the habitats within which each species occurs and the extent to which these habitats would be affected by the action alternatives. The species considered and their associated habitats are provided in Appendix P, Terrestrial Biological Resources Technical Appendix, Section P.1.8. Within each species' range, habitat was assumed to be occupied by the species for the sake of assessing effects. As such, species surveys were not necessary. In circumstances where effects on the habitat would not differ from effects under the No Action Alternative, it was determined that there would be no potential effect on the species. Impacts on Riparian Species: As described in the EIS Sections 13.2.1.2, 13.2.1.4, and 13.2.1.5, riparian habitat conditions with implementation of the action alternatives are expected to be similar to habitat conditions under the No Action Alternative. Reclamation will coordinate with USFWS to maintain summer deliveries to CVPIA refuges in a manner consistent with refuge contracts and agreed upon operational priorities. Reclamation addressed impacts on refuges resulting from changes in

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	result of changes in flows due to the proposed alternatives. Further the analysis excludes any consideration of impacts on species present in CVPIA refuges from its analyses of terrestrial biological resources. The DEIS claims that "Reclamation does not control the distribution of water to CVPIA wildlife refuges beyond initial water year allocations. Therefore the changes or impacts described for terrestrial resources associated with CVPIA refuges are outside the scope of this alternatives analysis." (13-5 6). Yet the DEIS goes on to say "The last remaining reproductive population of the giant garter snake in the San Joaquin Valley exists in CVPIA refuges. Reduced water deliveries to CVPIA wildlife refuges in the San Joaquin River under Alternative 3 would have impacts on the availability of aquatic habitat for giant garter snake and northwestern pond turtle." (13-10). The DEIS acknowledges the impacts of reduced deliveries on giant garter snake and northwestern pond turtle in one context but claims they are unable to do so in another. The DEIS does include impacts of water allocations which will necessarily affect distribution to CVPIA refuges. The DEIS must therefore include the impacts to terrestrial biological resources in CVPIA refuges including giant garter snakes and northwestern pond turtles in its analysis of all alternatives and in all relevant watersheds.	operations on both the Sacramento and San Joaquin River. For the Sacramento River, the Draft EIS states, "Potential reductions in water deliveries to CVPIA wildlife refuges in the Sacramento River watershed under the alternatives could also have impacts on the availability of aquatic habitat, however, Reclamation does not control the distribution of water to CVPIA wildlife refuges beyond initial water year allocations. Therefore, the changes or impacts described for terrestrial resources associated with CVPIA refuges are outside the scope of this alternatives analysis." Similar language was included for San Joaquin River, except that the analysis did not clarify that refuge impacts are beyond the scope of the analysis. The EIS has been revised to include this clarification under the analysis for the San Joaquin River, for giant garter snake and western pond turtle.
51-23	The DEIS also limits its analysis of impacts to terrestrial biological resources to potential impacts from altered flows within watercourses only. However the project includes the installation and operation of transmission lines which should be considered part of long-term CVP operations. Transmissions lines may impact numerous special-status bird species including Swainson's hawk and sandhill cranes. Such impacts must be included in the analysis of terrestrial biological impacts. The failure to include a consideration of the impacts of transmission lines is an egregious omission.	There is no construction of new transmission lines or transmission line maintenance as part of the alternatives.

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51-24	A. The DEIS Fails to Consider Alternatives that Minimize Impacts to Terrestrial Biological Resources The DEIS includes analysis of impacts under five different alternatives including the No Action Alternative. In numerous cases all alternatives will have negative impacts on certain terrestrial biological resources. For example the DEIS states that in the Sacramento River region "Seasonal operations under all action alternatives may reduce natural variability beyond major flood events and will likely contribute to the further reduction of natural successional processes that result in non-climax stage riparian woodlands and loss of suitable western yellow-billed cuckoo habitat over time." (13-7). That is to say all alternatives will negatively affect western-yellow billed cuckoo. No alternatives were considered that would reduce the impact of western-yellow billed cuckoo a federally-threatened species along the Sacramento River. The DEIS should consider a wide range of alternatives including at least one that prioritizes the minimization of impacts to terrestrial biological resources. Without such an alternative it is impossible for the public or decisionmakers to make informed decisions.	Refer to Standard Response 4, Alternatives Formulation, for additional information regarding the rigorous approach Reclamation undertook for the formulation of alternatives and the range of alternatives considered for analysis. The USFWS Biological Opinion addresses listed terrestrial species.
51-25	B. The Proposed Mitigation for Impacts to Terrestrial Biological Resources is Inadequate For species such as those threatened and endangered species considered in the DEIS which are already declining due to multiple (and often synergistic) threats any negative impacts no matter how localized can diminish the species' resiliency and makes it that much harder to avoid extinction. Proper analysis and mitigation of a project's impacts is therefore essential to maintaining biodiversity and the health of our ecosystems. The DEIS acknowledges numerous impacts to terrestrial biological resources under all proposed alternatives. However mitigation is not proposed for all of the species that will experience impacts.	Reclamation is currently in consultation with USFWS under section 7(a)(1) of the Endangered Species Act for all federally listed and proposed species potentially affected by the project. Reclamation will implement conservation measures for the federally listed and proposed species issued by USFWS as a result of this consultation. See Standard Response 2, Related Regulatory Processes, regarding Reclamation's compliance with the Section 7 consultation process. All proposed alternatives acknowledge potential impacts to numerous terrestrial resources due to the anticipated modeled flow changes compared to the No Action Alternative which could

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	Rather the DEIS proposed mitigation for only three species bank swallow foothill yellow-legged frog and northwestern pond turtle excluding numerous others. For example the DEIS states that giant garter snake (13-5) and western yellow-billed cuckoo (13-7 9) will both experience impacts under various alternatives but no mitigation for these impacts is proposed and no alternatives are explored that would minimize or avoid impacts to these listed species. The DEIS provides no justification for this omission. This is unacceptable and inconsistent with Reclamation's duties under section 7(a)(1) of the Endangered Species Act. Further the mitigation that is proposed is extremely inadequate. The DEIS states that "Reclamation developed mitigation measures for federally listed species with the first goal being to avoid effects on the species and the second goal being to minimize and compensate for unavoidable effects." (App. P p-52). However the majority of the proposed mitigation accomplishes neither. In the case of the bank swallow MM BIO-1 does provide mitigation to minimize impacts through the development of flow criteria. However the mitigation does not provide any requirements in the case that bank swallows are impacted by project operations if the flow criteria are not 100% effective at preventing impacts to bank swallow. Similarly MM BIO-2 (focused on the foothill yellow-legged frog) and MM BIO-3 (focused on northwestern pond turtle) also fail to provide any mitigation if the project does affect these sensitive species which is extremely likely based on the information provided in the DEIS. According to the mitigation measure there is no obligation to mitigate those impacts at all. The DEIS should include compensatory measures to ensure than if any impacts that do occur they will be fully mitigated. Even more egregious MM BIO-2 and MM BIO-3 provide no mechanism of impact avoidance or minimization either. Instead the DEIS relies on vague and deferred plans to monitor the species: "develop and implement	occur within suitable habitat for terrestrial species. However, the significance of impacts varies depending on the terrestrial species and only those species analyzed as experiencing adverse impacts as a result of modeled flow changes were included in the mitigation approach. Additionally, please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the mitigation discussed in the EIS. NEPA is a procedural requirement and does not require compensatory mitigation for potential impacts.

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	field evaluations to inform real- time groups to minimize impacts." The DEIS provides no actual detail about how when or with what frequency such monitoring shall occur or how the data gathered from such monitoring will inform management (p-97). The lack of concrete detail or enforcement mechanism makes these mitigation measures entirely ineffective. Additionally without a detailed information about how the proposed field evaluations could lead to minimized impacts decisionmakers and the public cannot compare the No Action alternative to the Proposed Action or other alternatives.	
51-26	12. RECLAMATION FAILED TO USE UP TO DATE MODELING FOR THE DRAFT EIS The modeling used in the 2019 Biological Opinion relied upon 2010 data inputs which stopped in 2003. This failure to use up to date data permeates the entire DEIS analysis and fails to consider more recent data regarding climate change including drought impacts to water supply water quality and temperatures. Up to date data is required in an EIS. Lands Council v. Powell 385 F.3d 1019 1031 (9th Cir. 2005.)	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding comments on the modeling assumptions used for the Draft EIS. Refer to Standard Response 9, Climate Change, regarding how climate change data was included in the modeling assumptions for the Draft EIS. Refer to Standard Response 6, Hydrologic Modeling and Surface Water Resources, regarding modeling assumptions and output analysis of droughts.
51-27	13. RECLAMATION'S ARBITRARY CVP GEOGRAPHICAL EXTENT LIMITS MEANINGFUL ANALYSIS AND IMPACT DISCLOSURE Although the Trinity River Division (TRD) is part of the CVP Reclamation did not include or analyze components associated with the Trinity River portion of the TRD. The failure to analyze and disclose impacts creates an inflated water bias regarding the water available to the CVP. Components of the TRD are associated with transbasin diversions into Whiskeytown Reservoir. As a result there was not analysis of any aspects of the proposed action on the Trinity and Klamath rivers or their associated listed species (i.e. Pacific eulachon Southern Oregon/Northern California Coast coho salmon) and designated critical habitats. Neither was production of currently-unlisted	The Trinity River Division is part of the CVP. Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives.

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	Upper Klamath-Trinity River Chinook salmon evaluated as it pertains to Chinook salmon availability as prey for Southern Resident killer whales.	
51-28	14. RECLAMATION MADE IT IMPOSSIBLE TO COMMENT COMPREHENSIVELY ON THE DRAFT EIS NEPA Regulation 1502.7 specifies that The text of final environmental impact statements not including citations or appendices shall not exceed 150 pages except for proposals of extraordinary complexity which shall not exceed 300 pages. (Emphasis added.) The text of the Draft EIS exceeds 300 pages amounting to a total of 415 pages. There are also 113 separate appendixes and attachments amounting to 18738 pages. Reclamation issued the Draft EIS on July 26 2024 providing a 45-day public review period ending September 9 2024. That is the minimum time an agency is permitted to afford. Persons seeking to comment on the Draft EIS also have other things they need time to do. They need to eat sleep and need to do other work and things inside and outside the home. It is not possible for a normal human being to read comprehend and be able to respond with detailed focused written comments to the huge volume of material on a proposal "of extraordinary complexity" within 45 days. Sierra Club California and 7 other public interest organizations requested Reclamation in writing on August 8 2024 to extend the comment period for 90 days. A copy of that request is attached as Exhibit 10. The Hoopa Valley Tribe made a similar request on August 21 2024. A copy of that request is attached as Exhibit 11. Reclamation did not extend the comment period. Reclamation did not even respond stating it would not extend the comment period. CONCLUSION Reclamation has failed to proceed in the manner required by NEPA. Reclamation's Draft EIS is legally insufficient. Before proceeding to issue a Final EIS Reclamation must first prepare a	Note that 40 CFR 1508.1(v) defines a page as "500 words and does not include citations, explanatory maps, diagrams, graphs, tables, and other means of graphically displaying quantitative or geospatial information." Excluding these materials, the text of the EIS meets the CEQ regulations' 300-page requirement. Refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding length of the comment period. The comment period for the Draft EIS was established based on conformance to the CEQ regulations for public review and in combination with the pressing need for timely decision-making. Reclamation did not formally extend the September 9 comment period deadline, though comments submitted by September 15 may elicit a response to the comments in the Final EIS, as appropriate, in consideration of workload and schedule for completing the Final EIS. Reclamation's extensive and continuing outreach efforts over the course of developing the Public Draft EIS support keeping the process on track and upholding the deadline.

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	supplemental Draft EIS and recirculate it for public review and comment.	

Table 4-53. Letter No. 53

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53-1	A. Introductory Comments Regarding Need for Integration of the Trinity River Division Analysis in Pending Reinitiation of Consultation. The Hoopa Valley Tribe submits that the Department of the Interior/Bureau of Reclamation must not finalize their analysis or issue any record of decision relating to the Long-Term Operations Plan of the Central Valley Project and State Water Project (CVP/SWP LTOP) until they have completed and fully integrated their ongoing assessment of the long-term needs for the Trinity River Division (TRD). The reinitiation of consultation (ROC) for the TRD is ongoing and Hoopa is a co-lead in that process. Failure to await the completion of the TRD ROC process will risk jeopardizing the water and fishery resources of the Trinity River and will directly impair the statutory and contractual rights and benefits that are established in federal law for the Hoopa Valley Tribe. There is no existing legal or judicial mandate that requires Interior/Reclamation to finalize a record of decision on the CVP/SWP LTOP prior to completing the ongoing analysis of the Trinity River in the TRD ROC. Litigation relating to the CVP/SWP LTOP is currently stayed pending completion of this review of the CVP/SWP LTOP. The parties may seek to extend that stay to allow time for completion of the TRD ROC analysis. The most recent order from the Court in that litigation envisions that additional time and a continued stay may be necessary. See PCFFA v. Raimando Case No. 20-cv-431-JLT-EPG (Dkt. #512 April 2 2024) p. 10. Regardless there is no deadline that mandates Interior/Reclamation to complete their work on the CVP/SWP LTOP by the end of 2024 or prior to completion of the TRD ROC analysis. Failure to fully integrate the TRD ROC analysis into the CVP/SWP LTOP analysis will result in a need to re-open proceedings on the CVP/SWP	The Trinity River Division is part of the CVP. Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives.

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	LTOP once proceedings on the TRD are complete. This will cause uncertainty and could likely lead to additional future litigation. It also threatens Trinity River resources and Hoopa's rights and property interests by failing to determine and secure necessary amounts of Trinity River water for Trinity resources before making decisions on downstream water management in the CVP/SWP LTOP. The proper and prudent course of action is to wait to finalize analysis on the CVP/SWP LTOP until the TRD ROC proceedings are complete. Then Interior/Reclamation can issue a single comprehensive record of decision for the entirety of the CVP/SWP rather than proceeding in piecemeal and incomplete fashion.	
53-2	B. Introductory Comments re Factual and Legal Background of TRD and General Objections of Hoopa Valley Tribe Regarding the Need to Complete TRD ROC Analysis Prior to Entering a Record of Decision on the CVP/SWP LTOP. The July 26 2024 Draft Environmental Impact Statement for the Long-Term Operations of the Central Valley Project and State Water Project (DEIS) fails to use best available science; inadequately assesses impacts to Trinity fish populations Trinity River ecosystem health and fishery restoration mandates; avoids meaningful consideration of climate change; side-steps developments in Trinity River fishery restoration science; assumes operational patterns of diversion and storage that threaten Trinity River fisheries and fails to account for statutory and contractual rights and benefits established for the Hoopa Valley Tribe. The Trinity River is the Klamath River's largest tributary and the Central Valley Project's (CVP) only source of imported water to California's Central Valley. In 1955 Congress authorized development of the TRD as a part of the CVP. Public Law 84-386 69 Stat. 719 (1955) ("1955 Act"). The TRD became operational in 1964. The TRD impounds the Trinity River at Trinity Dam behind	The Trinity River Division is part of the CVP. Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the methodology and scientific accuracy of the Draft EIS. Reclamation used reliable data and scientific information resources throughout the EIS (40 CFR § 1502.23). Please refer to Standard Response 9, Climate Change, for assumptions and methodology regarding climate change for all of the alternatives.

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	which water accumulates to form Trinity Reservoir. A second reservoir and Lewiston Dam sits immediately downstream of Trinity Dam/Reservoir and regulates water releases to the Trinity River. At Lewiston water is also diverted to the Sacramento River Basin. The TRD develops stores and diverts approximately one-seventh of the CVP's average annual yield a portion of which is annually diverted from the Klamath River basin to the Central Valley. When Congress authorized the TRD in the 1955 Act Congress recognized that "an asset to the Trinity River Basin as well as to the whole north coastal area are the fishery resources of the Trinity River." S. Rep. No. 1154 84 Cong. 1st Sess. (1955 Senate Report) at 5; H.R. Rep. No. 602 84th Cong. 1st Sess. (1955 House Report) at 4. In Proviso 1 of Section 2 of the 1955 Act Congress directed maintenance of a minimum flow in the Trinity River below Lewiston Dam and further required the Secretary "to adopt appropriate measures to insure the preservation and propagation of fish and wildlife including but not limited to [the 150 CFS minimum flow]." Id. Proviso 1 gives the Secretary broad authority to protect and preserve the Trinity River fishery which is held in trust for the Hoopa Valley Tribe. The second proviso of Section 2 of the 1955 Act mandates an independent obligation for an annual release of not less than 50000 acre-feet for use by the Hoopa Valley Tribe and other downstream users. And the 2000 Trinity River Record of Decision (ROD) entered into between the Hoopa Valley Tribe and Department of the Interior pursuant to the Central Valley Project Improvement Act Public Law 102-575 [section] 3406(b)(23) (1992) (CVPIA) mandates specific quantities of water at specific times of year for restoration of the Trinity River fishery a Hoopa trust resource. The statutory prioritization for in-stream uses in the Trinity River means that Interior/Reclamation cannot make any final determination of the amount of water that will be made available to contractors in the CVP/SWP LTOP until it first	

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	determines the amount of water that is necessary for full restoration and lasting protection of the Trinity resources now and in the future.	
53-3	Construction and operation of the TRD caused a drastic reduction in Trinity River anadromous fish populations. Federal law requires restoration of Trinity River fish populations to those that existed immediately prior to commencement of the TRD's construction. The Secretary of the Interior through the Bureau of Reclamation has a specific and unique statutory trust responsibility and mandate to restore the Hoopa Valley Tribe's anadromous fishery resources. Federal law requires Central Valley Project contractors to reimburse the cost of restoration as annual operation and maintenance expenditures. CVPIA [section] 3406(b)(23). Advance annual payment of those costs is a condition on delivery of CVP water and power to contractors; those costs must continue to be paid for so long as the TRD dams and diverts Trinity River water to the Central Valley.	As indicated by the commenter, this is background information for subsequent comments.
53-4	On multiple occasions since the 1955 Act the Secretary of the Interior and Congress have taken action towards restoring the Trinity River and its resources. In 1981 the Secretary ordered an increase in annual flows released from the TRD to the Trinity River downstream and confirmed that mitigation is required to provide fish harvest opportunities to Hoopa for both subsistence and commercial purposes and that additional flow is critical to restoration preservation and propagation of the Trinity River fishery resource. In 1984 Congress affirmed and authorized the Secretary's restoration goal in the Trinity River Basin Fish and Wildlife Management Act ("1984 Act") Public Law No. 98-541 98 Stat. 2721. Congress directed the Secretary to develop and implement a fish and wildlife management program for the Trinity River Basin designed to restore the fish and wildlife populations in such basin to the levels approximating those	As indicated by the commenter, this is background information for subsequent comments.

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	which existed immediately before the start of construction [of the TRD] and to maintain those levels. 1984 Act [section] 2(a). Congress also directed Interior to "modernize and otherwise increase the effectiveness of the Trinity River Hatchery." In 1991 the Secretary ordered additional flow releases based on "fishery needs the Department's trust responsibility . . . the biological integrity of the . . . 12 year Trinity River Flow Evaluation the needs of the Restoration Project and the comprehensive administrative record concerning Trinity River flow requirements." In 1992 Congress enacted the CVPIA which among other things required actions to "meet Federal trust responsibilities to protect the fishery resources of the Hoopa Valley Tribe and to meet the fishery restoration goals of the [1984 Act]." CVPIA [section] 3406(b)(23). Section 3406(b)(23) required Hoopa's concurrence on certain flow and restoration measures proposed for implementation. In 1996 Congress enacted the Trinity River Basin and Wildlife Management Reauthorization Act (the "1996 Act"). Public Law No. 104-143 110 Stat. 1338 (1996) broadening the scope of the 1984 Act's fishery protection mandate and confirming that "Trinity Basin fisheries restoration is to be measured not only by returning adult anadromous spawners but by the ability of dependent tribal commercial and sport fisheries to participate fully . . . in the benefits of restoration." 1996 Act [section] 2. These Acts confirm and support the prioritization of in-basin use of Trinity River waters for protection and restoration of its fishery.	
53-5	On December 19 2000 the Hoopa Valley Tribe and the Secretary of the Interior executed a permanent contract in the form of the Trinity River Mainstem Fishery Restoration Record of Decision (2000 ROD) that established terms and conditions for Trinity River fishery restoration including specific annual TRD water supply volumes and release schedules and fishery restoration	As indicated by the commenter, this is background information for subsequent comments

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	program actions that the Secretary is required to implement and fund accordingly. The Trinity ROD is a contract with the Hoopa Valley Tribe that binds the Secretary to the terms concurred in by the Tribe and thus must be implemented "accordingly"; that is according to its terms pursuant to CVPIA [section] 3406(b)(23)(B). After nearly a quarter century the Secretary and the Bureau of Reclamation have failed to complete or adequately fund the construction operation and maintenance of the restoration program. As a result the fishery remains devastated.	
53-6	As discussed above TRD water is subject to statutory priorities for in-basin uses over diversions to the Central Valley. Those priorities include the preservation and propagation of Trinity River fish and wildlife that the United States holds in trust for the Hoopa Valley Tribe. In addition federal law requires an annual TRD release of not less than 50000 acre-feet for use by the Hoopa Valley Tribe and other downstream users. The 2000 ROD also mandates specific quantities and timeframes for use of water for the Trinity River fishery. Accordingly the amounts of water necessary for full restoration and lasting protection of Trinity resources must be determined prior to making any determinations about downstream water management in the CVP/SWP. Segregating the TRD from the LTOP even temporarily makes it difficult and likely impossible to protect TRD priorities and volumes in the 1955 Act and meet the 1984 1992 and 1996 statutory natural restoration and hatchery improvement mandates for the Trinity River.	As indicated by the commenter, this is background information for subsequent comments. The Trinity River Division is part of the CVP. Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives.
53-7	C. Technical Comments on Preferred Alternative and Ignored Effects on Trinity Resources The DEIS identifies a variant of Alternative 2 (2b) as the Preferred Alternative. The methods used in the DEIS fall well short of best available science as required by NEPA. The DEIS contains limited analyses of alternative plans for	Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the 2000 ROD flows contain in the alternatives. The Draft EIS evaluates impacts on Southern Oregon/Northern California Coast coho salmon in the Trinity River in Section 12.2.1.1, explaining the impacts of Alternative 2B in

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	CVP and State Water Project long-term operations. The modeling comparing the NAA and Alt 2 show that there is on average less storage in Trinity under the preferred alternative. Based on past experience we know this can lead to additional take of threatened Coho salmon which is not adequately characterized or quantified. The temperature of water released from Lewiston Dam is how take will occur but the existing modeling only looks at volume and does not describe the associated temperature effect. What is presented demonstrates some additional level of take but there is not adequate information to describe the extent. Temperature models are currently being developed but the current timeframe is not conducive to conducting this necessary analysis. Aligning the process as requested for other reasons would also facilitate the important data gap. There was insufficient collaboration with Trinity River science experts including Hoopa Tribal Fisheries during scoping of the analyses relating to fish populations and Trinity River ecosystem health.	Section 12.2.9. Additional detail regarding impacts of Alternative 2 is provided in Section O.5.26.1 of Appendix O, Fish and Aquatic Resources Technical Appendix, with Table O-282 describing in plain terms the context and intensity of impacts on coho salmon for all alternatives. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of analysis in the EIS. Regarding the commenter's reference to "best available science," note that it is a standard under the ESA, while NEPA relies on a different standard for use of information as described in 40 Code of Federal Regulations § 1502.23 and Standard Response 5. Refer to Standard Response 2, Related Regulatory Processes, for a discussion of related regulatory processes.
53-8	The DEIS overlooks progress made during and since the Trinity River Flow Evaluation Study instead evaluating impacts via simulations of water temperature and Weighted Useable Area. The DEIS takes a step backward to a time when simplistic engineering models were first used to negotiate so-called minimum flow requirements below diversions when the Instream Flow Incremental Methodology had yet to be developed by federal fisheries scientists. Based on the DEIS' narrow evaluation of fish habitat the document provides an inadequate and unreasonable "major conclusion" at page 0-37 as follows: "Compared to the No Action Alternative, Alternative 1 is expected to have spatially variable but negligible impacts of flow and water temperature on spawning and egg incubation and no adverse impacts on juvenile rearing habitat. Alternative 2 is	While Chapter 0 of the Draft EIS provides a summary, note that the Draft EIS evaluates impacts on Southern Oregon/Northern California Coast coho salmon in the Trinity River in Chapter 12, Fish and Aquatic Resources, Section 12.2.1.1, explaining the impacts of Alternative 2B in Section 12.2.9. Even more detail regarding impacts of Alternative 2 is provided in Section O.5.26.1 of Appendix O, Fish and Aquatic Resources Technical Appendix, with Table O-282 describing in plain terms the context and intensity of impacts on coho salmon for all alternatives. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of analysis in the EIS. The Trinity River Division is part of the CVP. Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity

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	expected to have spatially variable impacts of flow and water temperature on spawning and egg incubation and juvenile rearing habitat likely ranging from adverse (up to approximately a 12% decrease in spawning WUA in a more heavily used reach in December of below normal water years) to no adverse impacts. Alternative 3 would have spatially variable impacts of flow and water temperature on spawning and egg incubation and juvenile rearing habitat likely ranging from minor adverse to no adverse impacts. Alternative 4 would have no adverse impacts of flow and water temperature on spawning and egg incubation and juvenile rearing habitat."	ROD assumptions in the Draft EIS alternatives.
53-9	At page 0-47 appears the following: "Coho salmon fall-run and spring-run Chinook salmon impacts under all the alternatives would be minor in comparison to the No Action Alternative. These salmon populations are extremely important to the Yurok Tribe and Hoopa Valley Tribe as part of their lives, cultural traditions, ceremonies, and community health (Bureau of Reclamation 2012). Salmon populations in the Trinity River would not be negatively affected under the alternatives; therefore there would be no fisheries-related adverse effects to revenue and disposable incomes in the Trinity River Region. "This passage ignores entirely the economic impacts of the decimated Trinity River fishery from which the Hoopa Valley Tribe has a vested property right to harvest fish in sufficient quantities to sustain a moderated standard of living for all tribal members. The conduct of the Secretary and Reclamation in suppressing restoration of fish populations to pre-TRD levels creates the false impression the proposed operations plan will have little or no negative impact on the fishery.	The No Action Alternative is the appropriate baseline to determine the magnitude and context of impacts under the reasonable range of alternatives. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the No Action Alternative under NEPA. Refer to Appendix Q, Regional Economics Technical Appendix, Section Q.2.9.3 for discussions and analysis related to the economic conditions and potential economic effects relevant to the specific industries in which potential economic effects could occur, such as municipal and industrial (M&I) water uses, agriculture, fishing, recreation, and hydropower. Potential impacts on the Trinity River system for the above specific industries, for each alternative, including the No Action Alternative, are discussed within Appendix Q. For each alternative, these discussions include Potential Fisheries-Related Changes to the Regional Economy. Please see Standard Response 8, Trinity River Division, regarding future consultation for the Trinity River Division and to Appendix J regarding Indian Trust Assets.

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53-10	The DEIS fails to evaluate impacts of climate warming and consequent changes in the timing and volumes of precipitation falling as either rain or snow throughout the Trinity River watershed. The DEIS models imports of water from the Trinity River as though they will continue in patterns similar to those of recent years. "Reclamation is separately and concurrently coordinating with the Hoopa Valley Tribe and the Yurok Tribe as joint leads (40 CFR part 1501) on Trinity River-specific considerations to develop potential Trinity River-specific alternatives for an updated operation for releases to the Trinity River and diversions from the Trinity River Basin to the Central Valley." The Hoopa Valley Tribe entered into a joint lead role with the expectation that the operations plan for the TRD would be developed simultaneously and integrated with the Central Valley operations plan. The Tribe only recently learned that the DEIS excludes and delays for at least a year an integrated long-term operations plan for the TRD that would be integrated with the preferred alternative. This is unlawful. Section 2 of the 1955 Act which authorized the TRD requires the Secretary to integrate the TRD in CVP operations. The operation of the Trinity River Division shall be integrated and coordinated from both a financial and an operational standpoint with the operation of other features of the Central Valley Project as presently authorized and as may in the future be authorized by Act of Congress in such a manner as will effectuate the fullest most beneficial and most economic utilization of the water resources hereby made available . . .In addition the TRD is the highest elevation development in the CVP and the Trinity River is the CVP's only source of imported water to the Central Valley and made possible the development of the CVP's San Luis Unit. How the TRD is managed to limit expectations of San Luis Unit contractors and claims to TRD water and power is critical to the survival and restoration of Hoopa's fishery. Further the 1955 Act	Refer to Standard Response 9, Climate Change, regarding the consideration of climate change in the EIS. Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives.

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	and the CVPIA require Reclamation to give first priority for use of any or all TRD water needed to restore and maintain Trinity River fish and wildlife including specifically Hoopa's fishery that the U.S. holds in trust.	
53-11	Also the DEIS entirely ignores in-basin legal priorities in Reclamation law for Hoopa's fishery restoration and protection. At the same time it has numerous references to how Reclamation is considering using TRD exports to the Central Valley to address water needs in the Central Valley. See for example Appendix E Alternatives which has numerous references to TRD water all of which are designed to solve Central Valley environmental and water supply problems.	The Trinity River Division is part of the CVP. All of the alternatives under the Draft EIS include continued implementation of the 2000 Trinity River ROD flows. Please refer to Standard Response 8, Trinity River Division, for the process associated with future proposed modifications to Trinity River Division operations.
53-12	Also Appendix D section D.1.3 relegates Trinity priorities to the category of "Independent but Related" programs. Here is how it describes the 2000 and 2017 RODS: Trinity River Restoration Program - The Trinity River Restoration Program is a partnership comprised of federal and California State agencies Hoopa Valley and Yurok Tribes and Trinity County California. These entities work collaboratively with stakeholders to restore the Trinity River between Lewiston Dam and the confluence of the North Fork Trinity River California to mitigate impacts of the Trinity River Division of the CVP on anadromous fish populations in the Trinity River by successfully implementing the 2000 Trinity River ROD and achieving Congressionally mandated restoration goals. Here HVT is reduced to a TMC member not the tribe that Congress delegated to be the decisionmaker with the Secretary on actions to meet federal trust responsibilities to restore Hoopa's fishery. Lower Klamath River Long-Term Plan - Lower Klamath River Long-Term Plan provides supplemental flows from mid-August to late September from Lewiston Dam to prevent a disease outbreak in the lower Klamath River in years when the flow in the lower Klamath River is projected to be less than 2800	Appendix D includes mitigation measures considered to avoid or minimize specific impacts. As noted in Appendix D, the EIS also includes independent but related programs and activities that address some of the impacts inherent in the long-term operations of the Central Valley Project (CVP) and State Water Project (SWP). The scope and complexity of agency actions in the Central Valley involve multiple activities with ongoing effects on federally listed species that are implemented separately from the long-term operation. These “independent related actions” with their independent NEPA and section 7 consultations, where warranted, are part of the affected environment but are not part of the operation of the CVP and SWP to store, release, divert, route, and blend water. Nevertheless, because of the ongoing and long-term operation of the CVP and SWP, some of these actions rectify and reduce and compensate impacts associated with operation of these facilities. Reclamation recognizes the 50,000 AC From the 1955 Act is reserved for Humboldt County. The Trinity River Division is part of the CVP. All the alternatives in the Final EIS include the continued implementation of the 2000

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	CFS. Supplemental flows come from water stored in Trinity Reservoir. The Lower Klamath River Long-Term Plan consists of three different flow-augmentation components to be implemented as needed in a phased approach based on environmental and biological conditions. Appendix D makes no mention of the 1955 Act's 50000 AF TRD water supply for the Hoopa Valley Tribe and other downstream users. Appendix F Parts 1 and 2 contain modeling information. But do not seem to include the Proviso 2 50000 AF.	Trinity ROD. Please refer to Standard Response 8, Trinity River Division, regarding the consideration of Trinity River operations in the EIS and the steps associated with the analysis of future proposed modifications to Trinity River Division operation.
53-13	The DEIS includes more than 100 PDF files potentially all of which may have to be revised when the TRD eventually is integrated into the CVP operations plan. To segregate the TRD in the long-term operations planning now is inefficient and illegal and will cause conflict and likely costly and lengthy litigation when efforts are made to account for the Trinity priorities and the tribal trust resources that the United States holds in trust for the Hoopa Valley Tribe in the CVP/SWP LTOP. Without having established how re-operation of Trinity River Division will limit diversions to Sacramento River findings in the DEIS cannot be relied upon. Considering the likely need to change (increase) carryover storage behind Trinity Dam to address challenges to maintaining temperature of water released from Lewiston Dam in warm months timing and volume of diversions through Carr Tunnel are most likely to change.	The Trinity River Division is part of the CVP. Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives.
53-14	Potential impacts of climate change are addressed solely through broad qualitative statements and references to investigations "ongoing" rather than being analyzed with scientific methods." In the long term it is anticipated that climate change and development throughout California could affect water supply deliveries." "It is anticipated that climate change would result in more short-duration high-rainfall events and less snowpack in the winter and early spring months." "The	Refer to Standard Response 9, Climate Change, regarding how climate change data was included in the modeling assumptions for the Draft EIS. Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications for Trinity River operations in the EIS and future environmental review processes anticipated for the Trinity River.

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	development and implementation of a river flow management plan downstream of Shasta and Keswick dams that considers the effects of climate change and flow and water temperature needs of spring-run Chinook salmon is ongoing. A recovery action that will operate and maintain temperature control curtains in Lewiston and Whiskeytown Reservoirs to minimize warming of water from the Trinity River and Clear Creek is authorized." In summary until the future water and operational needs of the Trinity River resources are determined it is not possible to finalize (with certainty and finality) the CVP/SWP LTOP. Attempting to finalize the CVP/SWP LTOP prior to the TRD ROC will place Trinity resources at risk and unnecessarily create uncertainty conflict and likely future litigation.	
53-15	D. Failure to Integrate the Analyses of the TRD and CVP/SWP LTO From the Outset Will Lead to Uncertainty Non-Finality and Likely Future Litigation. As we understand it any LTOP issued on or before December 20 2024 will not have accounted for TRD statutory priorities and statutory and contractual allocations of water required to restore preserve and maintain the Trinity River fishery that the United States holds in trust for our Tribe under the Law of the Trinity River. That outcome violates the mandate in section 2 of the Act of August 12 1955 Pub. L. 84-386 that the Bureau of Reclamation subject to specific exceptions integrate and coordinate operation of the TRD with the operation of other features of the CVP. In contrast the February 19 2020 Record of Decision on Reinitiation of Consultation on the Coordinated Long-Term Modified Operations of the Central Valley Project and State Water Project which is the subject of this ROC confirmed that "Seasonal operations in Trinity Reservoir would continue to be integrated with Shasta Reservoir operations and Reclamation would continue to implement the Trinity River ROD and lower Klamath River augmentation flows (from the 2017	The Trinity River Division is part of the CVP. Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives.

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	Lower Klamath ROD)."Reclamation staff have told the Tribe that a court order in PCFFA and California Natural Resources Agency v. Raimondo (Raimondo) Document 322Case Nos. 1:20-cv-00431 and 1:20-cv-00426-JLT-EPG (E.D. Calif.) obligates Reclamation to file a competed LTOP no later than December 2024 but that it cannot meet that deadline for TRD operations and therefore is excluding the TRD from its intended filing. The following is a brief statement of the status of that litigation compiled from the court record and the Courthouse News Service. In March 2022 the Raimondo court granted a motion for voluntary remand and initially stayed the case through September 30 2022. Subsequently the court granted federal defendants' and plaintiffs' request to extend the interim operation plan as injunctive relief with some modifications through December 31 2023. In approving the request the court said the 2023 interim plan continues provisions in the 2022 plan that enhanced or strengthened "loss thresholds" to protect salmonids migrating through the delta. The stay was subsequently extended through December 20 2024 with interim injunctive relief in effect through that date. See Dkt. #512. (04/02/24). The stay of all proceedings through December 20 2024 is intended to allow the federal defendants time to finish revising the biological opinions and to potentially enter a record of decision (ROD) by that date. The court has ordered periodic status reports throughout the stay. The current governing stay order envisions that a further request for stay is possible. On April 2 2024 the Court ordered that if Reclamation does not issue a New ROD by December 20 2024 the parties must provide a status report to the Court that describes the status of the consultation recommends a plan for interim operations and requests "a continued stay or other path forward in the litigation." Dkt. #512 p. 10.Thus the Court has not ordered that Interior/Reclamation issue any final decision on the LTOP by December 20 2024; rather the Court has stayed legal	

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	proceedings through that date to allow Interior/Reclamation to do its administrative work on the biological opinions and related environmental analysis without the press of simultaneous litigation. Given that the court's current order expressly envisions the possibility of a continued request for stay there is little reason to believe that the Court would deny a further extension of time to allow for comprehensive integration of the TRD analysis into the CVP/SWP LTOP analysis which would provide for more certainty finality and reduction of litigation risk as compared to the course that Interior/Reclamation are pursuing now.	
53-16	Reclamation's push to complete the CVP/SWP LTOP prior to December 20 2024 is problematic. First TRD water prohibited from diversion to the Central Valley and required to be released annually into the Trinity Basin varies in volume between 453000 and 865000 acre feet annually pursuant to the 2000 ROD. [Footnote 1: 2000 TRRP ROD (368600 815200 acre-feet; 2017 Flow Augmentation Releases ROD (35000 acre-feet); and 1955 TRD Act section 2 proviso 2 (not less than 50000 acre-feet). Provision should be made for TRD flow releases such as those used to address a spring chinook columnaris infection in the summer of 2021.] The ongoing TRD ROC will determine whether additional amounts of water are necessary going forward for restoration and protection of the Trinity fishery and at what times of year. That water and its associated hydropower generation for CVP use need to be accounted for in the LTOP. Waiting to address that volume of CVP yield and the timing of its managed releases for a year or longer after the adoption of the LTOP likely will mean that the LTOP will have to be reopened and the complex schedule (e.g. Slide 4) of consultation NEPA compliance science reviews and modeling reinitiated. In the Tribe's view a supplemental review process is inadequate for	The Trinity River Division is part of the CVP. Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives. Reclamation appreciates the time and resources the Hoopa Valley Tribe has invested in the Trinity River reconsultation and joint lead process. Reclamation will continue regular communication and coordination on Trinity River operations. Reclamation has added a mitigation measure (EJ-3) for including a meeting in Trinity County to hear from local interests on Trinity River–specific alternatives and potential impacts. Standard Response 8, Trinity River Division, includes Reclamation’s intention of completing a new Trinity River operation. NEPA provides for supplementation and ESA provides for reinitiation if a new action results in different impacts or different effects. Matters under ongoing litigation will be addressed through the relevant court processes.

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	those circumstances. Second our Tribe CVP and State Water Project contractors and the Raimondo court itself have an expectation of certainty finality and reliability regarding the LTOP. Reclamation officials have repeatedly informed us that they "want to get the Trinity right" in this ROC. Our Tribe expects its rights under the Law of the Trinity River to be fully and timely accounted for in the LTOP. Nonetheless the piecemeal approach currently being undertaken by Interior/Reclamation puts the Central Valley cart before the Trinity River horse. In other words excluding the Trinity Division yield from consideration in the LTOP to a later date will likely require reopening the LTOP for revisions administrative process third party consultation and potentially time-consuming and costly litigation all of which will be to our Tribe's detriment. Third this outcome is entirely avoidable. Contrary to the implication on Slide 10 that "Compliance on Central Valley actions [is required] no later than December 2024" that date is not a completion deadline but is simply the date through which litigation is currently stayed. That stay can be extended and a continuation of the stay is expressly contemplated in the most recent order. Raimondo Document 512 at page10. At paragraph 21 of Document 512 the court writes that it "retains jurisdiction to modify this Order as may be necessary and in the interests of justice . . . regarding compliance with this Order notwithstanding the stay also ordered here" (Emphasis added.) Finally in this regard the court's order staying litigation through December 20 2024 specifically provides for the parties to recommend a plan for "some other interval of time if consultation remains ongoing and to request a continued stay or other path forward in the litigation." Dkt. #512 p. 10. Accordingly federal defendants are in no way constrained from requesting an extension of the stay beyond December 20 2024 to get the Trinity "right" and integrated operationally as required by Reclamation law with the rest of the CVP. Fourth the Department	

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	itself has delayed completing the Trinity River Division component of the LTOP. All levels of the Department have failed or refused to address the legal policy and technical issues that our Tribe repeatedly has warned in writing intersect in the LTOP process. They remain pending in the Solicitor's office isolated from the regional staff and officials preparing the LTOP. Accordingly the Tribe requests that the federal government coordinate with California officials to report to the Raimondo court that they cannot complete a LTOP that integrates the TRD by December 2024 and ask for a meaningful extension of time. [Footnote 2: The Tribe intends to seek leave to file an amicus brief in the Raimando litigation to inform the Court that no complete LTOP on CVP operations can be completed by December 20 2024 due to the incomplete consultation on TRD operations which will not be completed until late 2025 under the current schedule. A copy of the Tribe's proposed amicus brief is attached to and incorporated into these comments on the DEIS.]	
53-17	E. Incorporation of Hoopa Comments on TRD ROC Process The Hoopa Valley Tribe is a co-lead in the ongoing Reinitiation of Consultation (ROC) on the Trinity River Division (TRD) component of the Long Term Operations Plan for the Central Valley and State Water Projects. In that process Hoopa has repeatedly advocated for coordination and integration of the TRD ROC process into the environmental review of the CVP/SWP LTOP. On July 9 2024 Hoopa wrote a letter to Interior/Reclamation leadership informing those leaders that it is unwise and likely unlawful for Interior/Reclamation to conclude the environmental review and enter a record of decision regarding the CVP/SWP LTOP prior to conclusion of the TRD ROC process. A copy of the July 9 2024 letter is attached and incorporated into these comments as well as the federal	Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives.

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	slideshow that was presented to Hoopa by federal representatives on June 27 2024.	
53-18	F. Conclusion Accordingly the Hoopa Valley Tribe objects to timing and insufficient modeling of Trinity Coho impacts in the DEIS and requests that its schedule and substance be revised consistent with these comments. Specifically no record of decision should be entered on the CVP/SWP LTOP until completion of the ROC on the TRD.	Please refer to Standard Response 8, Trinity River Division, for the process and timing associated with a separate evaluation of a Proposed Action and associated NEPA compliance for the Trinity River Division.
53-19	Attachment 1: Slide presentation from June 27, 2024 Deputy Commissioner Briefing.	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
53-20	Attachment 2: (Proposed) Amicus Brief of Hoopa Valley Tribe to the U.S. District Court for the Eastern District of California.	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
53-21	Attachment 3: Letter from the Hoopa Valley Tribal Council Re: Central Valley Project/State Water Project Long-Term Operations Plan, dated July 9, 2024.	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
53-22	Attachment 4: Letter from the Hoopa Valley Tribal Council Re: Comments of Hoopa Valley Tribe on July 26, 2024 Draft Environmental Impact Statement for the Long-Term Operations of the Central Valley Project and State Water Project, dated September 8, 2024.	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.

Table 4-54. Letter No. 54

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54-1	Thank you for the opportunity to provide comments on the Draft Environmental Impact Statement (DEIS) on the Long-Term Operations of the Central Valley Project (CVP) and State Water Project (SWP) released on July 26 2024. This letter is intended to reflect the comments of water and power agencies within the American River region that contract or have an agreement with Reclamation for the delivery of water specifically the City of Folsom City of Roseville City of Sacramento El Dorado Irrigation District El Dorado Water Agency Placer County Water Agency Sacramento County Water Agency Sacramento Municipal Utility District and Sacramento Suburban Water District.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
54-2	We would like to recognize that Reclamation has a difficult job. Managing the entire CVP in coordination with the SWP and attempting to address a host of water supply and ecological issues is not an easy task. Pushing one part of the system inevitably puts pressure on another part of the system and we understand that there are no easy answers when deciding how to balance conditions. We also would like to provide appreciation to Reclamation staff for coordinating with water and power agencies and the Sacramento Water Forum [Footnote 1: The Sacramento Water Forum is a diverse group of business citizen environmental water and government leaders working to balance coequal objectives: provide a reliable and safe water supply for the region's economic health and planned development through to the year 2030; and preserve the Lower American River's fishery wildlife recreational and aesthetic values.] in the Lower American River (LAR) region over the years. Because we are seeing water supply and ecosystem impacts continuing to negatively increase our region we would like to	Reclamation appreciates this comment and looks forward to continued cooperation with the Regional Water Authority and its member agencies.

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	further our existing coordination and more actively engage with Reclamation staff and leadership on CVP operations and potential options to offset those operations as it relates to Folsom Reservoir and the LAR. There are ways forward that can address some of the concerns outlined in this letter and we would like to discuss this with Reclamation. It is with this continued anticipation of coordination and problem-solving that we provide the following comments.	
54-3	Status Quo Approach Does Not Alleviate Controllable Stressors We have significant concerns with Reclamation's operational actions both past and present and the layering on of impacts associated with the Preferred Alternative - Alternative 2B: Multi-Agency Consensus combined with elements contained in the Incidental Take Permit application submitted by the California Department of Water Resources to the California Department of Fish and Wildlife (CDFW). Analysis in the document appears to discuss what would generally appear to be some smaller impacts associated with the Preferred Alternative overlain onto "existing conditions." This analysis also includes the same operations for Folsom Reservoir and the LAR as provided in the 2019 National Marine Fisheries Service (NMFS) Biological Opinion for the Long-term Operations of the CVP and SWP which is generally consistent with the March 29 2019 Memorandum of Understanding between the United States of America Department of the Interior Bureau of Reclamation and Sacramento Water Forum for the Coordination of Communication and Information-Sharing Activities Related to Lower American River Operations (Water Forum MOU).The DEIS analysis essentially states that the current fisheries situation in the Lower American River (LAR) is bad that a small margin of increased impact from the Proposed Action will be negligible and that Reclamation cannot do anything to rectify negative	The EIS has been prepared in compliance with NEPA and evaluates the reasonable range of direct, indirect, and cumulative potential impacts that may result from the alternatives. Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, and Standard Response 4, Alternatives Formulation, regarding the purpose and need for Reclamation's continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Also refer to Standard Response 2, Related Regulatory Responses, regarding the Reclamation's compliance with applicable laws and regulations. Reclamation is a federal agency and follows applicable federal laws and regulations. Please refer to Standard Response 3, Baseline and No Action, regarding the adequacy of the No Action Alternative as the baseline under NEPA. Please also refer to Chapters 4–22 regarding the analysis and discussion of potential environmental effects of the alternatives. Specifically, please refer to Chapter 12, Fish and Aquatic Resources, regarding potential impacts to fishery resources. Please refer to Standard Response 7, Aquatic Resources, regarding concerns about adverse project impacts on fisheries.

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	impacts that are part of existing conditions in this case the No Action Alternative (NAA). We do recognize that climate change and outside influences play a role statewide on aquatic ecosystem health. However it is important to note that Reclamation is afforded operational discretion on the CVP under the NAA and through modifications it can make to within the range of operations provided in the DEIS Preferred Alternative. Operations unlike climate change are a controllable factor. Even under the NAA operational decisions at Folsom Reservoir and the LAR have been frequently challenging and may come at a risk to the ecosystem. Continuing to operate to status quo on the American River when there is an indication that status quo is not serving the intended outcomes for riverine conditions is problematic particularly in light of the 2019 Modified Flow Management Standard that has been developed by diverse interests and contains varying measures to improve knowledge and operations on the LAR to benefit fisheries through more suitable conditions.	Alternative 4 explores changes to Folsom Reservoir operations described in the No Action Alternative. Please refer to Chapter 3, Alternatives, and Appendix E, Draft Alternatives, for a description of Alternative 4.
54-4	To provide an example related to the above-mentioned status quo discussion the 2024 National Marine Fisheries Service (NMFS) Draft Biological Opinion Regarding the Coordinated Long-Term Operation of the CVP and SWP (2024 NMFS Draft BiOp) July 25 2024 states that for California Central Valley Steelhead (CCV Steelhead) "[w]ater temperature will remain a significant stressor under the PA with exceedances that impair fitness predicted for several life stages notably 43-55% of months for egg incubation." In fact the Biological Assessment - Appendix AB Chapter 7 Steelhead states that the increase in water temperature for egg incubation and fry emergence is expected to be lethal in the American River. However the analysis provided in Appendix O Fish and Aquatic Resources Section 0.5.10.3-Lower American River Spawning and Egg	The water temperature analysis in Section O.5.10.3 of Appendix O, Fish and Aquatic Resources Technical Appendix, suggests both positive and negative water temperature–related impacts, depending on the phase and location (Watt Ave or Hazel Ave). The term "negligible" has been removed from the overall summary in the water temperature analyses for California Central Valley steelhead and Central Valley fall-run/late fall-run Chinook salmon in the American River, and the percent changes in favorable and unfavorable water temperature conditions have been added for context. Outputs are not representations of the actual water temperature experienced under a given model scenario and should be used only for a comparative analysis of alternatives. In addition to the

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	Incubation Water Temperature Analysis states that single-digit percentage changes exist when comparing Alternative 2 with the NAA and concludes that there would be negligible water temperature-related effects to CCV Steelhead spawning and egg incubation in the LAR. It is difficult to comprehend how an analysis can exist that can disclose temperature exceedances for 43-55% of months for egg incubation admits that status quo conditions and operations are "lethal" to a critical fish life stage and that adding on single digit percentage changes to a lethal condition is a negligible impact. If roughly half of eggs and juveniles are expected to perish under the NAA then why is the Preferred Alternative not considering actions to help offset these impacts? Additionally each single digit percentage addition of impacts from the Preferred Alternative onto such a high rate of mortality seems incrementally impactful to an already stressed population. While egg incubation and fry emergence was used here as an example this trend repeats itself over several life stages stressors and species (fall-run Chinook and CCV Steelhead).	inherent uncertainty associated with CalSim 3 modeling and the compounding uncertainty using CalSim 3 outputs as inputs to a secondary model, HEC5Q, there are several recognized sources of natural variation that lead to even more uncertainty. These additional sources include intraspecific variation in sensitivity to water temperature (i.e., not all fish will die if water temperature exceeds a threshold), variation in water temperature within the river channel, and variation in water temperature within the time-step of the model. Please see Standard Response 7, Aquatic Resources.
54-5	In addition we recognize the importance of learning and adapting operations based on the best available science. The Water Forum MOU was executed in the spirit of coordination gathering of information and the synthesis and disclosure of important data. If we learn that certain actions may alleviate certain impacts then we anticipate that there is space to make these changes and revise operations accordingly.	As explained in Draft EIS Chapter 3, Alternatives, Section 3.4.10, Governance, adaptive management is included in Alternative 2. Appendix E, Draft Alternatives, contains a full description of the adaptive management program in Section E.5.17. This program allows for consideration of information as it is developed during LTO. The concept is to use the potential flexibility provided by an adaptive management approach in a way that balances gaining knowledge to improve future management decisions while taking actions in the face of uncertainty to improve the operation of the CVP and SWP for their project purposes.
54-6	American River-Proposed Recommendations to Alleviate Impacts	Reclamation appreciates comments and outreach.

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	We appreciate that Reclamation has considered the requests of American River interested parties including the water providers providing these comments and the Sacramento Water Forum in including operational recommendations for the LAR into the DEIS. The recommendations we provided include actions to provide modified flows in certain situations which would fully actuate habitat while also maintaining additive end of December storage to protect the reservoir and river in the event of a dry following spring. These recommendations were not provided lightly and were given following years of study monitoring and coordination with Reclamation and others on stressors affecting fish in the river. As you are aware we provided a robust technical memorandum to Reclamation NMFS and CDFW on September 13 2023 titled 2023 Updates and Refinements to the Lower American River 2017 Flow Management Standard July 2023 as well as several e-mails and letters all part of the administrative record - requesting storage flow and process modifications. Reclamation included these suggestions as a sub-alternative of Alternative 4: Risk-Informed Operation Alternative 4B. Unfortunately Alternative 4 does not provide an accurate read on what is actually being proposed as a Preferred Alternative and how the American River recommendations could potentially fit into that and assist in reducing impacts from project operations. The Preferred Alternative (2B) does not include the American River recommendations we provided and instead relies as discussed above on status quo for operations for Folsom Reservoir and the LAR. Additionally only a qualitative analysis was done for Alternative 4B.	Refer to Standard Response 4, Alternatives Formulation, for additional information regarding the rigorous approach Reclamation undertook for the formulation of alternatives and the range of alternatives considered for analysis. Refer also to Appendix E, Draft Alternatives, for a description of the process used to focus and refine each of the alternatives, including Alternatives 2B and 4B, carried forward for detailed analysis. Appendix E of the EIS also notes that modeling shows that changes resulting from Alternative 4B are within the range of effects modeled for Alternative 4. Updated modeling for Alternative 4, which includes the recommendations previously in 4B, is provided in the Final EIS.
54-7	Mischaracterization of American River-Proposed Recommendations There appears to be a misunderstanding of the American River recommendations that formed the basis of Alternative 4B. In	Reclamation made two changes to Alternative 4 to incorporate the actions and assumptions of Alternative 4B. Reclamation decreased the maximum Minimum Release Requirement to 1,500 cfs from October through March. Reclamation also increased the end of

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	Section 12.2.10.1 of the DEIS the text states that "[i]f in a small number of years storage in Folsom Reservoir is increased up to 350 TAF and releases to the American River are decreased then Alternative 4B may result in have (sic) negative water temperatures and flow impacts to fall-run Chinook salmon and steelhead." This misconstrues the proposal provided by American River interested parties and does not accurately represent the timing of storage and flows proposed. As written in the DEIS it appears that there is an assumption that additional water would be held in storage and then Minimum Release Requirements (MRRs) would be reduced. The proposal from the American River interested parties includes adjusting the MRRs in two key ways. First in the late-winter months (February and March) when the hydrology is uncertain the MRRs are proposed to be calculated based on the 90% forecast (rather than the 50%). This allows for conservative management of water and protection of the coldwater pool development in the early spring when coldwater pool is critical. Second the fall MRRs are proposed to be adjusted based on updates to the Weighted Useable Area (WUA) curves and would allow for maximal habitat availability in the spawning season with a maximum fall MRR of 1500 cfs. The proposed fall MRRs acknowledge that Sacramento Water Forum-constructed habitat within the LAR reaches optimal conditions within the specified flow range. In the summer months the July through mid- September timeframe flows would be managed at Folsom Reservoir with consideration for the protection of coldwater pool by establishing an end-of-September planning minimum. Healthy storage and adequate coldwater pool storage in September are essential for fall-run Chinook for their peak adult migration and spawning period (October through December). Lower summer flows are of minimal concern for the LAR fishery as no fall-run Chinook spawning is occurring in the river during the July through mid-	December storage target for Folsom Reservoir from 275 to 350 TAF. Alternative 4 uses 90% exceedance forecasts to calculate the Minimum Release Requirement in the late-winter months. These changes reflect a conservative management approach of the coldwater pool in Folsom Reservoir. HEC5Q modeling indicates that with the changes to Alternative 4, there are a few warmer years at Watt Avenue.

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	September timeframe. Additionally reduced releases in the spring should help with holding more storage in the reservoir later in the year. We would ask that other systemwide impacts that were considered in association with Alternative 4B such as those associated with Shasta Reservoir and the Sacramento River or the Bay-Delta are reevaluated for the corrected seasonality.	
54-8	Dissolved Oxygen Issues on Lower American River Omitted from Analysis The DEIS and appendices do address dissolved oxygen (DO) to some extent in the Water Quality and Fish and Aquatic Resources sections and appendices. However we are concerned that for the Lower American River significant new information since EIS scoping has been omitted from the NAA as the baseline and in consideration of the Preferred Alternative. Historically it has been understood that in dry years DO levels decrease as temperature levels increase. However in September 2023 the Nimbus Fish Hatchery reported DO approaching stressful conditions and on October 20 2023 water column sampling reported DO levels below 3.0 mg/L below Lake Natoma. The U.S. Environmental Protection Agency recommends DO levels of at least 8 mg/L in California salmon-bearing streams; the 2019 Central Valley Regional Water Quality Control Board Basin Plan recommends DO of at least 7 mg/L from Folsom Reservoir to the Sacramento River to protect beneficial uses for freshwater habitat migration and spawning; and studies have shown that adult Chinook salmon begin to experience physiological stress at6.5 mg/L [Footnote 2: Carter K. 2005. The Effects of Dissolved Oxygen on Steelhead Trout Coho Salmon and Chinook salmon biology and function by life stage. California Regional Water Quality Control Board North Coast Region. August 2005]. Therefore conditions in the LAR below Lake Natoma were significantly worse than recommended for	As explained in Draft EIS Chapter 3, Alternatives, Section 3.4.10, Governance, adaptive management is included in Alternative 2. Appendix E, Draft Alternatives, contains a full description of the adaptive management program in Section E.5.17. This program allows for consideration of information as it is developed during LTO. The concept is to use the potential flexibility provided by an adaptive management approach in a way that balances gaining knowledge to improve future management decisions while taking actions in the face of uncertainty to improve the operation of the CVP and SWP for their project purposes. Reclamation will continue to address, as appropriate, concerns during real-time operations.

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	fish health. Additionally just last month as of August 15 2024 DO below Lake Natoma was approaching the fish physiological stress level of 6.5 mg/L. The DO situation in October 2023 followed on the heels of a year of extreme precipitation and high reservoir levels and the recent August 2024 DO situation is occurring following an average year with higher overall storage from runoff and from 2023. This means that new thinking related to operations on the LAR should evolve because it is apparent that low DO is not limited to dry and critical years only. Reclamation modified operations in response to the low DO levels by opening Nimbus Dam gates to enhance oxygen levels and by engaging a power bypass at Nimbus while a power bypass was also occurring at Folsom Dam which provides temperature as well as DO improvements for the fishery. We appreciate Reclamation's efforts and must emphasize that these operations appear to no longer be outliers only for dry years and should be anticipated more frequently. These changes based on inevitable future conditions should be addressed as part of the Preferred Alternative.	
54-9	No Analysis of Pre-Spawn Mortality on the Lower American River Fall-run Chinook salmon move up the LAR to spawn in mid-September through January and peak from mid-October through December and represent the largest runs of Chinook salmon found in California's Central Valley [Footnote 3: Grimes T. and Galinat A. 2022. Lower American River Fall-run Chinook Salmon Escapement Survey October 2021-January 2022.].	The Draft EIS did not include analysis of pre-spawn mortality because there is no readily available data or model on pre-spawn mortality in the American River.
54-10	Appendix O Fish and Aquatic Resources Adult Upstream Migration and Holding Summary states "Differences in seasonal operations in the lower American River between the four phases of Alternative 2 and the No Action Alternative are expected to have a mixed negative and also impact on upstream migrating fall-run Chinook salmon average monthly flows at below Nimbus	The Draft EIS did not include analysis of pre-spawn mortality because there is no readily available data or model on pre-spawn mortality in the American River. Refer to Standard Response 7, Aquatic Resources, regarding comments on the aquatic analyses in the EIS, including potential

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	Dam may increase in December and January a beneficial impact but decreases may occur in September through November during critically dry type years a negative impact. Differences in temperature between the four phases of Alternative 2 and the No Action are expected to have a beneficial impact on upstream migrating fall-run Chinook salmon. There would be increases in favorable conditions and similar unfavorable conditions for successful migration [sic] for successful migration. There would be similar conditions for pathogen virulence. "This analysis discloses impacts related to flow changes and temperatures but it does not consider nor discuss pre-spawn mortality of female fall-run Chinook in the LAR. The average pre-spawn mortality rate from 2000 to 2021 is 21 percent [Footnote 3: Grimes T. and Galinat A. 2022. Lower American River Fall-run Chinook Salmon Escapement Survey October 2021-January 2022.] but singular years have been as high as 29 percent (2012) and 26 percent (2020). Because it is so high pre-spawn mortality was one of the driving factors behind the American River interested parties' recommendations for holding more storage in Folsom Reservoir during the July through mid-September time frame which would allow more ability for attraction flows during peak up migration in October through early December. We request an analysis of pre-spawn mortality of female fall-run Chinook on the LAR and the Preferred Alternative's potential impacts.	impacts on fall-run Chinook salmon. Analyses of potential impacts and benefits to aquatic resources are described in EIS Chapter 12, Aquatic Resources, and in Appendix O, Aquatic Resources Technical Appendix. Alternative 4 includes modifications to the Flow Management Standard that allows for higher end-of-December storage.
54-11	Single-Species Approach to Species Management Occurs to the Detriment of All The DEIS "prioritizes storage of water in Shasta Reservoir for water temperature management during multiple years of drought and results in reduced temperature dependent mortality during egg incubation." We appreciate the considerable effort it has taken for five state and federal agencies to agree on a singular alternative. We also remain	Refer to Standard Response 4, Alternatives Formulation, regarding the process used to identify, evaluate, refine, and select a reasonable range of feasible alternatives to be evaluated in the Draft EIS. Refer to Standard Response 7, Aquatic Resources, regarding the approach used to assess adverse effects on aquatic resources in the EIS. As evidenced by the analysis in this EIS and the Biological Assessment attached as Appendix AB, Reclamation focuses on

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	apprehensive of focusing efforts primarily on Shasta Reservoir and redirecting impacts elsewhere in the system. This redirection of impacts whether it be large or small in association with the Preferred Alternative is additive and each additive impact creates an amalgam of negative effects in the LAR. Each decision made related to CVP operations in one tributary has the potential to push impacts onto other tributaries. We are sympathetic to the plight of Winter-run Chinook salmon but are concerned that focusing primarily on a single species precludes more comprehensive and holistic approaches that could lead toward the recovery and survival of multiple species.	multiple listed and unlisted species.
54-12	Thank you again for the opportunity to comment on the DEIS for the Long-term Operation of the CVP and SWP. If you have any questions please contact me at [phone number redacted] or at [email redacted].	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.

Table 4-55. Letter No. 55

Ltr#-Cmt#	Comment	Response
55-1	From: [name and email address redacted] Sent: Monday September 9 2024 9:25 AM To: BDO Comments BOR MPR Cc: [name redacted] Subject: [EXTERNAL] Comments on draft EIS for the Long-Term Operation of the CVP and SWP Attachments: WCT CVP DEIS cmts 2024.pdf To Whom It May Concern: DEIS comments from Water Climate Trust are attached and pasted below. Sincerely [name redacted] Engagement Director Water Climate Trust [email address and phone number redacted] September 9 2024 U.S. Bureau of Reclamation Attention Bay-Delta-Office 801 I Street Suite 140 Sacramento CA 95814Via email to: sha-MPR-BDO@usbr.gov RE: Comments on draft EIS for the Long-Term Operation of the CVP and SWP To Whom It May Concern:	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
55-2	Please accept Water Climate Trust's comments about the Draft Environmental Impact Statement for the Central Valley Project (CVP) and State Water Project (SWP) Biological Opinion. Water Climate Trust (WCT) is a non-profit organization working in California and throughout the U.S. West to restore freshwater ecosystems with Indigenous communities and other stakeholders who depend on them for food jobs health recreation and cultural survival. Water Climate Trust and the stakeholders with whom we work are deeply troubled by the amount of water that the agencies' preferred Alternative 2B would take from our struggling northern California salmon rivers and streams to slake the unquenchable thirst of corporate agriculture in the Central Valley.	All the alternatives, including the No Action Alternative, include the continued implementation of the 2000 Trinity ROD flows.
55-3	We implore you to instead advance Alternative 3 and procedurally connect it to the interrelated Trinity River bi-op instead of compartmentalizing your actions. Please also ensure	Support for Alternative 3 is noted.

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	that Alternative 3 provides instream flows that are sufficient for survival and recovery of endangered species and that it contains provisions to automatically adjust instream flows if species populations do not show signs of recovery. Justification for these requests is detailed below.	Please refer to Standard Response 8, Trinity River Division, for information on the steps for future modifications to Trinity River operations.
55-4	Urgency of Need This process is a long overdue opportunity to rectify the serious problem of the Central Valley and State Water Projects diverting far too much Sacramento and Trinity River water at a dire expense to northern California's local watersheds Indigenous and other frontline communities and plummeting salmon populations. Decades of operation under outdated selectively-enforced BiOps and water laws have severely reduced salmon populations leading to annual commercial fishing closures and the loss of access to this vital resource for many Native tribes. As the world watches the demolition of the Klamath River dams with joy and renewed optimism the Sacramento River and the Trinity River one of the Klamath's most important tributaries continue to be depleted at an alarming rate. You have the chance now to rectify this long-standing injustice but instead appear poised to double down on perpetuating and even worsening this environmental and cultural tragedy.	Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, for comments regarding support and opposition to the project. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis in the EIS, including the use of best available science to identify potential adverse impacts and to formulate effective mitigation measures. Refer to Standard Response 8, Trinity River Division, regarding the consideration of Trinity River operations in the EIS and future environmental review processes anticipated for the Trinity River.
55-5	Deficiency of Preferred Alternative and Process The DEIS currently favors Alternative 2b which relies heavily on vague undefined and generally ineffective Voluntary Agreements with California's largest water users and big ag. There is a wealth of data on how Voluntary Agreements don't work which at the urging of California water diverters seems to have been almost completely ignored. Alternative 2b constitutes little to zero improvement on the 2019 Salmon BiOp that resulted in two totally closed fishing seasons and put all salmon runs affected by the Central Valley Project at significantly higher risk of extinction.	Alternatives 2 and 2B were developed in coordination with the resource agencies, including USFWS, NMFS, CDFW and DWR. Please refer to Chapter 3, Alternatives, and Appendix E, Draft Alternatives, for detailed information of all of the alternatives, including Alternatives 2 and 2B. Refer also to Standard Response 10, Voluntary Agreements, regarding voluntary agreements representation in Alternatives 2 and 2B.

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	You can - and must - do better if our salmon are to have even a chance of recovery.	
55-6	Tribal outreach and engagement on an issue so central to these cultures has been deeply insufficient especially with Tribes and marginalized communities in the Central Valley. This is in direct opposition to the Racial Equity Action plan approved by the State Water Board in 2023 and the Bureau's Tribal Trust Responsibilities. Furthermore the DEIS only focuses on the Klamath and Trinity River for Tribal Beneficial Uses (TBUs) when there are many more Tribes in the large expanse of the Sacramento River Watershed/Central Valley that will be negatively affected by these projects.	Reclamation follows all applicable laws, including those for Tribes and marginalized communities. As described in Chapter 23, Other NEPA Considerations, of the Draft EIS, Reclamation continues to coordinate with interested Tribes on CVP operations. For a discussion of project impacts on marginalized communities and racial equity, see Chapter 17 and Appendix T for an analysis on Environmental Justice. Mitigation Measure EJ-1 (Increasing Participation with Tribal, Minority, and Low-Income Populations) addresses the four key issues for Indigenous people and minority, low-income, reluctant, or unknown public members to address information sharing and increased opportunities, consistent with the Bipartisan Permitting Reform Implementation Rule, DOI Equity Action Plan, and Reclamation's Directives and Standard on Public Involvement in Bureau of Reclamation Activities. The EIS focuses on the Indian Trust Assets that are affected by changes in water quality, erosion, and salmon populations that would be affected by project operations. Nineteen tribes were invited to be cooperating agencies on development of the Draft EIS; however, none of them accepted the invitation.
55-7	Alternative 2b is also not economically feasible nor considerate of climate change and water supply issues. There is a higher return on investment of climate resilience with Alternative 3. Given both the Biden administration's and Gov. Newsom's commitment to engaging Tribes - this would be a great opportunity to work with all communities across the North Delta Sacramento River and their tributaries to support flows for fish	Reclamation believes that Alternative 2B meets the screening criteria, including feasibility. Please refer to Standard Response 9, Climate Change, regarding consideration of climate change in the analysis provided in the EIS. Reclamation invited 19 Tribes to be a cooperating agency for development of the Draft EIS. None accepted the invitation. Support for Alternative 3 is noted.

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	and fish-dependent communities protect and restore Tribal Beneficial Uses and support climate resiliency. Instead the decision-makers are leaning toward once again propping up unsustainable industrial agricultural profits at the expense of all other stakeholders.	
55-8	Furthermore your analysis has not yet taken a hard look at the cumulative impacts of the related Sites Reservoir and Delta Conveyance Project (Delta Tunnel) whose operations further threaten salmon habitats and could lead to their extinction in the Bay Delta and Central Valley watersheds.	The EIS evaluates potential cumulative impacts in compliance with NEPA. Please refer to Chapters 4–22, which address cumulative impacts for each environmental resource evaluated, as well as Appendix Y, Cumulative Impacts Technical Appendix, regarding the consideration of Sites Reservoir and the Delta Conveyance Project in the cumulative analysis. Text in the chapters has been updated to specifically include the Delta Conveyance Project and Sites Reservoir projects.
55-9	It is imperative that the BiOps prioritize better protecting instream flows and lower water temperatures to ensure the survival and recovery of salmon and the well-being of communities that rely on them.	The Biological Opinions are developed by USFWS and NMFS through the ESA Section 7 consultation process. Please see Standard Response 2, Related Regulatory Processes.
55-10	I implore you to choose Alternative 3 in the Long-term Operations of the State Water and Central Valley Projects.	Support for Alternative 3 is noted.
55-11	Omission of Connected Processes and Cumulative Impacts for Trinity River The Trinity River has been left out of the analysis altogether despite the fact that up to 50% of its water (and up to 90% at the point of diversion) is diverted to the Sacramento expressly to feed these projects. The decision to defer action on the Trinity River until completion of a subsequent Biological Assessment (BA) Biological Opinion (BO) and possible Supplemental EIS (SEIS) for the Trinity River as stated in Section 0.5.2 on page 0- 52 puts the proverbial cart way before the horse. Inadequate temperature requirements inadequate Trinity Lake carryover storage and the impact from the Voluntary Agreements on Trinity Lake cold water storage are all issues that	Refer to Standard Response 8, Trinity River Division, regarding the consideration of Trinity River operations in the EIS and future environmental review processes anticipated for the Trinity River. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the sufficiency of the cumulative effects analysis.

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	require immediate mitigation in this DEIS not deferment to a later date. The central problem with the DEIS's approach is that current operational conditions and targets for the Trinity River already impact Trinity Coho and Chinook and are included in most alternatives. The 56F North Coast Basin Plan temperature objective for the Trinity River and the 56F temperature requirement in Water Right Order 90-5 are not protective enough to prevent Temperature Dependent Mortality (TDM) of salmon. In fact 56F has been proven to kill 100% of coho eggs. The analysis and decision for this process should include full temperature protection for Trinity River Chinook and Coho instead of completely ignoring it. Instead BOR does not recognize the summer 60F North Coast Basin Plan temperature objective to protect migrating and holding state-threatened Spring Chinook as a requirement. According to the SWRCB the 56F temperature requirement for the Trinity River only applies when Reclamation is actively diverting water from the Trinity River to the Sacramento River for temperature control. Therefore when BOR is not actively diverting water to the Sacramento River for temperature control but for other purposes such as water supply hydropower or Delta water quality there are NO temperature protections for the Trinity River whatsoever. This is likely a violation of the ESA and constitutes compartmentalization of actions.	
55-12	There are also significant cold water storage carryover issues at Trinity Lake. The 600000 AF minimum carryover storage requirement that the DEIS relies on is wholly inadequate for temperature protections. In 1992 Balance Hydrologics found that a minimum carryover storage of 900000 AF was necessary to meet Basin Plan temperature objectives. BOR's own 2012 report found that carryover storage requirement of less than 750000 AF was "problematic" in meeting state and federal Trinity River	Infrastructure modifications are outside the scope of this EIS. Please refer to Standard Response 8, Trinity River Division, regarding the consideration of Trinity River operations in the EIS and future environmental review processes anticipated for the Trinity River. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the sufficiency of the cumulative effects analysis.

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	temperature objectives protective of the fishery. Furthermore BOR's Mid-Pacific office also produced a preliminary technical memorandum on the problem of excessive heating of Trinity Dam water releases when they pass through the shallow 7-mile-long Lewiston Reservoir. Summer heating in Lewiston Reservoir can be severe unless approximately 1300 - 1800 cfs is being released from Trinity Dam. Given that Trinity River summer base flows are only 450 cfs water must be diverted to the Sacramento to keep the Trinity cold enough to meet Basin Plan temperature objectives. However during severe drought or under certain operational circumstances there may not be adequate water to both provide base fishery flows and divert water to the Sacramento to keep the Trinity cold. Several structural solutions have been identified in BOR's preliminary technical memorandum; however a full feasibility study and environmental document would need to be prepared to select a solution and no such plans exist at this time. SWRCB Water Quality Order 89-18 and WRO 90-5 promised full Trinity River temperature protection through a water right hearing more than 30 years ago. That promise has yet to be fulfilled and Trinity River salmon remain at high risk of TDM. Mitigation is required.	
55-13	In addition to taking action within the plan and the final decision to at minimum rectify its known violations in the Trinity it also needs to be informed by the in-development Trinity River Bi-Op in a more meaningful way. As you well know this separate environmental analysis and document on flows and endangered species in the Trinity River will be deeply relevant to the long-term water operations plan for the Central Water and State Water Projects. Despite this your agency does not plan to hold separate public hearings and has said that people can comment on the yet-to-be released plan at the Bay Delta watersheds plan hearings. This cart before horse process of making decisions for	The Trinity River Division is part of the CVP. Please refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD and future public engagement.

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	the Water Projects before even knowing what the Trinity River can afford to lose is outrageous.	
55-14	While it is important to have a separate Trinity River Bi-op that is informed by full Tribal and other stakeholder participation this incomplete public process does not in fact provide sufficient avenues for Tribal individuals or other stakeholders to engage. Also there will almost certainly be some alternatives in the plan that could be devastating for the Klamath and Trinity River people species and water quality. We are owed an opportunity to directly and meaningfully engage in it. There needs to be a proper public engagement process for the Trinity. Failure to incorporate a full assessment of how this project contributes to the decline and possible extinction of threatened and endangered species on the Trinity constitutes compartmentalization of actions and failure to assess or disclose its cumulative impacts.	Please refer to Standard Response 8, Trinity River Division, regarding anticipated future environmental review processes, including public outreach associated with Trinity River operations. In addition, refer to EIS Chapter 23, Other NEPA Considerations, which addresses Reclamation's ongoing Tribal consultation efforts (Section 23.4.3, Tribal Consultation). Reclamation has complied with Section 106 of the National Historic Preservation Act requirement to consult with the State Historic Preservation Officer, Indian Tribes, and other consulting parties.
55-15	One of the (Many) Problems With Voluntary Agreements: Trinity Lake The Preferred Alternative 2b includes the proposed Voluntary Agreements (VA) submitted for the Bay-Delta Plan Update. The DEIS does not disclose that these VA's adversely impact storage at Trinity Lake. This is a new negative impact that is part of the Preferred Alternative. It can only be mitigated through new mitigation measures included as part of this DEIS Biological Opinion not deferred to a later date for an as-yet undefined process. Analysis of the impact on Trinity cold water storage from the VA's can be found in the Draft Staff Report for the Bay-Delta Plan update Appendix G3a figures G3a-72 and G3a-73 on page G3a-80.	Refer to Standard Response 10, Voluntary Agreements, regarding voluntary agreements represented in Alternative 2 and Alternative 2B. All the alternatives, including the No Action Alternative, include the continued implementation of the 2000 Trinity ROD flows.
55-16	Alternative 3 Is the Only Reasonable Alternative As Tribal citizens Intertribal organizations conservationists and fishing community members have repeatedly stated throughout this process Alternative 3 (Modified Natural Hydrograph) which	Support for Alternative 3 is noted. Please see Standard Response 4, Alternatives Formulation, regarding alternatives development and the range and feasibility

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	protects fisheries and increases instream flows into the Delta is the only alternative that meets the purpose and need of the Biological Opinion. It would still provide some water to the Projects while also prioritizing the survival and recovery of the watersheds it feeds from. Such major water projects must be based in science and adaptive to changing conditions to sufficiently protect and recover threatened and endangered species. This is the ONLY alternative that does that.	of the alternatives evaluated in the EIS. Refer to Appendix E, Draft Alternatives, for a description of the screening process used to focus and refine each of the alternatives carried forward for detailed analysis.
55-17	Conclusion: FEIS and ROD Must Advance Alternative 3 and Take Hard Look at Trinity Impacts The BOR's preferred Alternative 2b is a terrible choice for salmon and other native fish that are on the brink of extinction. It is not even legally defensible under the ESA, nor is it a viable alternative for the Native people who depend on salmon for ceremony and sustenance or the sportfishing community that depend on them for their livelihood. It is highly unlikely that Alternative 2b would prevent localized salmonid extinctions, much less accomplish the legal mandate to support recovery of these imperiled species. Please change paths to pursue robust implementation of Alternative 3, and fully integrate assessment and conservation of Trinity River water and ecosystems into your final decision.	Support for Alternative 3 is noted.
55-18	Please incorporate by reference comments submitted by California Sportfishing Protection Alliance et. al. and Pacific Coast Federation of Fishermen's Associations. Thank you for the opportunity to comment. We hope you take our concerns seriously and act to improve the plan and its related processes as requested. Sincerely [name redacted] Engagement Director Water Climate Trust [See original comment for letter dated September 9 2024]	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.

Table 4-56. Letter No. 56

Ltr#-Cmt#	Comment	Response
56-1	The U.S. Environmental Protection Agency has reviewed the Bureau of Reclamation's above-referenced document pursuant to the National Environmental Policy Act Council on Environmental Quality regulations (40 CFR Parts 1500-1508) and our NEPA review authority under Section 309 of the Clean Air Act. The CAA Section 309 role is unique to EPA. It requires EPA to review and comment on the environmental impact on any proposed federal action subject to NEPA's environmental impact statement requirements and to make its comments public. The EPA is also serving as a cooperating agency. We provided scoping comments (March 30 2022) and additional comments via review of the administrative draft of the EIS (April 19 2024). Reclamation's federal action through the Preferred Alternative 2B is to modify the operation of the Central Valley Project in conjunction with the State Water Project to meet multiple authorized purposes including flood control and navigation; water supply; fish and wildlife mitigation protection and restoration and enhancement; and power generation. To accomplish this Reclamation considers the operation of dams power plants diversions gates and related facilities of the Central Valley Project and the Delta facilities of the State Water Project. Reclamation has proposed reinitiating consultation under the Endangered Species Act to modify requirements from the 2019 Biological Opinions. This Draft EIS evaluates the environmental impacts that would result from the implementation of the modifications pending approval by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
56-2	Review Summary: EPA identified public health welfare or environmental quality concerns in the analysis that EPA	This paragraph is introductory text that describes the organization’s key concerns included in the comment letter with

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	recommends be addressed in the Final EIS. The attached detailed comments include recommendations for protecting water quality aquatic resources and additional support to strengthen the assessment of impacts. The Draft EIS indicates that the proposed project would have significant impacts to water quality and aquatic resources in the bay delta estuary (represented as no change from the No Action or otherwise no change from applying current operating criteria) and therefore active management would be required to ensure water quality is not degraded. It is unclear however what actions Reclamation would commit to prevent water quality degradation in an already stressed environment. If the proposed project contributes to a general increase in salinity in the Delta Reclamation and the Department of Water Resources would have less flexibility for operating the system to protect beneficial uses and drinking water quality. Through the enclosed comments EPA provides recommendations regarding these issues and others to consider while preparing the Final EIS.	more specific comments to be provided as noted by the commenter. Reclamation operates to applicable standards and regulations related to water quality and aquatic resources. The No Action Alternative is the appropriate baseline under NEPA, as explained in Standard Response 3, Baseline and No Action. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis in the EIS to identify potential adverse impacts and formulate effective mitigation measures.
56-3	The EPA appreciates the opportunity to provide comments and when the Final EIS is available please notify [name and email address redacted]. If you have any questions please contact me at [email address redacted]. Sincerely [name redacted] Acting Manager Environmental Review Section 1 Enclosures: EPA's Detailed Comments CC: [names redacted]	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text. It is not a comment on the contents of the EIS.
56-4	EPA'S DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR LONG-TERM OPERATIONS OF THE CENTRAL VALLEY PROJECT AND STATE WATER PROJECT CALIFORNIA SEPTEMBER 9 2024 Water Quality The Bay Delta Water Quality Control Plan (WQCP) contains electrical conductivity (EC) objectives for the Delta to protect agricultural and fish and wildlife beneficial uses and chloride	The analysis of effects of the alternatives on electrical conductivity (EC) in the EIS, supported by Appendix G, Water Quality Technical Appendix, specifically addresses the potential for water quality degradation and effects on beneficial uses. The "Effects on Electrical Conductivity" subsection within Appendix G, Section G.2.4.1 shows modeled EC under Alternative 2 is higher in September and October compared to the No Action Alternative, as noted in the comment, and also how modeled EC under

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	objectives to protect municipal and industrial water supply beneficial uses. These vary by month location and water year type. The Draft EIS discusses impacts to water quality throughout the document including Chapter 4 Appendix F G and D and provides quantitative analyses on how water bodies in the bay delta would be affected by long-term operation of the CVP and SWP. The Draft EIS estimates that EC and chloride concentrations would remain the same under all scenarios of Preferred Alternative 2 when compared with the No Action Alternative (p. 0-7). The No Action Alternative is defined by current 2019 Biological Opinions. However Appendix G states the following: Modeled monthly average EC levels in the San Joaquin River at Jersey Point Prisoners Point and San Andreas Landing and the Sacramento River at Emmaton and Threemile Slough are modeled to be slightly higher in September and October under all phases of Alternative 2 relative to the No Action Alternative for the full simulation period (Table G-36). Increasing salinity may further contribute to existing EC water quality impairments in the western Delta and degrade beneficial use protection for agricultural and aquatic life beneficial uses. Across all four phases of Alternative 2 there would be lower flows in the spring; changes in flow in the Stanislaus River below Goodwin Dam would generally decrease in October January and March through June with flows increasing in all other months when compared to the No Action Alternative (p. 4-5). Lower flows in March through June compared to the NAA is contrary to the State Board's science findings that flows well above current conditions are needed to protect sensitive salmonid life stages during spring in the Stanislaus River under the Phase 1 Updates to the Bay Delta Plan. The Draft EIS states that CVP and SWP would continue to be operated in real-time to meet the Bay Delta WQCP EC and chloride objectives for protection of Delta beneficial uses and concludes that additional impairments to the Delta's beneficial uses related to salinity	Alternative 2 is lower in most other months of the year. Notably, modeled EC is lower in months when the Bay-Delta Plan EC objectives for protection of agricultural and fish and wildlife beneficial uses apply. Therefore, the EIS appropriately concluded, based on the modeled EC differences, that Alternative 2 would not contribute to agricultural or fish and wildlife beneficial use impairments. Therefore, additional steps and mitigation to meet the Bay-Delta Plan objectives is not required. The analysis of effects is appropriately conducted using results of hydrologic and hydrodynamic models in comparative analysis. Compilation and use of historical data would not inform identifying effects of the alternatives relative to the No Action Alternative. Please refer to Standard Response 3, Baseline and No Action, regarding the appropriate baseline of a No Action Alternative used for the purposes of the NEPA analysis. Please also see Standard Response 6, Hydrologic Modeling and Surface Water Resources, regarding the appropriate use of models for the purposes of comparative analysis. Please see the Executive Summary regarding refinements to modeling and associated results and analysis provided in the Final EIS. The Record of Decision will meet all requirements for describing objectives and commitments. Regarding analysis of effects with and without TUCPs, modeling of Alternative 2 consisted of runs with and without TUCPs, and results and discussion are provided in Appendix G.

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	would not be expected under the action alternatives compared to the No Action Alternative (p. 4-13). EC concentrations in the bay delta are already at or near the EC water quality objective. The Draft EIS does not clearly outline what additional steps could be taken during real-time operations to prevent increase of EC under the alternatives and who would be responsible for meeting the objectives. Compared to the No Action these operational components would not be entirely different from the No Action which is defined by current 2019 Biological Opinions without habitat restoration (p. 0-7 4-2 and other numerous references to no change). Appendix F shows model outputs with decreases in spring delta outflow from implementation of Alternative 2 (more details are included in Delta Outflow tables in Appendix F part 1 pgs. F.2-2-901). The State Water Board has adopted water quality standards including flow objectives including 40% of unimpaired inflow in the Stanislaus River in February through June for Alternative 2 as the state board determined this is the unimpaired flow needed for protection. Recommendations: In the Final EIS describe mitigation measures that would allow the proposed project to be implemented without increased exceedances of water quality standards in the already-degraded Delta. These measures may include the reduction of exports to provide more outflow and mitigate salinity intrusion. Clearly identify the water quality objectives that the proponents intend to meet by fine-tuning reservoir storage and exports in real time and clearly state this as an enforceable commitment in the Final EIS and Record of Decision (ROD). Provide historical data to illustrate how water quality standards have been met in the past including modifications because of drought conditions. Although Temporary Urgency Change Petitions (TUCP) were included in the modeling of the Proposed Action we encourage the consideration of specific operating criteria to meet water quality and flow requirements and the full analysis of the effect that reducing	

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	Delta outflows could have on future water quality conditions without the use of emergency changes.	
56-5	The Draft EIS discusses how droughts are incorporated into the CalSim model for water supply and quality impact analysis and acknowledges that drought can and has altered hydrology in the Delta (page 9-139); however contingency procedures for severe droughts are not discussed in the document. In prior drought conditions multiple water quality objectives were not met resulting in a substantial impact on aquatic life beneficial uses throughout the study area. Additionally the inclusion of four different versions of the Proposed Project makes it very difficult to evaluate what Reclamation's proposed action is and its environmental impacts especially since one of the modeled outcomes is the inclusion of the TUCPs which are temporary emergency changes to water rights requirements. Recommendations: In the Final EIS discuss the need to develop drought contingency procedures that protect aquatic life beneficial uses during drought conditions including the protection of ESA listed species. Provide a description of the adjustments to the Reasonable and Prudent Alternatives made during the current drought conditions and report their impacts on covered fishes. EPA recommends that Reclamation commit to include in its ongoing monitoring and reporting program any deviations from the Biological Opinions for drought conditions. Discuss all changes affecting implementation of water quality standards (including changes to compliance locations) under the Alternatives. Evaluate multi-year extreme drought conditions similar to the 2012-2016 and 2020-2022 periods in the Final EIS and specific operating criteria proposed for these conditions that do not increase reliance on TUCPs. General EPA is concerned that the synthesis of the information required for decisionmakers and the public to understand the proposed project and its effects on	Please refer to Chapter 3 and Appendix E for a detailed description of Alternative 2 phases as opposed to Alternative 2 versions. Refer to Chapter 3, Draft Alternatives and Appendix E, Draft Alternatives for a discussion of the Drought Tool Kit as it relates to applicable alternatives. Refer to Standard Response 6 Hydrologic Modeling and Surface Water Resources regarding modeling assumptions and output analysis of droughts. The cyclical nature of California hydrology and the resulting effect on federally listed species warrants special consideration for operation during droughts. Although each drought is unique, contingency planning can facilitate an adequate response. California experiences variable climate, and periods of droughts are a recurring feature. Water stored in CVP and SWP reservoirs and groundwater basins mitigate droughts. Multi-year droughts occur when two or more successive years are dry, and reservoirs and groundwater reserves are depleted. During these periods, Reclamation in coordination with DWR would develop a Drought and Dry Year Planning Tool Kit which focuses on actions to implement as intervention measures during hydrologic years with drought and dry conditions. The Drought Toolkit would be developed within 18 months of executing a Record of Decision, The Drought Toolkit includes actions that can either mitigate or avoid impacts throughout the Central Valley. As discussed in Chapter 3 Alternatives, the Drought Toolkit is a common component of the LTO of the CVP. Refer to Chapter 4, Water Quality and Appendix G, Water Quality for an assessment of water quality impacts associated with the alternatives. The potential for project operations to change the

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	the environment is not adequately presented in this EIS. Although NEPA requires that EISs be concise clear and to the point they are also required to be supported by evidence that the agency has made necessary environmental analyses and the document length should also be proportional to potential environmental effects and project size (40 CFR Part 1502.1 1502.2(b)(c)). A lot of data has been collected and a lot of models have been run and the EPA recommends that Reclamation summarize the information and make clear informed and data-driven statements and conclusions in the EIS that are based on the best-available science modeling results and other methods of data collection. Recommendations: Define significance for each environmental impact considering both context and intensity (40 CFR Part 1501.3(d)). Begin each resource chapter with a definition of the thresholds used to determine significance of impacts. Illustrate how Reclamation has determined why some impacts would be beneficial adverse less than significant etc. Apply significance thresholds consistently throughout the Alternatives and Resource chapters. Accurately describe and explain differences between thresholds under NEPA and ESA (for the Biological Assessment). In the Final EIS clarify the actions (programmatic and/or project-level) this environmental review process would support (see p. 4-2). Specifically when the Record of Decision is signed clarify what actions would be supported by it. Please identify if specific actions are identified and described because they would be offsetting negative impacts from the proposed action. For example clarify whether TUCPs included under the Proposed Action are intended to receive ESA coverage as part of this project. EPA recommends including a discussion of the Delta region and communities and the impact of water operations on their communities. Include communities that rely on subsistence fishing live and recreate in the Delta and would be impacted by	potential for public exposure to toxins from consumption of fish or contact with CHABs is discussed in Chapter 21 Public Health and Safety. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, for the overall structure of consideration of impacts to comply with NEPA regulations, the adequacy of the analysis in the EIS, and how Reclamation will determine appropriate mitigation measures as part of the process of developing and approving the ROD. Individual subject-matter experts did not use a standardized descriptor for impacts, and there were no set descriptors established that overlapped analysis throughout the document. Due to the extensive and diverse nature of the information, it was not appropriate to set universal descriptors. For example, a 1-5% increase in flows may be categorized as minimal while a 4% increase in survival (within that 1-5% range) may not be minimal, particularly in a dry or critically dry water year type. A 5% increase in flows in the mainstem Sacramento River will not be categorized the same as a 5% increase in flows in Clear Creek. Subject matter experts integrated the information to provide the analysis in the EIS, as it was not deemed appropriate to use set descriptors and these determinations were left to expert judgment. Note that there is no RPA for the long-term operations of the CVP and SWP under the 2019 Biological Opinions. Refer to Standard Response 2, Related Regulatory Processes regarding coordinated NEPA Review and ESA studies and processes. Refer to Standard Response 7, Aquatic Resources, regarding impacts on covered fishes and other aquatic resources described in Chapter 12, Fish and Aquatic Resources and the results from

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	increased or decreased flows as a result of project operations including Harmful Algal Blooms.	the biological models described in Appendix O, Fish and Aquatic Resources Technical Appendix. Insofar as communities may rely on subsistence fishing, impacts to public health are addressed in Chapter 21 and Appendix X, Public Health. They address potential changes in methylmercury production and resultant changes in bioaccumulation in fish for human consumption. The public health chapter and appendix also address changes in the potential for public exposure to cyanotoxins due to an increase in CHABs. Impacts to recreational opportunities are addressed in Chapter 16 and Appendix S, Recreation.
56-6	Climate Change In California one of the effects of climate change include increases in temperature that could affect the timing and quantity of precipitation. Over the past century the precipitation mix between snow and rain has shifted in favor of more rainfall and less snow and snowpack in the Sierra Nevada is melting earlier in the spring. The average early spring snowpack in the Sierra Nevada has decreased by about 10% during the last century a loss of 1.5 million acre-feet of snowpack storage (p. M-4). These changes have significant implications for water supply flooding aquatic ecosystems energy generation and recreation throughout the state. It is unclear from the document how climate change would be addressed in this proposed project. There are multiple references to conditions in 2040 but it is unclear what those baseline assumptions include. The EPA recommends that Reclamation discuss how climate change is affecting water resources in California (flooding and drought extremes) identify measures as part of the proposed project that would provide resilience to climate stressors require effective mitigation identify and protect areas of climate refugia and consider adding conservation commitments. Recommendations: In the Final EIS include a summary discussion of climate change assumptions for	Refer to Standard Response 9, Climate Change, regarding how the EIS considers climate change, precipitation changes due to climate change, and climate change assumptions for each alternative. Refer to Chapter 3, Alternatives, and Appendix E, Draft Alternatives, for a discussion of the Drought Toolkit as it relates to applicable alternatives. Refer to Standard Response 6, Hydrologic Modeling and Surface Water Resources, regarding modeling assumptions and output analysis of droughts. The cyclical nature of California hydrology and the resulting effect on federally listed species warrants special consideration for operation during droughts. Although each drought is unique, contingency planning can facilitate an adequate response. California experiences variable climate, and periods of droughts are a recurring feature. Water stored in CVP and SWP reservoirs and groundwater basins mitigate droughts. Multi-year droughts occur when two or more successive years are dry and reservoirs and groundwater reserves are depleted. During these periods, Reclamation in coordination with DWR would develop a Drought and Dry Year Planning Toolkit that focuses on actions to implement as intervention measures during hydrologic years with drought and dry conditions. The Drought Toolkit would be

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	each alternative. We also recommend adding a description of CEQ's guidance for greenhouse gas emissions and climate change impacts to the regulatory requirements section of the Final EIS. Explain how the EIS is consistent with EO 14008 Executive Order on Tackling the Climate Crisis at Home and Abroad. In particular a primary purpose of the CVP is flood management so EPA recommends addressing any possible changes to flood management strategies and operations planning in a changing climate.	developed within 18 months of executing a Record of Decision. The Drought Toolkit includes actions that can either mitigate or avoid impacts throughout the Central Valley. As discussed in Chapter 3, the Drought Toolkit is a common component of the LTO of the CVP. Flood management is a non-discretionary action outside of the scope of this EIS.

Table 4-57. Letter No. 57

Ltr#-Cmt#	Comment	Response
57-1	Thank you for the opportunity to comment on the U.S. Bureau of Reclamation's Environmental Impact Statement for the Long-Term Operations of the Central Valley Project, dated July 2024.	Reclamation appreciates public comments.
57-2	As a South-of-Delta Landowner who receives water supplies dependent on the operation of the Central Valley Project (CVP), decisions currently being made and to be made in the future regarding those operations are of utmost concern to my family farm. Water supply reliability for our region of the CVP has decreased on average by over 50% over the last 30+ years and, it appears, will only further erode if the current "preferred" alternative is implemented. This certainly will impact the ability of all South-of-Delta farmers served by the CVP to remain financially viable, which would likely mean less safe and abundant food supply produced by California to feed our nation and the world. Information being circulated regarding the proposed preferred alternative indicates that not only does the alternative fail to strike an appropriate balance between species protection efforts and flexible operations of the State and Federal Water projects, it may also violate multiple existing laws, including the Central Valley Project Improvement Act. The alternative also proposes voluntary actions to be taken by Reclamation to coordinate operations with the State Water Project in ways that essentially apply requirements specified only for the State Water Project to the CVP, contrary to existing law, and possibly in violation of Reclamation's obligation to not impose conditions of shortage under existing CVP contracts, including the contract held by the district from which my Lands receive service, the Del Puerto Water District.	Potential environmental effects of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. Potential effects of the alternatives on surface water resources are addressed in Chapter 5 and Appendix H, Water Supply. Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding comments that state opinions of general opposition to the project. Please also refer to Standard Response 1 regarding the purpose and need for the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements, including the Central Valley Project Improvement Act. Refer to Standard Response 10, Voluntary Agreements, regarding general concern about voluntary agreements. Although Reclamation, as a federal agency, is not subject CESA, this effort includes harmonizing operation of the CVP with SWP requirements, as appropriate.

Ltr#-Cmt#	Comment	Response
57-3	As a farmer who must adaptively manage my farm to account for changes in climate, laws, regulations and the agricultural economy, it is extremely frustrating to observe the current process, which continues to advance the failed strategy of the last 30 years of using flows only to address the multiple stressors, including predation, non-native invasive species, and climate change, to name a few, that are impacting the Delta ecosystem and the species that call the Delta home.	Potential environmental effects of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. More specifically, potential effects of the alternatives on fish and aquatic resources are addressed in Chapter 12 and Appendix O, Fish and Aquatic Resources. Appendix Y, Cumulative Impacts, addresses impacts of habitat restoration actions. Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding comments that state opinions of general opposition to the project. Please also refer to Standard Response 1 regarding the purpose and need for the continued operation of the CVP and SWP. Refer to Standard Response 7, Aquatic Resources, regarding general concern for adverse effects on aquatic resources that could potentially result from the alternatives.
57-4	As we do on the farm, Reclamation must modify its approach and implement scientifically-based adaptive management to improve water supply reliability and protect the environment.	Refer to Chapter 3, Draft Alternatives, for a description of the No Action Alternative and all action alternatives, including the use of adaptive management. Refer to Standard Response 4, Alternatives Formulation, regarding the development of alternatives.
57-5	Similar to previous updates to the environmental documentation that governs operations of the CVP, along with other laws [and] regulations, the proposed preferred alternative has disproportionate impacts on the westside of the San Joaquin Valley, a region that is historically economically underdeveloped and least able to bear the burden of the water supply reductions. This makes no sense as a matter of national security, as this same region is responsible for producing much of our nation's food supply. In closing, the Proposed Action should be modified when Reclamation issues the Final Environmental Impact Statement to strike the appropriate balance between flexible project operations	The EIS has been prepared in compliance with NEPA and evaluates a range of reasonable alternatives and the impacts that may result from the alternatives. Please refer to Standard Response 4, Alternatives Formulation, regarding the development of alternatives. Chapter 17 and Appendix T, Environmental Justice, contains a discussion of potential effects on Environmental Justice communities, including in the San Joaquin Valley region. Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding comments that state opinions of general opposition to the project. Please also refer to Standard Response 1 regarding the purpose and need for

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	and species protection required by law, thereby ensuring the continued viability of California's small family farmers.	Reclamation's action and the continued operation of the CVP and SWP.

Table 4-58. Letter No. 58

Ltr#-Cmt#	Comment	Response
58-1	I am particularly disappointed that a non-native species such as striped bass which preys upon the species we are trying to protect is actually considered an indicator species and worthy of protection. As a former fisheries biologist I find the science and logic misguided.	Alternatives evaluated do not provide specific actions for the protection of striped bass. Potential environmental effects of the alternatives and mitigation measures are evaluated and discussed in Chapters 4–22 of the EIS. More specifically, potential effects on fish and aquatic resources are addressed in Chapter 12, Fish and Aquatic Resources. Please refer to Appendix O, Fish and Aquatic Resources Technical Appendix, Section titled Fish and Aquatic Species Evaluated for an explanation of the focal aquatic species evaluated in the EIS. Refer to Standard Response 7, Aquatic Resources, regarding general concern for negative adverse effects on aquatic resources that could potentially result from the alternatives.
58-2	A balanced approach between environment, agriculture and urban communities would have a better outcome. Some sacrifice by all is necessary but I feel like agriculture bears the brunt time after time. Family farms will be the first to go extinct, mark my word. In regards to adaption I find it contradictory that the state and federal government would invest funds in so many programs to help farmers improve water efficiency and groundwater recharge only to tum around and take water supplies away so the opportunity to achieve those savings never comes to fruition. It seems wasteful and is actually quite demoralizing to people like me. We have invested everything we have, our future, with the help of a few federal and state grants in reinventing our farm to capture more carbon, build healthy soils, recharge more water in	Refer to Standard Response 1, Responses to General Comments, regarding comments that state opinions of general opposition to the project. Please also refer to Standard Response 1 regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP. Potential effects of the proposed project on surface water resources are addressed in Chapter 5 and Appendix H, Water Supply, and potential effects on groundwater resources are addressed in Chapter 6 and Appendix I, Groundwater. Also refer to Chapter 15 and Appendix R, Land Use and Agricultural Resources for discussion of potential effects on land use and irrigated agricultural acreage.

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	wet years and use water more efficiently during dry years. The hope was to be able to access those savings when drought comes and supplies are insufficient, but so far every time we have a wet year and I farm conservatively the water savings seem to vanish or end up in someone else's pond. So I ask, why did I bother to save? Why do you think farmers say "Use it or Lose it"? And that is exactly the attitude you don't want farmers to take. One thing we farmers understand is working towards a goal, but if you keep taking the reward away every time the effort is made you are just going to get a bunch of pissed off uncooperative farmers. Plans that impact everyone should engage and be inclusive of everyone. Sacrifices and benefits should be dispersed across the board. This is the attitude required for success.	

Table 4-59. Letter No. 59

Ltr#-Cmt#	Comment	Response
59-1	California Farm Bureau September 9 2024 David Mooney U.S. Bureau of Reclamation Bay-Delta Office801 I St. Ste. 140 Sacramento CA 95818 Via email: sha-MPR-BDO@usbr.gov Re: Comments on the Draft EIS for Long-Term Operations of the CVP and SWP Dear Dr. Mooney The California Farm Bureau (Farm Bureau) appreciates the opportunity to review and comment on the July 2024 Draft Environmental Impact Statement (EIS) for the Long-Term Operations of the Central Valley Project (CVP) and the State Water Project (SWP). Farm Bureau is a non-profit non-governmental organization dedicated to advocating on behalf of California farmers and ranchers and working to address needs of our state's rural communities. Founded in 1919 we are California's largest and oldest statewide agricultural organization and is comprised of 54 county farm bureaus currently representing nearly 30000 members. As reliable and affordable water supplies are critical to California agriculture and because a large proportion of Farm Bureau's membership either receives water supply through the CVP or SWP or is otherwise affected by the operations of these projects Farm Bureau has a vital interest in their operation. However for nearly 10 years members of California's farming community and the CVP and SWP contractors serving them have been left in a limbo of sorts about the future operational conditions of the projects as various actors and executives have pushed for reinitiating consultation under federal or state law and sometimes with unclear reasons for what must change and why relative to previous or companion efforts. California's farmers and ranchers are used to dealing with hydrologic uncertainty from year to year but politically driven regulatory uncertainty is another matter entirely. Farm Bureau knows there are good and	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text. It is not a comment on the contents of the EIS.

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	dedicated public servants leading this effort who must share the water user community's frustration at another turn on the "reconsultation merry-go-round" and we hope that EIS will ultimately provide the necessary guidance that translates into the operational stability and water supply reliability agricultural water users need. While Farm Bureau is likely to share many of the comments on the Draft EIS made by irrigation districts water districts and other affected groups in the CVP footprint we also wanted to highlight a few areas where we believe the Draft EIS does not fully account for potential impacts to our members from the alternatives analyzed.	
59-2	Incomplete Groundwater Analysis and Consideration of SGMA The analysis of groundwater resources in Chapter 6 and in Appendix I is not reflective of the current and near-term reality when it comes to groundwater management especially in the San Joaquin Valley. Not only were the effects of the Sustainable Groundwater Management Act of 2014 (SGMA) "not explicitly simulated as part of the action alternatives" [Footnote 1: "Draft Environmental Impact Statement: Long-Term Operations of the Central Valley Project and State Project Appendix I: Groundwater." U.S. Department of the Interior Bureau of Reclamation Region 10 California-Great Basin. July 26 2024. Page I-82.] but the subsequent alternatives evaluation ignores the reality of limited groundwater supplies under SGMA thus hiding the true water supply impacts and related effects to communities served by the CVP and SWP. For example the Draft EIS says that under Alternative 2B which is expected to result in reduced surface water supplies exported from the Delta "There may be an increase in groundwater pumping to meet water supply demands. An increase in groundwater pumping may result in exacerbation of groundwater overdraft and increase in the potential for ground subsidence. Additionally increased	The Sustainable Groundwater Management Act (SGMA) prescribes that Groundwater Sustainability Agencies (GSAs) develop Groundwater Sustainability Plans (GSPs) to bring medium- and high-priority basins into sustainable operation. Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium- and high-priority basins with overdraft conditions or 2042 for medium- and high-priority basins without overdraft. Each GSP that either is currently being developed or has been developed is specific to each groundwater basin/subbasin. The C2VSim groundwater model does not include specific actions for each GSP relative to parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decisions regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The C2VSim model represents effects to groundwater resources that may be more substantial than when GSP provisions are fully enacted. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA

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	groundwater pumping to make up the reduced water supply may result in a change in groundwater quality." [Footnote 2: "Draft Environmental Impact Statement: Long-Term Operations of the Central Valley Project and State Project Chapter 6: Groundwater." U.S. Department of the Interior Bureau of Reclamation Region 10 California-Great Basin. July 26 2024. Page 6-18.] However there is no future scenario in which groundwater pumping is likely to increase in high-priority subbasins under SGMA especially in the San Joaquin Valley; to the contrary all of the groundwater sustainability plans (GSPs) developed for subbasins in the valley acknowledge the need to reduce pumping under our groundwater-limited future even absent changes in CVP and SWP operations that could reduce surface water availability south of the Delta. This is the case even for the six subbasins in the San Joaquin Valley with unapproved GSPs and which are facing potential probationary status at the State Water Resources Control Board. SGMA is the defining existential force that will shape land uses and economic conditions in the San Joaquin Valley between now and 2040 and beyond. Farm Bureau understands that groundwater models have limitations but the EIS needs a more complete and SGMA-inclusive assessment of the alternatives and their likelihood to accelerate and expand land use transitions and create other regional impacts.	less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives. Each of the alternatives simulated in the EIS are simulated with the same assumptions regarding SGMA. Therefore, the comparison of each alternative to the No Action Alternative is comparable to each other to determine relative changes in groundwater resources. Also refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.
59-3	Undercounting Impacts to Agricultural Land Uses and Communities Farm Bureau believes the analysis in chapters 14 and 15 and in Appendix R underestimate or obscure the likely impacts to agricultural production and effects for communities in areas served by the CVP and SWP and especially in parts of the San Joaquin Valley. For example Chapter 15 presents the changes in agricultural acreage under the alternatives for the project area	The main body of the EIS is subject to page constraints; therefore, the information presented in Chapter 14 and Chapter 15 is a summary of the information provided in Appendix Q and Appendix R, respectively. The analysis considers SGMA to be fully implemented, as discussed in Appendix R, Section R.2.1.2, Agricultural Resources, R-41.

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	overall which leaves a misimpression as to how acutely certain regions would feel those impacts and hides the true cost of Alternatives 2 and 3 for one of the most productive agricultural regions in the world and the people who live and work in it. The severity of impacts to some regions relative to others is only shown in Appendix R which describes for the San Joaquin River basin a likely reduction of as much as 12% of the agricultural water supply and as many as 47732 productive acres. [Footnote 3: "Draft Environmental Impact Statement: Long-Term Operations of the Central Valley Project and State Project Appendix R: Land Use and Agricultural Resources Technical Appendix." U.S. Department of the Interior Bureau of Reclamation Region 10 California-Great Basin. July 26 2024. Tables R-37 through R-40 R- 29.] It's important to emphasize that this would be occurring on top of existing land-use changes expected as SGMA comes into full implementation increasing by 5%-10% the acreage predicted to be fallowed between now and 2040. [Footnote 4: "Managing Water and Farmland Transitions in the San Joaquin Valley." Report. Public Policy Institute of California. September 2023. Available at https://www.ppic.org/publication/managing-water-and-farmland- transitions-in-the-san-joaquin-valley/.]	
59-4	Chapter 14 shows comparisons of employment income and revenue changes associated with each alternative indicating that even in years of "average" hydrology Alternative 2 may result in as many as 2094 lost jobs $75 million in lost income and $384 million in lost revenue locally. [Footnote 5: Draft Environmental Impact Statement: Long-Term Operations of the Central Valley Project and State Project Chapter 14: Regional Economics." U.S. Department of the Interior Bureau of Reclamation Region 10 California-Great Basin. July 26 2024. Page 14-9.] It's important for agencies and the public to understand - and for the EIS'	Specific consideration of impacts to low-income and minority populations is described in Appendix T, Environmental Justice Technical Appendix, and Chapter 17, Environmental Justice. Reclamation has proposed an additional mitigation measure, Mitigation Measure EJ-2: Reduce Effects of Employment Loss for Environmental Justice impacts under Alternatives 1 through 4. This mitigation measure would require assisting in offsetting agricultural sector job losses.

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	analysis to fully acknowledge - that these losses will be accruing in and to some of the state's most vulnerable communities. Additionally Farm Bureau is concerned that the pressure and water supply uncertainty under Alternative 2 will accelerate the consolidation of California's farming industry a trend that has occurred steadily for more than two decades as small farmers socially-disadvantaged farmers and ranchers and others with the least ability to absorb risk and spread costs have sold their operations to larger entities. For example during the most recent multi-year drought the number of farms in California dropped by 10% and the average farm size increased 10% while overall acreage remained relatively constant. [Footnote 6: "2022 Census Profiles California Farmers and Agriculture." News Release. United States Department of Agriculture National Agricultural Statistics Service. February 13 2024. Available at https://www.nass.usda.gov/Statistics_by_State/California/Publications/Press_Releases/2024/2022CensusCA_ Final.pdf.]	Reference to the USDA data mentioned by the commenter was incorporated in Appendix R – Land Use and Agricultural Resources, including the long term decline in number of individual farms in California and nationally.

Table 4-60. Letter No. 60

Ltr#-Cmt#	Comment	Response
60-1	I am a resident of Sacramento who is concerned with the long-term operation (LTO) of the Central Valley Project's (CVP) Folsom Dam, which is congressionally authorized for both water supply and flood protection. Since I live just yards from the American River, I'm concerned about flood risk. I chose to live in this neighborhood over 30 years ago because of its proximity to the river and the Parkway. Where else can someone live less than 10 miles from the capital of the most populated state in the country, and have deer, otters, salmon, turkeys, coyotes, western pond turtles, miles of hiking and bicycling trails, and kayaking, paddle boarding and fishing, right in your backyard?	This information describes the background of the organization or individual commenter and general introductory text. It is not a comment on the contents of the EIS.
60-2	I appreciate the investments that have been made in the infrastructure along the American River and at Folsom Dam. And I appreciate the highly sophisticated hydrological forecast-informed decision-making system that's been in place officially since 2019, as well as the Update to the Folsom Water Control Manual project. The improvements to the Dam's infrastructure and operations are critical for improving flood protection. Due to the uncertainties of climate change, flood control volume space assigned to Folsom reservoir should be maximized. All of the additional reservoir capacity resulting from the Folsom Dam Raise must be dedicated to flood control, and even more if possible. With more reservoir volume dedicated for flood control, there would be less need for major stormwater releases from Folsom Dam. This would provide more protection for Sacramento and all those who live along the river. Dedicating increased reservoir capacity to flood control would provide a larger margin for error, a larger shock absorber so to speak, for controlling	Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP. Flood control is a non-discretionary action outside of the scope of this EIS. Also, the Lower American River Common Features is not evaluated in this document. Reclamation suggests the commenter provides these comments to the Army Corps of Engineers.

Ltr#-Cmt#	Comment	Response
	major storms and flooding. Because peak flows would be reduced, the Wild and Scenic American River would be less likely to suffer major channel/flood damage and erosion. I am also very concerned about the joint Army Corps and State-of-California project known as the Lower American River Common Features, which is proposing large scale riparian forest/habitat removal to install rock trenches and toes, and rip-rap rock along the banks of on the Lower American River. This approach will destroy the integrity and the continuity of the Parkway's wildlife habitat corridor. In 2019, as part of the Folsom Update project, an alternative was selected that allows for a maximum release of 160,000 cubic feet per second, cfs, for the control of a 200-year storm. There was very little public participation in this project, possibly due to the COVID-19 pandemic. With more public engagement and more open discussion of alternatives, it's possible a much lower maximum flow limit would have been chosen. This lower limit would allow the use of less destructive erosion control techniques and benefit of all who use the Parkway, while maintaining flood protection for the greater Sacramento area. Peak flow limits for a 200-year storm events must be reduced. New modeling for inflow and reservoir operations can be performed, including using an ensemble of the latest and best hydraulic models and climate change data and tools, together with various sizes of new flood control space. With new modeling and evaluations, we can achieve a win-win-win-win-win: preparation for climate change, erosion control, flood protection for greater Sacramento, meeting Central Valley Project water supply requirements, and maintaining a Wild & Scenic American River Parkway.	

Table 4-61. Letter No. 61

Ltr#-Cmt#	Comment	Response
61-1	This is Part One of the comments submitted by the Central Delta Water Agency. Attached hereto and incorporated herein by reference are our comments to the DEIR for Long Term Operation of the SWP dated August 5 2024. References to Exhibits are to those included in such incorporated comments. The attachment will be in multiple parts to facilitate submittal by email.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
61-2	The DEIS is legally deficient and sadly parallels the unlawful effort by the State through its Department of Water Resources to circumvent the law by fostering exports of water which is not surplus to the present and future water needs in the counties and watersheds of origin. The DEIS fails to present or incorporate the limitations on the water rights for the CVP and SWP and the public official fiduciary duties as trustees of the public trust thereby failing to set forth an honest and good faith analysis of impacts and alternatives.	Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Also refer to Standard Response 2, Related Regulatory Responses, regarding Reclamation's compliance with applicable laws and regulations. Reclamation is a federal agency and follows applicable federal laws and regulations. Please see Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in formulating and selecting the alternatives evaluated in the EIS. Refer to Chapter 10 and Appendix H for evaluation of impacts on water supply.
61-3	The California Water Plan of which the Central Valley Project is a part provided as a basic principle that: "Water is not to be taken away from people who will need it; rather it is proposed to supply the needs in areas of deficiency by transfer only of excess or surplus water from areas of abundance." (Emphasis added) (See Exhibit 11 The California Water Plan DWR Bulletin No. 3 May 1957 excerpts pages 7 and 38 attached to our	Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, and Standard Response 4, Alternatives Formulation, regarding the purpose and need for the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Also refer to Standard Response 2, Related Regulatory Responses, regarding Reclamation's compliance with

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	comments to the SWP Long Term Operations DEIR) The SWP and CVP were planned to meet all obligations in a reoccurrence of a series of dry years such as occurred in 1929 through 1934. See Exhibit 10. The CVP and SWP are coordinated and have not been operated in compliance with their water rights which are based on assignment of State filings. There are specific laws applicable to the projects which have been circumvented along with court decisions. The conflicts of interest in the State regulating the State and the federal agencies regulating sister federal agencies have resulted in bias against protection of the areas of origin.	applicable laws and regulations. Reclamation is a federal agency and follows applicable federal laws and regulations.
61-4	Missing from a proper statement of Purpose and Need is the recognition of priority for satisfying legal obligations over contractual export obligations and the differing resulting environmental impacts extending over multiple years. The legal obligations include conditions upon which the water rights for the delivery of the contracted supply are conditioned. The contracts include recognition of such conditions. The reliance on collaboration of the conflicted parties (State operator and State regulator federal operator federal regulator) with no recognition of legal priorities is clearly not consistent with law and fiduciary protection of the public trust. Such was apparently not always the practice of the past. See Bulletin 160-83 (Exhibit 10) discussed in our attached comments on the SWP Long-Term Operations DEIR	Refer to Standard Response 4, Alternatives Formation, regarding the purpose and need.
61-5	It is apparent that the SWP decision not to diligently pursue the planned development of the 5 MAF of surplus water from the North Coast by the year 2000 resulted in a huge shortage of supply and likely changed the practice of operating to meet legal requirements in priority to contracted supply.	Reclamation was not a participant in the State of California's planning-level assessment of diverting water from the North Coast nor in the State's decision to cease these planning efforts.
61-6	It appears that except in wet periods there may be no surplus water for lawful export from the Delta. The DEIS analysis of	Please see EIS Chapter 3, Alternatives, and appendices that provide discussion regarding the operational criteria developed for each

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	alternatives must extend over multiple years anticipating that future years may be dry. Exports in year one may preclude meeting water quality standards in year six. Without ample carryover storage the prohibition of exports of water needed to supply needs for development in the counties and watersheds of origin will be violated.	alternative. EIS Chapter 5, Water Supply, provides an overview of the impacts on water supply estimated for each alternative under different hydrologic conditions.
61-7	There should be an analysis of an alternative with no future exports from the Delta Watershed and a first priority for meeting present and future water needs including fish and wildlife needs within the counties and watersheds of origin and D1641 objectives without change.	Refer to Standard Response 4, Alternatives Formulation, for additional information regarding the rigorous approach Reclamation undertook for the formulation of alternatives and the range of alternatives considered for analysis. No future Delta export is outside of the scope of this EIS. The need to meet present and future water needs, including fish and wildlife needs, is identified among the project purposes used to identify alternatives.
61-8	As to the alternatives already included in the DEIS there should be additional analysis of variants where contracts for water exported from the Delta watershed and transfers from the Delta Watershed are junior to all other needs within the watershed.	Evaluation of different contracts, priorities, and configurations of water transfers are outside the scope of this EIS. Refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook for the formulation of alternatives and the range of alternatives considered for analysis.
61-9	The DEIS fails to clearly acknowledge that salinity control is an obligation of the CVP and a part of River regulation. Water Code section 12202 provides: "Among the functions to be provided by the State Water Resources Development System in coordination with the activities of the United States in providing salinity control for the Delta through operation of the Federal Central Valley Project shall be the provision of salinity control and an adequate water supply for the users of water in the Sacramento-San Joaquin Delta. If it is determined to be in the public interest to provide a substitute water supply to the users in said Delta in lieu of that which would be provided as a result of salinity control no added financial burden shall be placed upon said Delta water users solely by virtue of such	Please refer to Chapter 2, Purpose and Need, and Standard Response 4, Alternatives Formulation, regarding the purpose of operating the CVP in coordination with the SWP for authorized purposes, including flood control and navigation; water supply; fish and wildlife mitigation, protection, and restoration and enhancement; and power generation. Operation of the CVP and SWP also provides recreation and water quality benefits. Refer to Chapters 4–22 regarding the analysis of potential environmental effects, which includes water quality and water supply resources. More specifically, Chapter 4, Water Quality, and its associated Appendix G, and Chapter 5, Water Supply, and its associated Appendix H, contain discussions of the potential effects

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	substitution. Delivery of said substitute water supply shall be subject to the provisions of Section 10505 and Sections 11460 to 11463 inclusive of this code." (Emphasis Added.) As explained in United States v. State Water Resources Control Ed. (1986) 182 Cal.App.3d 82: "In 1959 when the SWP was authorized the Legislature enacted the Delta Protection Act. (12200-12220.) The Legislature recognized the unique water problems in the Delta particularly 'salinity intrusion' which mandates the need for such special legislation 'for the protection conservation development control and use of the waters in the Delta for the public good.' (12200.) The act prohibits project exports from the Delta of water necessary to provide water to which the Delta users are 'entitled' and water which is needed for salinity control and an adequate supply for Delta users. (12202 12203 12204.) But the crucial question left unanswered by the protective legislation is exactly what level of salinity control the projects must provide. California Water Code section 11207 Primary Purposes provides; "Shasta Dam shall be constructed and used primarily for the following purposes: a. Improvement of navigation on the Sacramento River to Red Bluff. b. Increasing flood Protection in the Sacramento Valley. c. Salinity Control in the Sacramento-San Joaquin Delta. d. Storage and stabilization of the water supply of the Sacramento River for irrigation and domestic use. California Water Code section 11208 Secondary Purposes provides: "Shasta Dam shall be constructed and used secondarily for the generation of electric power and other beneficial uses. Water Code section 11460 was intended to be a key part of the protection for the areas from which water could be exported."11460. Prior right to watershed water In the construction and operation by the department of any project under the provisions of this part a watershed or area wherein water originates or an area immediately adjacent thereto which	on water quality and water supply resources, respectively. Refer to Standard Response 1, Responses to General Comments, and Standard Response 4, Alternatives Formulation, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Also refer to Standard Response 2, Related Regulatory Responses, regarding the Bureau of Reclamation's compliance with applicable laws and regulations. Reclamation is a federal agency and follows applicable federal laws and regulations.

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	can conveniently be supplied with water therefrom shall not be deprived by the department directly or indirectly of the prior right to all of the water reasonably required to adequately supply the beneficial needs of the watershed area or any of the inhabitants or property owners therein." (Added by Stats. 1943 c. 370 p. 1896. Amended by Stats. 1957 c. 1932 p. 3410section 296.)Confirmation of the intent is reflected in the 84th Congress 2D Session House Document No. 416 Part One Authorizing Documents 1956 at Pages 797-799 as follows: On February 17 1945 a more direct answer was made to the question of diversion of water in a letter by Acting Regional Director R. C. Calland of the Bureau to the Joint Committee on Rivers and Flood Control of the California State Legislature. The committee had asked the question "What is your policy in connection with the amount of water that can be diverted from one watershed to another in proposed diversions?" In stating the Bureau's policy Mr. Calland quoted section 11460 of the State water code which is sometimes referred to as the county of origin act and then he said: "As viewed by the Bureau it is the intent of the statute that no water shall be diverted from any watershed which is or will be needed for beneficial uses within that watershed. The Bureau of Reclamation in its studies for water resources development in the Central Valley consistently has given full recognition to the policy expressed in this statute by the legislature and the people. The Bureau has attempted to estimate in these studies and will continue to do so in future studies what the present and future needs of each watershed will be. The Bureau will not divert from any watershed any water which is needed to satisfy the existing or potential needs within that watershed. For example no water will be diverted which will be needed for the full development of all of the irrigable lands within the watershed nor would there be water needed for	

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	municipal and industrial purposes or future maintenance of fish and wildlife resources."	
61-10	As to the CVP water rights there are limitations in addition to conditions requiring meeting water quality conditions including salinity control which the CVP has been circumventing in the DEIS analysis. The CVP water rights are based on assignment of State filings pursuant to California Water code Section 10505.On February 12 1948 Acting Commissioner Wesley R. Nelson sent a letter to Representative Clarence F. Lea in which he said: "You asked whether section 10505 of the California Water Code also sometimes referred to as the county of origin law would be applicable to the Department of the Interior Bureau of Reclamation. The answer to this question is: No except insofar as the Bureau of Reclamation has taken or may take assignments of applications which have been filed for the appropriation of water under the California Statutes of 1927 chapter 286 in which assignments reservations have been made in favor of the county of origin. The policy of the Department of the Interior Bureau of Reclamation is evidenced in its proposed report on a Comprehensive Plan for Water Resources Development-Central Valley Basin Calif. wherein the Department of the Interior takes the position that "In addition to respecting all existing water rights the Bureau has complied with California's 'county of origin' legislation which requires that water shall be reserved for the presently unirrigated lands of the areas in which the water originates to the end that only surplus water will be exported elsewhere. "The State filings under the so-called county of origin legislation which are assigned to the USBR are limited to "unappropriated water "defined as: "all waters flowing in any river stream canyon ravine or other natural channel excepting so far as such waters have been or are being applied to useful and beneficial purpose	Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, and Standard Response 4, Alternatives Formulation, regarding the purpose and need for the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Also refer to Standard Response 2, Related Regulatory Responses, regarding Reclamation's compliance with applicable laws and regulations. Reclamation is a federal agency and follows applicable federal laws and regulations.

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	upon or in so far as such waters are or may be reasonably needed for useful and beneficial purposes upon lands riparian thereto or otherwise appropriated is and are declared to be public waters of the State of California and subject to appropriation in accordance with the provisions of this act." (emphasis added) (Stats. 1913 c 586 section 11) (See Water Code 1201 and Stats. 1943 c.368) Such exception of the water for beneficial use on riparian lands and prior appropriation recognizes the public interest and public trust need for priority protection of the present and future uses within the watersheds and counties from which water would be exported. Absent a special circumstance such water is not unappropriated not subject to state allocation and not included within the permits of the SWP and CVP.	
61-11	Additionally all such permits are subject to California Water Code 10505.5 Territorial restrictions on use: "Every application heretofore or hereafter made and filed pursuant to Section 10500 and held by the State Water Resources Control Board shall be amended to provide and any permit hereafter issued pursuant to such application and any license issued pursuant to such permit shall provide that the application permit or license shall not authorize the use of any water outside of the county of origin which is necessary for the development of the county. "As quoted above the assurance from the USBR is: "The Bureau has attempted to estimate in these studies and will continue to do so in future studies what the present and future needs of each watershed will be. The Bureau will not divert from any watershed any water which is needed to satisfy the existing or potential needs within that watershed. For example no water will be diverted which will be needed for the full development of all of the irrigable lands within the watershed nor would there be water needed for municipal and industrial purposes or	Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Also refer to Standard Response 2, Related Regulatory Responses, regarding Reclamation's compliance with applicable laws and regulations. Reclamation is a federal agency and follows applicable federal laws and regulations.

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	future maintenance of fish and wildlife resources. "The identification and reservation of such water must be incorporated in the DEIS analyses in order to properly evaluate the possible impacts. The SWP and CVP are already facing a significant deficit and failure to account for the reservation and recapture of water from the Projects will greatly increase the adverse impacts from failure to deliver firm water to meet permanent demand. The Draft State Water Project Delivery Capability Report 2023 dated May 2024 shows that while SWP water entitlement contracts remain at 4.133 MAF the Long-term Average Existing delivery is 2.238 MAF with delivery capability in a single dry year as low as 186 TAF. (See Exhibit 7 The Draft State Water Project Delivery Capability Report 2023 dated May 2024). The United States Bureau of Reclamation Water Supply and Yield Study dated March 2008 (Exhibit 8) provides: that current statewide demands exceed supplies by 2.3 MAF in average years and 4.2 MAF in dry years; and in the future (2030) statewide demands exceed supplies by 4.9 MAF in average years and 6.1 MAF in dry years. The study also shows that SWP and CVP deliveries were not constrained to anticipate consecutive dry years during the 1987-1992 drought. Construction of a San Joaquin Valley Drain with an outlet to the ocean as was required by the San Luis Act as a prerequisite to construction was circumvented and the salinization of the land and environmental contamination from selenium must be remedied with changes as a part of long-term operation. The diversion of San Joaquin River fish restoration flows before they reach the Delta pumps for recirculation should be discontinued and water diverted from the Delta and stored in San Luis Reservoir or other storage should not be rediverted until it is clear the it is not needed to meet present or future needs in the counties and watersheds of origin.	

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61-12	The DEIS analysis ignores the requirements to enhance the Delta watershed water quality and values and reduce exports from the Delta including those in the Delta Reform Act of 2009. The Delta Reform Act of 2009 includes provisions intended to provide additional protection for the Delta. Such provisions include Water Code 85054 which provides:"85054. Coequal goals 'Coequal goals' means the two goals of providing a more reliable water supply for California and protecting restoring and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural recreational natural resource and agricultural values of the Delta as an evolving place. "Water Code 85021:"85021. Reduction of reliance on Delta for future water supply needs. The policy of the State of California is to reduce reliance on the Delta in meeting California's future water supply needs through a statewide strategy of investing in improved regional supplies conservation and water use efficiency. Each region that depends on water from the Delta watershed shall improve its regional self reliance for water through investment in water use efficiency water recycling advanced water technologies local and regional water supply projects and improved regional coordination of local and regional water supply efforts. "There is no alternative that shows that even the current defective D-1641 water quality standards (without relaxation or TUCPs [Temporary Urgency Change Petition]) fishery requirements and senior water rights will be met in each year if there is a reoccurrence of a series of dry years such as 1929 through 1934 or 1987 through 1992.	Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, and Standard Response 4, Alternatives Formulation, regarding the purpose and need for the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Also refer to Standard Response 2, Related Regulatory Responses, regarding Reclamation's compliance with applicable laws and regulations. Reclamation is a federal agency and follows applicable federal laws and regulations.
61-13	There is no specific calculation of the quantity or identification of the specific source of water necessary to meet the present and future needs for development in the counties and watersheds of origin. The modeling does not appear to account	Please see Appendix H, Water Supply Technical Appendix, Section H.2.2.2, Use of CalSim 3 Model, which provides an overview of the CalSim 3 Model, including future level of development. Adjustments to historic water supplies are based on future land

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	for future reduction and recapture of water now being pumped by the SWP and CVP for export from the Delta watershed including water from transfers and water from water right changes. The unlawful application of Term 91 by the SWRCB to block fulfillment of the condition on the water rights of both the SWP and CVP as to both available natural flow and claimed "Project water" should be squarely addressed in the DEIS. The conditions on the water rights of the projects must be accounted in the DEIS long-term analysis as well as the anticipated improvement of the Bay-Delta water quality standards.	use conditions. Reclamation is a federal agency and follows federal rules and regulations. CalSim3 is a model that requires generalized rules used to simulate long-term operations. CalSim 3 and all subsequent modeling that uses CalSim 3 outputs may not capture actions taken in every possible situation, including potential future reduction and recapture of water and short-term water transfers. Appendix F, Modeling, Section F.1-1.2.4 includes additional information on long-term water transfers that are modeled in the No Action Alternative. Sections F.1-1.3.4, F.1-1.4.4, F.1-1.5.4, F.1.-1.6.4, F.1.-1.7.4, and F.1.-1.8.4 include additional information on long-term water transfers that are modeled in the respective alternatives. Term 91 curtailments are not explicitly modeled as the curtailments are decided by the SWRCB based on specific conditions that cannot be generalized. The model follows general principles and priorities of different water rights and prioritizes Delta requirements over Project and most non-project diversions. Therefore, the model captures the upper bound of effects of potential diversions on other resources.
61-14	Attached are the comments submitted as part of the comments on behalf of the Central Delta Water Agency. The attachment of 8-5-2024 are comments submitted on the SWR Long-Term ops DEIR which are incorporated in the 9-8-2024 comments. Your confirmation of receipt will be appreciated.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
61-15	ATTACHMENT 1 August 5 2024 [Letter to DWR] RE: DEIR for the Long-Term Operation of the State Water Project in the Sacramento-San Joaquin Delta Suisun Marsh and Suisun Bay Part One of Comments	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
61-16	ATTACHMENT 2 [See original comment for estimated seasonal runoff surplus and shortage graphs]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.

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61-17	ATTACHMENT 3 [See original comment for Delta Water Facilities Bulletin No.76]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
61-18	ATTACHMENT 4 [See original comment for The Delta The State Water Project Memorandum Report June 1969)	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
61-19	ATTACHMENT 5 [See original comment for Delta Water Agency email RE Possible Curtailment Method Based on a Water Right Term 91...]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
61-20	ATTACHMENT 6[See original comment for Public Law 86-488]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
61-21	ATTACHMENT 7 [See original comment for article "Lifetime Chronicles of Selenium Exposure Linked to Deformities in an Imperiled Migratory Fish"]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
61-22	ATTACHMENT 8 [See original comment for Draft State Water Project Delivery Capability Report 2023]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
61-23	ATTACHMENT 9 [See original comment for US DOI Watter Supply and Yield Study Report March 2008]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
61-24	ATTACHMENT 10 [See original comment for description of department of water resources compliance with state... Report Jan 2006]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
61-25	ATTACHMENT 11 [See original comment for The California Water Plan Projected Use and Available Water Supplies to 2010 Report]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
61-26	ATTACHMENT 12 [See original comment for Bulletin No. 3 The California Water Plan May 1957]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.

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61-27	ATTACHMENT 13 [See original comment for The California Water Resources Development Bond 1960]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
61-28	ATTACHMENT 14 [See original comment for Water Right Decision 1485]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
61-29	ATTACHMENT 15 [See original comment for Revised Water Right Decision 1641]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
61-30	ATTACHMENT 16 [See original comment for Contract between the State of California Department of Water Resources and The North Delta Water Agency]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
61-31	ATTACHMENT 17 [See original comment for State Water Resources Control Board Resolution No. 68-16]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.

Table 4-62. Letter No. 62

Ltr#-Cmt#	Comment	Response
62-1	I'm writing as a resident of Sacramento who's concerned with the long term operation (LTO) of the Central Valley Project's (CVP) Folsom Dam, which is congressionally authorized for both water supply and flood protection. Like many Sacramentans, I care about flood risk on the Lower American River (LAR), but I absolutely treasure the river, which is a California State-designated and federally-designated Wild and Scenic River, offering amazing wilderness-quality character and wildlife, in the heart of our city. I'm grateful for the prior flood control measures (like slurry cut-off walls in the levees) and the new infrastructure either recently completed at Folsom Dam (the auxiliary spillway) or under construction now (the Folsom Dam raise), and for the highly sophisticated hydrological forecast-informed decision-making system that's been in place officially in the wet season since 2019 (Update to Folsom Water Control Manual project) (Update project). The improvements to the Dam's infrastructure and the wet season operational approach are valuable additions for improving Greater Sacramento flood protection. However, due to uncertainties of climate change and hydrological response to climate change, and the reduction of flood control volume space assigned to Folsom reservoir in the Update project's selected alternative (essentially, storing of water in the rainy season is now done more aggressively), I feel strongly that significantly more dedicated flood control space (somewhere on the scale of hundreds of thousands of acre feet) is needed for Folsom Reservoir as part of CVP-SWP Long Term Operations. More dedicated flood control space would better protect Greater Sacramento and its Wild and Scenic Lower American River from destructive river flooding.	Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP. Flood control is a non-discretionary action outside of the scope of this EIS. Also, the Lower American River Common Features is not evaluated in this document. Reclamation suggests the commenter provides these comments to the Army Corps of Engineers.

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	With more reservoir volume dedicated for flood control, there would be reduced frequency and magnitude of large flood releases going down the Lower American River; and Greater Sacramento would therefore be more protected from river flooding. In this scenario, Greater Sacramento would have a larger shock absorber and margin for error for controlling major storms and flooding. In addition, because peak flows would be reduced, the Wild and Scenic River would be less likely to suffer major channel/flood damage and losses, such as to fishery, habitat, and recreation resources. This in turn has bearing on proposed "bank erosion" measures on the Lower American River. I am very concerned about the joint Army Corps and State-of-California project known as American River Common Features, which is performing large scale riparian forest/habitat removal to install rip-rap rock on the Lower American River streambanks, and making the Wild and Scenic River look like a tree-less, hardened canal. In 2019, as part of the Folsom Update project, an alternative was selected that allows for a maximum release of 160,000 cubic feet per second (cfs) for the control of a 200-yr storm. There was very little public participation in this project, possibly due to the COVID-19 pandemic. With more public input and more representation from Greater Sacramento, it's possible a much lower maximum flow limit would have been chosen, to reduce the peak flood flow going through a major urban area and to reduce overall flood risk. It's virtually certain that much less of the destructive river bank protection work would be needed if the CVP's Folsom Reservoir operated more toward the flood-control benefit side of the spectrum. In a more conservative flood protection stance for Folsom dam, via the reservoir level being kept significantly lower in the wet season, it would avoid needing to release dangerous levels of flow. A peak flow much less than 160,000 cfs would be	

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	able to pass the same 200-yr storm (as already shown in modeling supporting the update Project.) In water year 2017, the Lower American saw a peak flow of ~ 82,000 cfs, enough to swell the river and to cause some to worry about flooding. Under the current long term operating plan of the CVP (which would allow and design for even higher peak flows), Sacramento is effectively taking some flood risk for the benefit of CVP water supply reliability interests on the whole (such as for exports from the Delta for San Joaquin Valley CVP contractor deliveries). Alternative operation could greatly reduce that flood risk. And the cost of the operational alternative, in terms of somewhat lower water supply reliability for Greater Sacramento and the CVP, is expected to be only a slight effect. There is favorable reservoir refill, given the ratio of Folsom reservoir annual inflow relative to its capacity. The reservoir will still commonly fill, just slightly less so than it does with more aggressive winter storage (that is less flood protective). I feel strongly that new alternatives need to be developed for CVP-SWP LTO that prioritize protecting Greater Sacramento from flood risk for the American River and include substantially lower peak flow limits for 200-yr storm events in the American River Basin (including modification of the Folsom Reservoir Water Control Manual). I hope that new modeling for inflow and reservoir operations can be performed, which would include using an ensemble of the latest and best climate change data and tools, together with various sizes of new flood control space, as options on top of the existing alternatives. Just in the five years since the Update project, there have been major advancements in climate change science. With new modeling and evaluations (weighing flood control and water supply benefits from changes in reservoir operation priorities), a new balance could be achieved that better accounts for climate change; is more flood protective of Greater	

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	Sacramento's lives and properties; avoids the need to design for (and rip-rap riverbanks for) destructive high peak flows; and still satisfies CVP water supply requirements.	
62-2	Further References: The below articles and USACE website items confirm that the Folsom Dam Raise and the added storage capacity were earmarked for flood protection for the Greater Sacramento area. (1) FAQ question and response from the USACE website for the Folsom-Dam-Raise: https://www.spk.usace.army.mil/Missions/Civil-Works/Folsom-Dam-Raise/ (Question: Will the Folsom Dam Raise program create more floodplain in the areas around the lake?) USACE Answer: No. The purpose of the Folsom Dam Raise program is to reduce flood risk to the entire Sacramento area. We are adding top seals to the Folsom Dam gates and increasing the height of the earthen structure by 3.5 feet to create an extra 42,000 acre-feet of temporary storage capacity within Folsom Lake. This extra capacity will only be used in significant flooding events, to reduce the likelihood of Folsom Dam and other downstream structures overtopping or failing. When completed, the Folsom Dam Raise program should provide reduced flood risk for nearly 500,000 people and 125,000 structures. (2) And the "USACE Breaks Ground" article includes a photo and quotes of leaders from Congress, the Bureau of Reclamation, USACE and other federal, state, and local partners, and it says the purpose of the Folsom Dam Raise is reducing flood risk. USACE breaks ground on $373 million Folsom Dam Raise project:	Flood control is a non-discretionary action outside of the scope of this EIS.

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	https://www.spk.usace.army.mil/Media/News-Releases/Article/2062062/usace-breaks-ground-on-373-million-folsom-dam- raise-project/ (3) Corps awards contract to raise Folsom Dam: https://www.hydroreview.com/dams-and-civil-structures/dam-design-and-construction/corps-awards-contract-to-raise-folsom-dam/#gref Folsom Dam Constructors will raise the main dam and left and right wing dams on the American River in California up to 3.5 feet and modify the eight spillway gates by adding top seals, strengthening the gates and raising the gate piers. Together, these measures will allow greater control of releases from the dam during large flood events and increase the temporary storage capacity of Folsom Lake that can be used to mitigate flooding for the greater Sacramento area. This will reduce the flood risk for 500,000 residents and $58 billion of assets downstream.	

Table 4-63. Letter No. 63

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63-1	September 9 2024SENT VIA ELECTRONIC MAIL ONLYU.S. Bureau of Reclamation Attn: Bay-Delta Office801 I Street Suite 140 Sacramento California 95814 Sha-MPR-BOD@usbr.gov Subject: Comments on the Draft Environmental Impact Statement on the Long-Term Operations of the Central Valley Project and State Water Project Dear U.S. Bureau of Reclamation: On behalf of the Tulare Irrigation District (TID) and the Mid-Kaweah Groundwater Sustainability Agency (MKGSA) we would like to thank you for the opportunity to review and provide comments on the Draft Environmental Impact Statement (DEIS) on the Long-Term Operations of the Central Valley Project (CVP) and State Water Project (SWP). Upon our initial review of the DEIS we believe that actions outlined in the Preferred Alternative have not been fully analyzed and present a potential impact to the San Joaquin Valley particularly to the agricultural landowners and communities served by TID and the MKGSA. TID is a political subdivision of the State of California operating as an independent agency under the California Water Code. TID was organized on September 21 1889 and is governed by a five-member Board of Directors. TID obtains and delivers surface water supplies for the irrigation of farms and recharge of the groundwater basin underlying TID which is often referred to as conjunctive use operations. TID provides surface water to approximately 215 farms and serves approximately 68000 acres of irrigated agriculture. TID has a contract with the U.S. Bureau of Reclamation which was signed in 1950 (Contract No. I75r-2485D) for 30000 acre-feet of Class 1 water and up to 141000 acre-feet of Class 2 water from the Friant Division of the Central Valley Project. Our supplies come by way of the U.S. Bureau of Reclamation's purchase and exchange agreement with the San	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.

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	Joaquin River Exchange Contractors (Exchange Contractors) who agreed to not exercise their remaining San Joaquin River water rights in exchange for water to be delivered by the United States from the Sacramento River and Sacramento-San Joaquin Delta. Exchange Contractors receive their water from the Sacramento-San Joaquin Delta (Delta) and as long as supplies are sufficient Friant Division supplies are enjoyed by Friant contractors. However in years when supplies from the Delta are insufficient to meet Exchange Contractor needs water from the Friant Division is sent down the San Joaquin River to the Exchange Contractors. TID is also a member of the MKGSA which was formed as a Joint Powers Authority to comply with the Sustainable Groundwater Management Act (SGMA). The other members of the MGKSA include the City of Visalia and the City of Tulare both of which have different exchange and groundwater recharge agreements with TID. The MKGSA is charged with achieving groundwater sustainability by 2040. The MKGSA has been aggressively pursuing groundwater sustainability by implementing innovative projects and management actions. The MKGSA in 2022 implemented an Emergency Ordinance to allocate groundwater pumping measured as evapotranspiration to reduce groundwater usage. The MKGSA has also developed and constructed new groundwater recharge basins one specifically for the disadvantaged community of Okieville CA. The Okieville Recharge Basin will provide groundwater quantity and quality benefits. Groundwater sustainability for our communities which rely upon groundwater for drinking water and are largely agriculturally driven depends on the reliability of water supplies from the Friant division.	
63-2	Upon review of the DEIS TID and the MKGSA would like to submit the following comments for consideration: Lack of Preferred Alternatives the DEIS fails to include other alternatives	Refer to Standard Response 4, Alternatives Formulation, for information regarding the rigorous approach Reclamation undertook for the formulation of alternatives and the range of

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	and actions that would avoid adverse water supply and economic impacts to the San Joaquin Valley and avoid jeopardy (consistent with Section 4004(a)(6) of the Water Infrastructure Improvements for the Nation (WIIN) Act). The DEIS also fails to describe how other actions that require less water supply impacts would not avoid jeopardy.	alternatives. The WIIN Act 4004(a)(6) addresses requirements for reasonable and prudent alternatives under the ESA, not the range of reasonable alternatives an agency is directed to evaluate under NEPA.
63-3	The Fall X2 action should be removed from the Preferred Alternative as included in the DEIS. Ongoing analysis on the benefits of the X2 requirement including conclusions by the U.S. Fish and Wildlife Service (USFWS) draft Biological Opinion (BiOp) indicate that the Delta Smelt summer-fall habitat actions that were initially proposed in 2008 and modified in 2019 do not provide benefit to the Delta Smelt. Furthermore this action requires a large volume of water and could impact upstream temperature control requirements. The 2019 BiOp included an adaptive management strategy for the Delta Smelt summer and fall habit requirements which should be considered as a part of the Preferred Alternative.	As a result of recent scientific findings, including the 2024 draft USFWS Biological Opinion, Reclamation has modified Alternative 4 to remove the Fall X2 requirement. In addition, Reclamation has conducted a Summer X2 sensitivity analysis that includes above normal wet years, export reductions, releases from storage, and Fall X2 location at 85 km. A June action that uses a one-month block of water equivalent to what had been used for Fall X2, Delta Outflow no greater than 10,000 cfs (split between CVP and SWP in accordance with COA) and using both export reductions and storage withdrawals to meet outflow requirements. The No Action Alternative and Alternative 2 do include the Fall X2 provision as described in the 2019 USFWS Biological Opinion. Please refer to Standard Response 11, Summer Fall Habitat Action, for additional information regarding a Summer and Fall Habitat Action.
63-4	Ongoing consultation on the Trinity Division could have an impact on Lake Shasta operations and is not adequately analyzed in the DEIS. The decisions made on the Trinity Division should be considered as a coordinated operation with the actions taken in the DEIS. Until the Trinity Consultation can be completed the DIES and the Long Term operation of the CVP cannot be thoroughly analyzed.	The Trinity River Division is part of the CVP. Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives.
63-5	The DEIS does not correctly reflect the current groundwater regulations and status for the San Joaquin Valley. Chapter 6 cites the 2003 Department of Water Resources Bulletin 118 and the 2013 DWR California Water Plan both of which have been updated and the current documents should be used for analysis	The SGMA prescribes that GSAs develop GSPs to bring medium- and high-priority basins into sustainable operation. Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium- and high-priority basins with overdraft conditions or 2042 for medium- and high-priority basins

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	in the DEIS. Furthermore the DEIS does not consider the current implementation of groundwater sustainability agencies (GSAs) and their projects and management actions. For example as stated at the beginning of this letter since 2020 TID and the MKGSA have implemented groundwater allocations and several recharge projects both of which would be impacted by reduced supplies to the San Joaquin Valley. Other GSAs throughout the San Joaquin Valley have also aggressively pursued these efforts. The DEIS has not thoroughly analyzed the implementation of groundwater sustainability plans. The Preferred Alternative indicates that in all year types the San Joaquin Valley CVP would see agricultural surface water deliveries reduced by 143000 acre-feet per year (Appendix H Tables H-17 and H-29). GSAs in the San Joaquin Valley have relied upon surface water to achieve sustainability by building recharge basins and programs to use less groundwater and increase groundwater recharge. Removing 143000 acre-feet will need to be analyzed by the DEIS to determine the impacts on agriculture communities and the habitat supported by water use.	without overdraft. Each GSP that is either currently being developed or has been developed is specific to each groundwater basin/subbasin. The C2VSim groundwater model does not include specific actions for each GSP relative to parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decisions regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The C2VSim model represents effects to groundwater resources that may be more substantial than when GSP provisions are fully enacted. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives. Each of the alternatives simulated in the EIS are simulated with the same assumptions regarding SGMA. Therefore, the comparison of each alternative to the No Action Alternative is comparable to each other to determine relative changes in groundwater resources. Also refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.
63-6	The DEIS indicates that the water supply impacts to the San Joaquin River region are up to $383 million loss in revenue in average conditions (Table 14-6). The DEIS does not evaluate this impact in the face of the significant number of disadvantaged communities that rely upon this water for employment and	Specific consideration of impacts to low-income and minority populations is described in Appendix T, Environmental Justice Technical Appendix, and Chapter 17, Environmental Justice. Reclamation has proposed Mitigation Measure EJ-2: Reduce Effects of Employment Loss, which would require assisting in

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	drinking water. The DEIS needs to put the impact into context of some of the lowest income communities already living in a very tenuous economic situation. The DEIS also does not provide a complete impact to the region including secondary and tertiary level impacts due to the loss of agricultural production. Agriculture is the foundation of most of our communities and our local businesses organizations and government services rely upon the revenues generated from agriculture. The DEIS should evaluate these impacts.	offsetting agricultural sector job losses. Appendix Q, Regional Economics Technical Appendix, presents regional economic effects from changes to agricultural water supply in the region using data at a county level, with data compiled using Impact Planning and Analysis (IMPLAN) modeling. IMPLAN estimates direct, indirect and induced effects of various economic measures, including employment, labor income, and total value output. Employment is the number of jobs, including full-time, part-time, and seasonal positions. Labor income consists of employee compensation and proprietor's income. Value of output is the dollar value of production. IMPLAN estimates these economic measures through three types of effects: (1) direct effects, which reflect changes in final demand; (2) indirect effects, which capture changes in expenditures within the region in industries supplying goods and services; and (3) induced effects, which captures changes in expenditures of household income. IMPLAN estimates effects on an annual basis. The IMPLAN model and data are the best available tools to estimate regional economic impacts associated with changes in agricultural water supply. Please see Standard Response 5, Adequacy of Analysis and Mitigation, regarding adequacy of the regional economic modeling approach and the use of reliable data.
63-7	Again the Tulare Irrigation District and Mid-Kaweah Groundwater Sustainability appreciate the opportunity to provide these comments for consideration in the furtherance of the DEIR. However these comments are being provided as a note that our agencies as representatives of our community have significant concerns about the proposed Preferred Alternative. We encourage the U.S. Bureau of Reclamation to consider and evaluate alternatives with the same environmental outcomes with a reduced impact on water supply and our communities.	Reclamation appreciates public review and outreach. Refer to Standard Response 4, Alternatives Formulation, for information regarding the rigorous process Reclamation undertook for alternatives formulation and the range of alternatives.

Table 4-64. Letter No. 64

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64-1	Westlands Water District ("Westlands") has reviewed the documents provided by the Bureau of Reclamation ("Reclamation") that comprise the Draft EIS No. 20240131 for the Long-Term Operations of the Central Valley Project and State Water Project ("Draft EIS"). Westlands has also reviewed the documents that are identified as the National Marine Fisheries Service ("NMFS") 2024 draft Long-Term Operations Biological Opinion ("NMFS Draft BiOp") and the 2024 draft U.S. Fish and Wildlife Service ("USFWS") Biological Opinion ("USFWS Draft BiOp") prepared as part of the ongoing reinitiated Endangered Species Act Section 7 consultation with Reclamation and the California Department of Water Resources ("DWR") regarding the Coordinated Long- Term Operations of the Central Valley Project ("CVP") and the State Water Project ("SWP") (collectively "Draft BiOps"). The activities evaluated in these documents are matters of critical importance to the future of California including its protected fish and wildlife species its people and millions of acres of prime farmland. Westlands is a California water district formed pursuant to California Water Code sections 34000 et seq. Westlands' principal office is in Fresno California. Westlands' service area is in western Fresno and Kings counties and encompasses approximately 614000 acres that include some of the most highly productive agricultural lands in the world. Growers in Westlands produce more than 60 high-quality food and fiber crops including almonds pistachios tomatoes cotton grapes melons wheat lettuce and onions. Farms in Westlands produce an average of more than $2 billion worth of food and fiber annually generating more than twice that in farm-related economic activity and contribute significantly to nine of the State of California's top 15 exported agricultural commodities.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.

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	On average agricultural activities within Westlands generate over 38000 jobs and approximately $4.7 billion in economic activity. These jobs and economic output are integrally tied to water supply. Westlands provides water primarily for irrigation but also provides water for some municipal and industrial uses including for use by disadvantaged communities and to Naval Air Station Lemoore. To provide water in its service area Westlands has contracted with Reclamation to receive water from the CVP and is therefore "a public water agency that contracts for the delivery of water from the Central Valley Project." Water Infrastructure Improvements for the Nation ("WIIN") Act Section 4004(a) P.L. 114-322 130 Stat. 1858. Westlands has contractual entitlements to approximately 1195000 acre-feet of CVP water per year. The contractual rights to CVP water that are delivered to areas within Westlands are held by Westlands as well as two distribution districts formed by Westlands.	
64-2	Westlands is also a member agency of the San Luis & Delta-Mendota Water Authority ("SLDMWA") a twenty-seven member joint powers authority. As cooperating agencies the SLDMWA and its members including Westlands submitted comments on the first draft of the Cooperating Agency Draft EIS on October 16 2023 and the second draft on April 19 2024 raising issues regarding the imposition of California Endangered Species Act ("CESA") requirements; the purpose of and need for the proposed project; inadequacies of the alternatives analysis the Trinity River Division analysis and the project description; the effect of the Sustainable Groundwater Management Act ("SGMA") on the proposed project; and questions regarding the adaptive management program.	Please refer to Chapter 2, Purpose and Need, for a description of the purpose and need of this multipurpose operation. In addition, refer to Standard Response 4, Alternatives Formulation, for a detailed explanation of the purpose and need. Reclamation is not subject to CESA. Please refer to Standard Response 2, Related Regulatory Processes, regarding the relationship of the Proposed Project to CESA. The alternatives in this Draft EIS include continued implementation of the 2000 Trinity ROD. For future proposed modifications to Trinity River Division operations, refer to Standard Response 8, Trinity River Division, regarding the consideration of Trinity River operations in the EIS and future environmental review processes anticipated for the Trinity River. Refer to Chapter 6, Groundwater, and Appendix I, Groundwater Technical Appendix, for information

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		on the effects of the project related to groundwater management. Appendix E, Draft Alternatives, contains a full description of the adaptive management program in Section E.5.17. This program allows for consideration of information as it is developed during implementation of the long-term operation of the CVP and SWP. The concept is to use the potential flexibility provided by an adaptive management approach in a way that balances gaining knowledge to improve future management decisions while taking actions in the face of uncertainty to improve the operation of the CVP and SWP for their project purposes.
64-3	SLDMWA also submitted comments on the Draft BiOps on July 29 and August 12 2024 raising issues regarding completeness of the drafts; the application of available scientific data; implementation of the Fall X2 action; the adaptive management program; the analytical framework; compliance with CESA; and the adequacy of the environmental baseline. As a member agency of SLDMWA Westlands joined in each of these comments. Westlands also submitted its own comments on the Draft BiOps on July 29 and August 12 2024.	Reclamation appreciates public comments; however, this is not a comment specifically on this DEIS.
64-4	Westlands further joins in the comments on the Draft EIS concurrently submitted by the SLDMWA and also provides this letter to underscore the following concerns with the Draft EIS.A. To ensure consistency with the Endangered Species Act ("ESA") and NEPA the Draft EIS and Section 7 consultation should be broadened to fully include operation of the Trinity River Division. The Trinity River Division's original authorization directs the Secretary of the Interior "to adopt appropriate measures to insure the preservation and propagation of fish and wildlife." Section 2P.L. 84-386 69 Stat. 719 (1955). The Trinity River Act mandates that the operation of Trinity River Division be integrated and coordinated with the operation of other CVP	The Trinity River Division is part of the Central Valley Project. All the alternatives in the Draft EIS for the long-term operation of the Central Valley Project and the State Water Project include the continued implementation of the Trinity Record of Decision flows. Please refer to Standard Response 8, Trinity River Division, regarding the anticipated steps to follow once there are proposed modifications to Trinity River operations ready to be analyzed.

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	features to realize the fullest most beneficial and most economic use of the water resources for authorized purposes including fish and wildlife preservation and propagation. Consistent with this authorized purpose releases from the Trinity River have been historically used to maintain cold water in the Sacramento River for the protection of winter run Chinook salmon. Indeed as early as October 1992 Reclamation recognized the significant role the Trinity River Division plays in managing cold water for the benefit of salmon in the Sacramento River. In the Long-Term Central Valley Project Operations and Criteria and Plan ("CVP-OCAP") (October 1992) Reclamation described coordination of Trinity River Division facilities with Shasta Dam operations for the protection of salmon as follows: Scheduling of releases from the low-level outlets at Shasta and Trinity Dams and diversions of Trinity River water to Keswick Reservoir where it is discharged into the Sacramento River are part of the operational plan developed by the task group [for the protection of salmon]. . . When the combination of cold water resources in Shasta Lake and Trinity diversions are insufficient to provide the desired temperatures releases from Whiskeytown Reservoir may be used to provide additional cold water to protect the fishery resources in the Sacramento River. CVP-OCAP p. 35. Nevertheless as raised in Westlands' prior comment letters Reclamation has segregated operations from the Trinity River Division from operations of other CVP features in the ongoing reconsultation and from the impacts analysis in the Draft EIS. NMFS Draft BiOp Introduction p. 4; Draft EIS p. 0-52. Neither the Draft BiOps nor the Draft EIS fully explain the rationale or legal justification for the decision to exclude from the scope of the consultation and the NEPA analysis operations of the Trinity River Division. Segmenting the Trinity River Division does not comport with NEPA's mandate to "evaluate in a single review proposals or parts of proposals that are related closely enough to be in effect a single course of	

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	action" (40 C.F.R. [section] 1501.3(b)) or the ESA's mandate to consider the entire agency action (50 C.F.R. [section] 402.02). Specifically under the ESA in fulfilling its interagency consultation obligations the consulting agency must "consider the entire agency action." Conner v. Burford 848 F.2d 1441 1453-54 (9th Cir. 1988). This includes effects of the proposed action and the "consequences of other activities that are caused by the proposed action but that are not part of the action." 50 C.F.R. [section] 402.02; see e.g. Natural Resources Defense Council v. Rodgers 381 F.Supp.2d 1212 1235 (E.D. Cal. 2005) (finding that the USFWS unlawfully segmented its consultation when it failed to consider interrelated and interdependent operations and maintenance activities in its consultation on the execution of Reclamation water delivery contracts). The CVP is a complex multi-purpose network of dams, reservoirs, canals, hydroelectric powerplants, and other facilities all of which are fully integrated and interconnected. The Trinity River Division is "an integral part" (Section 1 P.L. 84-386 69 Stat 719) of that project and will both impact and be impacted by the Long-Term Operations Plan of the CVP as a whole. It is therefore essential for the Draft EIS to clarify how operations of the Trinity River Division under each alternative would impact Reclamation's ability to operate its facilities in the Sacramento/San Joaquin River watersheds to meet CVP purposes including both fish and wildlife protection and enhancement and meeting obligations to water agencies that contract for the delivery of CVP water.	
64-5	In addition to ignoring concerns articulated in prior comment letters regarding segmentation of the effects analysis the Draft EIS fails to address previously identified inconsistencies and confusion in the analysis. See 04/19/2024 SLDMWA Second Cooperating Agencies Draft EIS for the Long-Term Operations of the CVP Comment Letter ("SLDMWA Letter") [section] 4. For	While the alternatives would not change the operating criteria governing Trinity River operations, the alternatives would have impacts on the Trinity River. Those are evaluated in the Draft EIS. Discussion of changes in flows are due to impacts of the alternatives rather than a change in operating criteria. Flows under the Trinity River Restoration Program Record of Decision (2000)

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	example if the operating criteria governing Trinity River operations stay the same for all Alternatives it is unclear why Chapters 4 12 and 17 and Appendices H R and T state that there would be changes to Trinity River surface water and reservoir conditions under Alternatives 1-4 that would result in potential impacts as compared to the No Action Alternative e.g. Draft EIS pp. 4-2 12-24 17-5 H-18 R-11 and T-20 whereas Chapter 5 does not identify any potential changes to Trinity River surface water and reservoir conditions and Chapter 13 states there are no anticipated negative impacts since flow changes under all alternatives are the same as the No Action Alternative id. at pp. 5-3 13-4. The Draft EIS should be updated to clarify these apparent inconsistencies.	are common to all alternatives; therefore, impacts occur as a result of different reservoir levels and rare safety of dam releases. Any observed changes in modeled output related to the Trinity River are due to the dynamic system operation. Assumptions are consistent throughout; however, different system operations result in differing outputs. Minor deviations in Trinity flows shown in the EIS are a result of modeling but do not reflect an intention by Reclamation to deviate from the Trinity River Division 2000 ROD. Refer to Standard Response 8, Trinity River Division, regarding the consideration of Trinity River operations in the EIS and future environmental review processes anticipated for the Trinity River Division once proposed modifications are formally submitted for evaluation. In addition, clarifications have been made to the EIS.
64-6	B. The Draft EIS does not otherwise adequately respond to prior comments on the Second Cooperating Agencies Draft EIS Westlands reiterates the prior concerns raised in the SLDMWA Letter including the following issues not adequately addressed in the Draft EIS. 1. "Harmonizing" or "reconciling" CVP operations with SWP operations is a discretionary action that must not result in imposing CESA requirements on the CVP Alternative 2 is fundamentally flawed because it includes voluntary actions by Reclamation to achieve "harmony" with CESA. As the Draft EIS appropriately acknowledges: "[a]lthough Reclamation and DWR strive for a coordinated operation of the CVP and SWP Reclamation and the CVP are not subject to requirements under the California Endangered Species Act." Draft EIS p. 1-1. Where Reclamation is not subject to CESA and CESA requirements cannot be imposed on the CVP it would therefore be inappropriate for Reclamation to adopt an alternative that causes impacts on water users tied to the implementation of	Alternative 2 actions were developed to voluntarily harmonize operational requirements of CVP with CESA requirements for the SWP as appropriate and consistent with Reclamation's authorities. As stated in the EIS, although Reclamation and DWR strive for a coordinated operation of the CVP and SWP, Reclamation and the CVP are not subject to requirements under CESA. Please refer to Standard Response 1, Responses to General Comments, and Standard Response 4, Alternatives Formulation, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as authorized. Please refer to Standard Response 2, Related Regulatory Responses, regarding the Bureau of Reclamation's compliance with applicable laws and regulations. Alternatives are not rendered infeasible simply due to their potential to result in environmental impacts, including water supply impacts; NEPA is a procedural statute that requires only

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	such voluntary measures. The Draft EIS does not address the concerns raised on this point in the SLDMWA letter. Rather it continues to explain that under Alternative 2 Reclamation seeks to "voluntarily reconcile CVP operating criteria as appropriate with operational requirements of the SWP under the [CESA]" and that modifications to the Long-Term Operation of the CVP and SWP would "voluntarily harmonize CVP operating criteria as appropriate with requirements for the SWP under the [CESA]." Draft EIS pp. 0-2 1-1 2-1 3-1 (emphasis added). Reclamation must elaborate on the meaning of the term "as appropriate" and identify where under Alternative 2 there has been an analysis to ensure that proposed operational changes are authorized for the CVP given that CESA does not apply to the CVP. Westlands appreciates the acknowledgement in the Draft EIS that Reclamation and the CVP are not required to comply with CESA but based on this draft Westlands remains very concerned that Alternative 2 includes provisions that are in fact imposing CESA requirements on the CVP or otherwise voluntarily dedicating water towards CESA "harmonization" at the expense of statutorily-authorized purposes of the CVP like providing water for irrigation and domestic use. Alternative 2 must be further defined explained and revised to ensure that it does not in fact impose CESA requirements or standards on the CVP or otherwise subvert the statutorily-authorized purposes of the CVP.	that an agency take a "hard look" at the consequences of its actions. Based on modeled results, under Alternative 2, there would be no measurable change in minimum average annual deliveries for CVP M&I and SWP M&I water users. The maximum reductions in average annual deliveries under Alternative 2 to CVP Refuge Level 2 and CVP agricultural water users would average less than 5%. Alternative 2 would result in a maximum reduction of approximately 6% in average annual water made available for diversion to CVP Settlement Contractors water users. Please refer to Standard Response 6, Hydrologic Modeling, regarding the appropriate use of modeled results and the use of modeling for the purposes of comparative analysis.
64-7	2. The Draft EIS should explain how each alternative meets the purpose and need for action and identify how each element ties to Congressional direction a regulatory requirement or a contractual obligation The Draft EIS fails to explain how each alternative meets the purpose and need for action described in Chapter 2 of the Draft EIS (p. 2-1) and to describe whether the proposed components of each alternative are legally mandated	Refer to Standard Response 4, Alternatives Formulation, regarding development of alternatives, including the criteria used to screen alternatives. As listed in Standard Response 4, Reclamation considered how well each potential alternative component would meet the purpose and need. As discussed in greater detail in Appendix V of Long-Term Operation – Initial Alternatives (https://www.usbr.gov/mp/bdo/docs/lto-2021-initial-alt-2022-09-

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	or discretionary and the applicable legal authority for each. The SLDMWA Letter suggested that for each proposed operational element of each alternative analyzed the Draft EIS should identify: (1) the purposes being served and (2) how each element ties to Congressional direction a regulatory requirement or a contractual obligation. However the Draft EIS fails to provide this explanation and therefore does not justify or demonstrate the legal basis for the proposed operational changes under the alternatives considered. This error must be addressed in the Final EIS.	30-app-v.pdf), screening criteria guided Reclamation to identify components that could be combined into alternatives. Through implementation of this screening effort, Reclamation retained components to establish a reasonable range. Each criterion was considered consecutively, so if a component was screened out after the first criterion, it was not compared to the subsequent criteria. Meeting purpose and need served as Screening Criterion #1.
64-8	3. The Draft EIS does not respond to other prior specific comments relating to the alternatives a. Alternative 2 The SLDMWA Letter expressed concern that Reclamation contrary to NEPA's prohibitions pre-committed to adopting Alternative 2 by including language in the description of Alternative 2 that it "represents actions and tradeoffs made to reach consensus among Reclamation CDFW DWR NMFS and USFWS." The Draft EIS includes the same problematic description suggesting an agreement has already been negotiated by the named state and federal agencies without providing an opportunity for other cooperating agencies and members of the public to have a seat at the table. [Footnote 1: Depriving public water agencies that contract for the delivery of water from the CVP from discussions that resulted in this consensus alternative is particularly troubling given the mandates of section 4004(a) of the WIIN Act and is contrary to the WIIN Act.] Draft EIS p. 3-42. The Draft EIS further specifies that Alternative 2B is the "preferred alternative" id. p. 1-3 and the Draft EIS suggests that the basis for the preference is that this alternative represents a "consensus" of various state and federal agencies. Id. at pp. 1-3 3-42. But the existence of "consensus" does not mean that an alternative is legally justified or compliant. Moreover NEPA imposes procedural requirements	The proposed modifications to the long-term operation of the CVP and SWP are in part to harmonize requirements imposed on the SWP by their ITP, as appropriate. Changes to the Proposed Action resulting in effects not previously analyzed is one of the four reinitiation triggers of the ESA. Refer to Standard Response 4, Alternatives Formulation, regarding selection of the preferred alternative. The Governance Structure proposed for Alternative 2B contains the flexibility to include additional entities as necessary. For example, the Draft EIS describes that the SHOT may convene relevant technical teams to support Shasta or system-wide policy decisions. WAPA is included in the Sacramento River Temperature and Flow Technical Group (SRG). As shown in Figure E-20 in Appendix E, Draft Alternatives, to the Draft EIS, this group has a direct relationship for elevation and decision-making with the SHOT, which has a direct relationship for elevation and decision-making with the Directors Group.

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	that obligate federal agencies "to undertake analyses of the environmental impact of their proposals and actions." Dept. of Transp. v. Pub. Citizen 541 U.S. 752 756 757 (2004) (citing Robertson v. Methow Valley Citizens Council 490 U.S. 332 349 350 (1989)). Selecting an alternative because it represents a "consensus" of interested state and federal agencies prior to completing the analyses of environmental impacts is pre-decisional and violates NEPA.	The commenter's input regarding the function of the governance groups is noted and included in the record for consideration by decisionmakers. Refer to Section E.5.16 of Appendix E, Draft Alternatives, to the Draft EIS for a description of the purposes of CVP/SWP governance. All the alternatives, including the No Action Alternative, include the continued implementation of the 2000 Trinity ROD flows. Alternatives 2 and 2B were developed in coordination with the resource agencies, including USFWS, NMFS, CDFW and DWR. Please refer to Chapter 3, Alternatives, and Appendix E, Draft Alternatives, for detailed information of all of the alternatives, including Alternatives 2 and 2B. Refer also to Standard Response 10, Voluntary Agreements, regarding voluntary agreements representation in Alternatives 2 and 2B. Reclamation believes that Alternative 2B meets the screening criteria, including feasibility. Please refer to Standard Response 9, Climate Change, regarding consideration of climate change in the analysis provided in the EIS. Reclamation invited 19 Tribes to be a cooperating agency for development of the Draft EIS. None accepted the invitation. Support for Alternative 3 is noted. Refer to Standard Response 10, Voluntary Agreements, regarding voluntary agreements represented in Alternative 2 and Alternative 2B. All the alternatives, including the No Action Alternative, include the continued implementation of the 2000 Trinity ROD flows. As a result of recent scientific findings, including the 2024 draft USFWS Biological Opinion, Reclamation has modified Alternative 4 to remove the Fall X2 requirement. In addition, Reclamation has conducted a Summer X2 sensitivity analysis that includes above

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		normal wet years, export reductions, releases from storage, and Fall X2 location at 85 km. A June action that uses a one-month block of water equivalent to what had been used for Fall X2, Delta Outflow no greater than 10,000 cfs (split between CVP and SWP in accordance with COA) and using both export reductions and storage withdrawals to meet outflow requirements. The No Action Alternative and Alternative 2 do include the Fall X2 provision as described in the 2019 USFWS Biological Opinion. Please refer to Standard Response 11, Summer Fall Habitat Action, for additional information regarding a Summer and Fall Habitat Action. The EIS describes how Alternative 2 was developed and does not indicate that there is pre-commitment to any one outcome or which alternative will be selected and documented in the Record of Decision. Moreover, an important distinction is that Alternative 2 is a consensus proposal to be submitted for consultation and analysis pursuant to NEPA, not an alternative that the agencies agreed in advance would be implemented. Members of the public and other cooperating agencies have had opportunities to participate in the EIS and alternatives process. Refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of alternatives, and Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding public outreach during the NEPA process.
64-9	NMFS and USFWS have been asked to evaluate Alternative 2 as the proposed action for the purposes of their Section 7 ESA consultation with Reclamation. Draft EIS p. 1-3. This truncated process reflects inappropriate selection of an alternative at a stage in the NEPA process when there is not sufficient understanding of the legal authority and impacts of the different	Please refer to Standard Response 2, Related Regulatory Processes, regarding coordinated NEPA review and ESA studies and processes. Please also refer to Standard Response 4, Alternatives Formulation, regarding the purpose and need for the proposed action.

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	alternatives. Westlands encourages Reclamation to assure that NMFS and USFWS review a proposed action that meets the purpose and need for the action. Alternative 2 also problematically conflates the roles of the fisheries agencies and the action agencies. Not only were the fisheries agencies the co-authors of Alternative 2 Alternative 2 and the Draft BiOps insert these agencies into operational decision making processes. This removes important checks and balances that would normally exist to ensure that the legal requirements and interests of public water agencies and other contractors are being protected and that important purposes of these multipurpose water projects such as providing water supply for domestic and irrigation use are not impermissibly subverted.	40 C.F.R. § 1502.14(b) with 40 C.F.R. § 1508.1(z) direct NEPA lead agencies to identify a proposed action that meets the purpose and need of an action to aid reviewers in considering the comparative merits of alternatives. The EIS and the ESA compliance documents are not in violation of either NEPA or ESA and have been prepared concurrently for practical purposes to ensure that all of the environmental effects of the proposed action are disclosed prior to any decision on the proposed action. The Final EIS and ESA compliance documents will be considered together in decision making for the proposed action or another action alternative should one be selected. Reclamation has appropriately coordinated with the fisheries agencies in developing its proposed action and has determined independently from other federal agencies the definition of the proposed action for consideration in the EIS and biological assessment. No decision regarding approval of a proposed action has been made prior to completion of the environmental review process. All EIS alternatives, including the No Action Alternative, are disclosed and will be considered prior to the final decision-making process. For NEPA, appropriate decisions will be disclosed in the Record of Decision, which will be developed after thorough consideration of all of the appropriate environmental analyses and comments received on the environmental documents.
64-10	Additionally Alternative 2 remains not clearly defined or described. As the Draft EIS admits modeling is incomplete. Draft EIS p. 0-3. To enable meaningful review and comment Reclamation must update Chapter 3 and Appendix E to include a complete description of the actions that are included in Alternative 2 and the four "phases" or variations of Alternative 2 along with tables that provide side-by-side comparisons of the different actions included in each.	Modeling for Alternative 2 has been updated in the Final EIS to include the assumptions and actions described under Alternative 2B (the Preferred Alternative). Impacts of each phase of Alternative 2 are addressed in comparison to the No Action Alternative in Chapters 4 through 21 of the Draft EIS and their corresponding appendices.

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64-11	b. Alternative 3Alternative 3 would not comply with Reclamation's contractual obligations statutory obligations or Article 6(g) of the Agreement between the United States of America and the State of California for Coordinated Operation of the CVP and SWP and section 3411(b) of the Central Valley Project Improvement Act ("CVPIA"). Alternative 3 should therefore be screened out as infeasible. 40 C.F.R. [section] 1508.1(hh).	Please see Standard Response 4, Alternatives Formulation, regarding alternatives development and the range and feasibility of the alternatives evaluated in the EIS. Refer to Appendix E, Draft Alternatives, for a description of the screening process used to focus and refine each of the alternatives carried forward for detailed analysis.
64-12	c. Alternative 4As stated above Reclamation has instructed NMFS and USFWS to evaluate Alternative 2 as the proposed action. Based on the information available in the Draft EIS Alternative 4 appears to meet the purpose and need for this action where it would modify the 2019 proposed action to incorporate the best available science and tools. Further the approach to Alternative 4 appears to base regulatory restrictions on water supplies on scientific approaches that are grounded in population- level effects to listed species and which would incorporate improved analytics for using real-time information to support water deliveries in the Delta while limiting effects on listed species. Beyond its approach to protecting species through measures that significantly reduce water supply the alternative has fewer impacts on water users in comparison to Alternative 2. Under section 4004(a)(5) of the WIIN Act the CVP water users must be provided an "opportunity to confer with" Reclamation "about reasonable and prudent alternatives prior to" Reclamation "identifying one or more reasonable and prudent alternatives for consideration by" USFWS or NMFS. There has been no such conference. Under section 4004(a)(6) of the WIIN Act if USFWS or NMFS suggest a reasonable and prudent alternative they must explain to the CVP water users "how each component of the alternative will contribute to avoiding jeopardy or adverse modification of critical habitat and the scientific data or	Please see Standard Response 4, Alternatives Formulation, regarding the development, and range and feasibility of the alternatives evaluated in the EIS. Refer to Appendix E, Draft Alternatives, for a description of the screening process used to focus and refine each of the alternatives carried forward for detailed analysis. Reclamation complies with federal statutory and regulatory requirements regarding alternatives analysis. Refer also to Standard Response 2, Related Regulatory Processes, regarding the coordination with regulatory requirements administered by USFWS and NMFS. Support for Alternative 4 is noted. No irrevocable and irretrievable commitment of resources has occurred. Reclamation will consider public comments and then issue a Record of Decision with key considerations for the selection of an alternative. If the alternative is different than the alternative submitted for consultation, Reclamation will submit that alternative for consultation.

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	information that supports each component of the alternative" and "why other proposed alternative actions that would have fewer adverse water supply and economic impacts are inadequate to avoid jeopardy or adverse modification of critical habitat." No such explanations have been provided to date. At a minimum NMFS and USFWS should evaluate Alternative 4 and quantitatively demonstrate how such an alternative with fewer adverse water supply and economic impacts in comparison to Alternative 2 is inadequate to avoid jeopardy or adverse modification of critical habitat. Additionally each of the actions identified in both alternatives require further explanation as to why they are necessary to avoid jeopardy or adverse modification of critical habitat. Failure to do so would violate the purpose and intent of Section 4004(a) of the WIIN Act and circumvents Congressional direction.	
64-13	4. The Draft EIS should acknowledge and account for the declining availability and reliability of groundwater due to SGMA implementation. The Draft EIS does not reflect that Reclamation considered the SLDMWA Letter's recommendation that it include some estimate of whether and how much groundwater pumping will change due to SGMA implementation to reasonably assess future groundwater use especially as a substitute for surface water in times of shortage. Instead the Draft EIS largely fails to consider or mention the impacts of SGMA on groundwater pumping and the related impacts of reduced surface water supplies from the CVP.	SGMA prescribes that GSAs develop GSPs to bring medium- and high-priority basins into sustainable operation. Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium- and high-priority basins with overdraft conditions or 2042 for medium- and high-priority basins without overdraft. Each GSP that is either currently being developed or has been developed is specific to each groundwater basin/subbasin. The C2VSim groundwater model does not include specific actions for each GSP relative to parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decisions regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The C2VSim model represents effects to groundwater resources that may be more substantial than when GSP provisions are fully

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		enacted. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives. Each of the alternatives simulated in the EIS are simulated with the same assumptions regarding SGMA. Therefore, the comparison of each alternative to the No Action Alternative is comparable to each other to determine relative changes in groundwater resources. Also refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.
64-14	The Regional Economics chapter (Chapter 14) and accompanying Appendix Q note that "[g]roundwater pumping and SGMA implementation is represented in the SWAP model to govern whether and to what amount project water users can utilize groundwater to offset reductions in surface water deliveries." Draft EIS pp. 14-6 Appendix Q p. 48 of PDF. However Appendix I states the "effects of the 2014 SGMA legislation were not explicitly simulated as part of the action alternatives." Id. at p. I-82. The rationale for ignoring SGMA in the analysis is that "the exact details of sustainable management under SGMA for each basin and [groundwater subbasin] are not known." Id. The Draft EIS ignores that significant information about SGMA implementation is available from Groundwater Sustainability Plans ("GSPs") including many that have been on file with DWR since 2020. In light of increasing regulation of groundwater pumping it is unreasonable to assume that future groundwater use will mirror historic trends and the Draft EIS should be	The Sustainable Groundwater Management Act (SGMA) prescribes that Groundwater Sustainability Agencies (GSAs) develop Groundwater Sustainability Plans (GSPs) to bring medium- and high-priority basins into sustainable operation. Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium and high priority basins with overdraft conditions or 2042 for medium and high priority basins without overdraft. Each GSP that is either currently being developed or has been developed is specific to each groundwater basin/subbasin. The C2VSim groundwater model does not include specific actions for each GSP relative to parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decisions regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The

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	updated to comprehensively account for the impacts associated with more limited availability of groundwater in the future because of SGMA implementation.	C2VSim model represents effects to groundwater resources that may be more substantial than when GSP provisions are fully enacted. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives.
64-15	5. The Draft EIS remains unclear as to important aspects of adaptive management. The Draft EIS makes various references to "adaptive management." This concept is ill-defined and uncertain and therefore raises serious questions as to the legal adequacy of the proposed action under NEPA and the ESA. While the Draft EIS includes a new section in Appendix E for discussion of adaptive management many of the clarifying questions in the SLDMWA Letter remain outstanding. In particular the Draft EIS should clearly identify and define how adaptive management responses would be structured consistent with applicable law and agency requirements. Likewise the Draft EIS should clearly identify: What aspects of the proposed action are subject to adaptive management and what preparation has been done to allow for adaptive management? For instance have these been constricted in the proposed action to allow for a range of alterations without triggering a need for renewed consultation? What is the process for making changes under adaptive management? How will affected parties such as Westlands be apprised of information being used to establish thresholds and evaluate triggers for action? Further how will this adaptive management process facilitate efforts by affected parties such as Westlands to contribute to efforts that reduce scientific uncertainties? What information will considered and/or preferred in adaptive management decision-making? What are the applicable thresholds for triggering or evaluating a potential	Refer to Appendix E, Draft Alternatives, for a full description of the adaptive management program, its approach to scientifically building knowledge and improving management over time in a goal-oriented and structured way, and its use as part of a collaborative decision-making process. The adaptive management process will be conducted in a transparent manner. Reclamation would evaluate the need for further environmental compliance as actions derived from the adaptive management program are contemplated.

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	change and how will these be established? As a way to improve transparency confidence in decision making and collaboration on critical science investigations Westlands strongly suggests that the adaptive management process be constructed in a manner that facilitates water user participation in an oversight and/or steering committee to assure that key issues are being identified that monitoring is designed and implemented to measure success and confirm anticipated outcomes and that improvements in understanding or reductions in uncertainties surrounding aquatic conditions will lead to increases in water supply.	
64-16	C. The NEPA and ESA schedules are unnecessarily truncated leading to analytical and procedural deficiencies Reclamation's timeline estimates that the Final EIS will be complete by December 13 2024. This timeline is arbitrary unduly rushed and has and will continue to create numerous significant problems leading to analytical and procedural deficiencies. NEPA requires that there not be a formal decision on the proposed action until the later of the following dates: (1) 90 days after publication of the notice for a draft EIS; or (2) 30 days after publication of the notice for a final EIS. 40 C.F.R. [section] 1506.10(b). While the target Record of Decision date for the Final EIS here satisfies this standard given the complexity of the issues being considered and the significant issues raised by cooperating agencies and others Westlands strongly recommends release of a subsequent Draft EIS that addresses the issues raised in this and other comments. The CVP and SWP involve complex multi-purpose facilities delivering water to 30 million people supporting 4 million acres of agriculture and generating 4.5 million megawatt hours of electricity among other significant benefits. Accordingly Reclamation must afford sufficient time to review a more developed Draft EIS to ensure a thorough and comprehensive	The comment period for the Draft EIS was established based on conformance to the CEQ regulations for public review and in combination with the pressing need for timely decision-making. Reclamation will follow NEPA regulations in issuing a Record of Decision documenting the selected alternative. Reclamations believes the Draft EIS meets NEPA requirements. Please refer to Standard Response 2, Related Regulatory Processes regarding related regulatory process, including compliance with ESA.

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	review of a proposed action that will have a lasting impact on the world's fifth largest economy. The Draft EIS is replete with examples of problems created by this accelerated timeline. [Footnote 2: The Draft BiOps suffer from similar deficiencies. As noted in Westlands' comment on the NMFS Draft BiOp it appears that in the haste to meet the agencies' self-imposed timeline sections of prior biological opinions were cut and pasted into the Draft NMFS BiOp documents made available to Westlands on July 18 and July 25 without the information being checked for accuracy or updated to reflect existing conditions.] For example it discloses that certain Alternative 2(B) "components were not available in time to be included in quantitative modeling." Draft EIS p. 0-3. As Alternative 2 is the preferred alternative it is of great concern that the quantitative modeling was incomplete at the time of publication of the Draft EIS. Without complete modeling Westlands is unable to understand the impacts of Reclamation's proposal and is significantly constrained in its ability to provide meaningful comments on this proposal.	
64-17	Likewise the accelerated timeline together with procedural shortcomings in the development of Alternative 2 have resulted in the complete failure of Reclamation USFWS and NMFS to comply with the requirements of the WIIN Act P.L. 114-322 130 State. 1858. The WIIN Act mandates that Reclamation provide public water agencies that contract for the delivery of water from the CVP or SWP with the opportunity to review all biological assessments and biological opinions developed "in any consultation or reconsultation on the coordinated operations of the Central Valley Project." P.L. 114-322 [section] 4004(a). The WIIN Act explicitly requires that public agencies including Westlands have "the opportunity to confer with the action agency and applicant if any about reasonable and prudent	Please see Standard Response 2, Regulated Regulatory Processes, for a discussion regarding coordination and consultation required by other regulatory processes. Reclamation coordinates with water contractors and other interested parties through WIIN Act meetings and interested parties meetings and will continue that coordination on other efforts. Reclamation is currently preparing environmental documents under the requirements of NEPA and the ESA to analyze and disclose the potential effects of the proposed action and alternatives. No decisions on the selection of an alternative or of

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	alternatives prior to the action agency or applicant identifying one or more reasonable and prudent alternatives for consideration by the consulting agency." Id. at [section] 4005(a)(5). As Westlands explained in its comments on the Draft BiOps the versions of the Draft BiOps provided to Westlands for review do not include any conclusions on whether the proposed action is likely to jeopardize the continued existence of the federally listed species subject to the ongoing consultation or destroy or adversely modify designated critical habitat of those species. Likewise the Draft BiOps do not identify reasonable and prudent alternatives suggesting that the agencies had not yet made a determination regarding whether they were needed. [Footnote 3: To the extent that rather than including reasonable and prudent alternatives the agencies have decided to include mitigation within the proposed action this needs to be identified explicitly and disclosed to the public agencies to comply with WIIN Act requirements as well as to enable a determination regarding whether there is authority for these actions to be carried out by Reclamation.] This process failed to meet the mandates of the WIIN Act and elided important Congressionally-mandated requirements that are not excused merely because the agencies involved are acting under an accelerated timeline to complete the consultation by a self-imposed deadline. In order to comply with the WIIN Act the federal agencies must provide a full accounting of measures that were included in the proposed action to avoid jeopardy together with documentation of the rationale for any such measures. Without identification of these measures it will be difficult or impossible to apply adaptive management principles to determine alternative actions to take in the event that some of these measures turn out to be ineffective or even counterproductive as efforts to improve species' chances of survival. Such an accounting will also ensure that actions unauthorized by law (e.g. actions for CESA	reasonable and prudent alternatives have been made. Reclamation will comply with all applicable laws and requirements, including the WIIN Act and consideration of these Final EIS comments, prior to making final decisions related to the proposed action or alternatives. Neither NEPA nor the ESA restrict Reclamation from conferring and coordinating with cooperating agencies in defining its proposed action and a reasonable range of alternatives for analysis in this EIS. Instead, NEPA and the CEQ's NEPA Regulations encourage early coordination with cooperating agencies in defining alternatives and determining the scope of the EIS analysis. Using the input gathered early in the NEPA and ESA consultation process, Reclamation has crafted alternatives that take into consideration the needs of its CVP contractors in balance with the need to minimize environmental effects and support fish and wildlife and other beneficial uses. The USFWS and NMFS did not forego the possibility of including an RPA as part of formal consultation if they believe that the action subject to consultation would result in jeopardy to listed species.

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	compliance) are not in fact being undertaken by the federal government.	
64-18	Additionally under the unusually expedited timeline the final NMFS BiOp will not be released until after the Final EIS is released. This will prevent Reclamation from evaluating under NEPA the final conclusions of the NMFS BiOp and NMFS's final agency action. Releasing the Final EIS prior to issuance of the final NMFS BiOp also creates a risk of inconsistency and lack of clarity in implementation of agency obligations. In conclusion the timeline for adoption of the Final EIS should be adjusted to allow more time for review of subsequent Draft EIS versions that incorporate these comments and subsequent BiOps that enable meaningful review by the affected agencies. Failure to build in adequate time for development and analyses of the various environmental documents shortchanges all the participants in these critical projects and it is all but inevitable that the documents will not meet all applicable requirements without additional time and further analysis.	Reclamation has been coordinating closely with USFWS and NMFS on Section 7 compliance. The final Biological Opinions will be issued before the Record of Decision. Reclamation will evaluate the need for additional analysis and delay of the projected schedule after review of the issued final biological opinions.
64-19	D. The Draft EIS must accurately reflect nondiscretionary requirements. Reclamation should update the Draft EIS to accurately describe whether the proposed components of each alternative are legally mandated (nondiscretionary) or discretionary and the applicable legal authority for each. In evaluating the proposed action and alternatives the Draft EIS fails to fully examine and demonstrate compliance with Reclamation's contractual and statutory obligations. In the Draft EIS Reclamation suggests that how much CVP water it makes available to agencies with which it contracts is within Reclamation's discretion. See Draft EIS sections 3.6.1.1 and 12.3. However as stated in Westlands' prior comments submitted during this administrative process this position ignores non-discretionary obligations imposed by Reclamation's contracts	EIS Chapter 1, Introduction, provides information on the reasons Reclamation reinitiated ESA consultation for the long-term operation of the CVP and SWP. As noted in Chapter 1, this action was directed by Executive Order 13990 issued by President Biden on January 20, 2021. As noted in EIS Chapter 3, Alternatives, Alternative 2 includes actions and approaches for the CVP and SWP identified by the state and federal fish agencies, in addition to the water supply and power generation objectives of Reclamation and DWR. Reclamation is a federal agency and follows federal rules and regulations. The purpose for the LTO, as identified in Chapter 2, Purpose and Need, includes "Satisfies Reclamation contractual obligations and agreements."

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	with water users which include: A duty to make reasonable efforts to prevent a shortage in the delivery of water to a contractor; A duty to "optimize" deliveries---or provide as much water as is feasible---where Reclamation is otherwise excused from providing the full amount of water per a contract due to obligations to meet requirements of federal law other "purposes and priorities" of the CVP or contractual obligations to other CVP contractors under existing contracts; and A duty in times of shortage apportion available water as equally as possible between similarly situated contractors with similar contracts. See e.g. Westlands Water District Contract No. 14-06-200-495A-IR1-P Art. 11(a) ("[T]he Contracting Officer shall make all reasonable efforts to optimize Project Water deliveries to the Contractor as provided in this Contract."); id. at Art. 12(a) ("[T]he Contracting Officer will use all reasonable means to guard against a Condition of Shortage in the quantity of Project Water to be made available to the Contractor."). Further Reclamation's position that it has discretion to decide how much water to make available to CVP contractors ignores non-discretionary obligations imposed by statute including: Respecting the hierarchy of uses established under the CVPIA P.L. 102-575 Title 34 106 Stat. 4706 under which "irrigation and domestic uses" are on equal footing with and not subordinate to "fish and wildlife mitigation protection and restoration purposes;" [Footnote 4: Further the CVPIA clarifies that "power generation" and "fish and wildlife enhancement" are subordinate CVP purposes and priorities to irrigation domestic uses and fish and wildlife mitigation protection and restoration. The Draft EIS Reclamation's BA and Draft BiOps however do not distinguish whether actions are being undertaken for fish and wildlife enhancement a subordinate purpose to irrigation and domestic uses.] Complying with the mandate in Section 1(a) of the San Luis Act under which the "principal purpose" of the Unit shall be	

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	for "furnishing water for . . . irrigation" and differentiating this principal purpose from "incident[al]" purposes including "providing recreation and fish and wildlife benefits;" Heeding the Act of July 2 1956 (70 Stat. 483) and the Act of June 21 1963 (77 Stat. 68) which provide "a first right . . . to a stated share or quantity of the project's available water supply" "a permanent right to such share or quantity upon completion of payment . . ." and "a first right for the purposes stated in the contract . . . to a stated share or quantity of the project's water supply"; and Achieving consistency with state law including Water Code section 106 which provides that under state policy "the use of water for domestic purposes is the highest use of water and that the next highest use is for irrigation;" and The Delta Reform Act at Water Code section 85054 which declares water supply reliability as a goal on equal footing with and not subordinate to the goal of "protecting restoring and enhancing the Delta ecosystem."	
64-20	Alternatives that prevent Reclamation from being able to meet its legal and contractual obligations or that are economically infeasible should not be selected and should have been removed from further consideration. For example Alternative 3 states its fifth priority is to "limit water diversions by CVP and SWP water service contractors settlement contractors and exchange contractors under SWP and CVP water rights to human health and safety if outflow requirements are not achieved." Draft EIS p. 3-60. The ninth (last) priority is to "[d]ivert water for CVP and SWP water service contractors." Id. This alternative would not comply with Reclamation's nondiscretionary contractual obligations for water delivery. Additionally under certain "phases" of Alternative 2 average annual deliveries to CVP agricultural water users would be significantly reduced in dry and critical water year types. Id. at p. H-26. Yet contrary to	Please see Standard Response 4, Alternatives Formulation, which addresses how the alternatives were developed and screened from further consideration and how the alternatives brought forward for consideration in the EIS meet the project's purpose and need as described in EIS Chapter 2, Purpose and Need.

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	the authorities described above the Draft EIS does not justify or demonstrate the legal basis and necessity for these proposed operational changes to nondiscretionary contractual rights.	
64-21	E. Reclamation must ensure its NEPA analysis fully accounts for pending state actions including the Bay-Delta Plan Update The California State Water Resources Control Board ("SWRCB") is in the process of amending the Bay-Delta Water Quality Control Plan ("Bay-Delta Plan") focusing on the Sacramento River and its tributaries Delta eastside tributaries interior Delta flows and Delta outflows. Earlier this year the SWRCB released an environmental review document for these so-called Phase 2 amendments which includes implementation of the Healthy Rivers and Landscapes alternative (commonly called the "Voluntary Agreements") among the studied alternatives. SWRCB staff are still developing draft proposed amendments to the specific regulatory text for the Bay-Delta Plan which are anticipated to be released later this year. The SWRCB is then anticipated to consider adoption of the Sacramento/Delta updates. The Draft EIS includes modeling of implementation of the Voluntary Agreements under Alternative 2. Draft EIS p. E-67. However the Bay-Delta Plan update process is still pending leading to the possibility that the SWRCB may adopt an alternative that is not considered in the Draft EIS. If Reclamation's NEPA and consultation process advances on an accelerated timeline before conclusion of the Bay-Delta Plan update supplemental analysis and process may be necessary under NEPA and the ESA to ensure a full accounting for the impacts of this pending state process.	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Reclamation included a reasonable range of alternatives that includes an alternative (Alternative 3) which is consistent with the Bay-Delta Water Quality Control Plan proposed modifications. Please also refer to Standard Response 4, Alternatives Formulation, regarding the formulation of alternatives for the EIS. Please refer to Standard Response 2, Related Regulatory Responses, regarding the Bureau of Reclamation's compliance with applicable laws and regulations. Reclamation is a federal agency and follows applicable laws and regulations, including those relating to the potential need for supplementation of the analysis based on changed circumstances.
64-22	The Draft EIS's modeling and analysis should also be clarified with respect to Voluntary Agreement contributions in years when the SWP is unable to meet its contribution for export reductions. Under the Voluntary Agreements CVP participants	Refer to Standard Response 10, Voluntary Agreements, regarding voluntary agreements.

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	have agreed to share the burden of export reductions 50:50 with the SWP and neither project has agreed to provide a backstop under conditions where the other is unable to cover its share. It is unclear whether this is properly incorporated in the Draft EIS its description modeling and analysis.	
64-23	F. The Draft EIS should not include the Fall X2 measure and should be clarified with respect to the discussion of a Summer X2 measure described in the USFWS Draft BiOp As further discussed in the August 21 2024 letter submitted by Westlands and others to Reclamation and DWR regarding the 2024 Fall X2 measure Attachment 1 peer-reviewed scientific evidence demonstrates that the Fall X2 action as originally proposed in 2008 and as modified in 2019 produces no measurable benefits to Delta smelt. For example the USFWS Draft BiOp acknowledged this stating "[i]t is possible that the Fall X2 action could have effects on small numbers of delta smelt and that the effects could have positive or negative consequences." USFWS Draft BiOp pp. 100-101. Nonetheless the Draft EIS contemplates the inclusion of the Fall X2 measure in various alternatives. Consistent with the best available information the Fall X2 measure should be eliminated from future CVP and SWP operations because it does not serve its intended purpose of benefiting the Delta smelt and carries a substantial water supply cost.	As a result of recent scientific findings, including the 2024 draft USFWS Biological Opinion, Reclamation has modified Alternative 4 to remove the Fall X2 requirement. In addition, Reclamation has conducted a Summer X2 sensitivity analysis that includes above normal and wet years, export reductions, releases from storage, and Fall X2 located at 85 km. A June action that uses a one-month block of water equivalent to what had been used for Fall X2, Delta outflow no greater than 10,000 cfs (split between CVP and SWP in accordance with COA) and using both export reductions and storage withdrawals to meet outflow requirements. Please refer to Standard Response 11, Summer Fall Habitat Action, for additional information regarding a Summer and Fall Habitat Action.
64-24	The USFWS Draft BiOp suggests that a Summer X2 measure could be effective stating "[c]ontemporary life cycle modeling supports the hypothesis that high summer outflow can contribute to beneficial effects. . . ." USFWS Draft BiOp p. 101. Notwithstanding this cursory statement in the USFWS Draft BiOp the Draft EIS does not appear to analyze the impacts of any Summer X2 action as part of the proposed action or alternatives. The Draft EIS should be updated to clarify the extent to which a	As a result of recent scientific findings, including the 2024 draft USFWS Biological Opinion, Reclamation has modified Alternative 4 to remove the Fall X2 requirement. In addition, Reclamation has conducted a Summer X2 sensitivity analysis that includes above normal wet years, export reductions, releases from storage, and Fall X2 located at 85 km. A June action that uses a one-month block of water equivalent to what had been used for Fall X2, Delta outflow no greater than 10,000 cfs (split between CVP and SWP in

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	Summer X2 measure is proposed to be incorporated in various alternatives and to clarify the scientific basis for and impacts of the inclusion of any such measure including water supply costs.	accordance with COA) and using both export reductions and storage withdrawals to meet outflow requirements. Please refer to Standard Response 11, Summer Fall Habitat Action, for additional information regarding a Summer and Fall Habitat Action. Refer to Standard Response 2, Related Regulatory Processes, for information on the 2019 Biological Opinions and Draft EIS Chapter 3, Alternatives, for information on Delta smelt protection measures and processes included in the alternatives. EIS Chapter 12, Fish and Aquatic Resources, describes in detail the likely effects of each alternative on Delta smelt. Refer to Standard Response 4, Alternatives Formulation, for information regarding the rigorous process Reclamation undertook for alternatives formulation and the range of alternatives considered in the EIS.
64-25	G. The Draft EIS should address any environmental impacts of the proposed Water Reduction Program Agreement between the Sacramento River Settlement Contractors and Bureau of Reclamation or explain why such analysis is not warranted On May 17 2024 the Glenn-Colusa Irrigation District lead agency for the proposed Water Reduction Program Agreement ("WRPA") submitted a notice of preparation ("NOP") under the California Environmental Quality Act ("CEQA") of an environmental impact report studying the impacts of the WRPA. As described in the NOP the WRPA will be an agreement between Reclamation and the Sacramento River Settlement Contractors ("SRSCs") to implement a drought mitigation voluntary water conservation and water reduction program. NOP p. 2. Under the agreement described in the NOP the SRSCs will forgo a larger percentage of their contract supply in specified drought years and Reclamation will pay the SRSCs to implement improvements like canal lining	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis in the EIS consistent with the requirements of the National Environmental Policy Act. A federal action related to voluntary SRSC reductions must complete applicable environmental compliances such as NEPA and ESA. Reclamation is coordinating with SRSCs to operationalize reductions. Compliance efforts are currently underway.

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	and well drilling. It is unclear the extent to which the measures to be included as part of the WRPA may have water supply impacts to downstream CVP contractors including Westlands because the Draft EIS does not present a cohesive and comprehensive environmental analysis of these measures. Although the proposed action in the Draft EIS includes a voluntary reduction by SRSCs in dry years from 75 percent to 50 percent see e.g. Draft EIS p. E-80 the measures to be undertaken pursuant to the WRPA and their associated impacts do not appear to be analyzed in the Draft EIS. Rather it appears that these impacts will be addressed in the pending Glenn-Colusa Irrigation District environmental impact report and perhaps an associated NEPA document authored by Reclamation. The Draft EIS should be updated to explain Reclamation's plan for compliance with its NEPA and ESA obligations associated with the WRPA including an analysis water supply impacts. NEPA requires lead agencies to "evaluate in a single review proposals or parts of proposals that are related closely enough to be in effect a single course of action" and the ESA requires consideration of the entire agency action. 40 C.F.R. [section] 1501.3(b); 50 C.F.R. [section] 402.02. If Reclamation does not believe that these authorities require the Draft EIS to be updated to incorporate and address all environmental impacts of the proposed WRPA Reclamation should provide its rationale for its NEPA and ESA compliance approach in the Final EIS.	
64-26	H. The Economic Impacts Analysis must be updated to fully evaluate and disclose the impacts of the proposed action and alternatives and Reclamation should analyze and adopt measures to mitigate these impacts. Given the apparent significant deficiencies in the economic impacts analysis Westlands is in the process of retaining an expert to conduct an in-depth review of the economic impact analysis in the Draft EIS.	Appendix Q, Regional Economics Technical Appendix, Section Q.2.9, Cumulative Impacts, describes the direction and magnitude of cumulative regional economic impacts by alternative and across regions. Chapter 17, Environmental Justice, evaluates impacts of the alternatives on low-income and minority populations. Reclamation

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	Westlands offers these initial comments and reserves the right to either individually or jointly with other parties offer more detailed comments on the economic impacts analysis. The Draft EIS should be updated to more fully evaluate and disclose the significant economic impacts including cumulative impacts of the proposed action and certain alternatives on communities and agricultural producers as a result of significant water supply reductions under these alternatives and to include mitigation measures that will avoid or minimize these impacts. Chapter 14 and Appendix Q show that implementation of the proposed action under Alternative 2 would reduce average annual agricultural water supply deliveries in the San Joaquin River Region under three of the four scenarios modeled during average conditions and under all four scenarios during dry conditions. Draft EIS pp. 14-6 through 14-9; Appendix Q pp. 71 75 of PDF. [Footnote 5: PDF pages 11 through 48 of Appendix Q bear the page number 1; therefore the citations to Appendix Q in these comments refer to PDF page numbers. Reclamation should re-paginate Appendix Q for clarity.] These perennial reductions in available water supply would invariably cause land idling other forms of conversion and the permanent loss of the important farmland types. See e.g. Michael Shires The Economic Impact of the Westlands Water District on the Local and Regional Economy: 2022 Update p. 35. Fallowing would result in lost jobs and appreciable declines in regional economic activity with impacts disproportionately large in the lowest-income communities. See e.g. David Sunding & David Roland-Holst UC Berkeley Blueprint Economic Impact Analysis: Phase One Results (2020) pp. 13-15. However the Draft EIS does not appear to discuss the effect and significance of these impacts nor does it present any mitigation measures for potentially significant impacts. Draft EIS p. 14-13 ("No avoidance and minimization measures or additional mitigation measures have been identified	has proposed Mitigation Measure EJ-2: Reduce Effects of Employment Loss for Environmental Justice impacts for Alternatives 1 through 4. This mitigation measure would require assisting in offsetting agricultural sector job losses. Please see Appendix R, Land Use and Agricultural Resources Technical Appendix, for discussion of changes in agricultural land including fallowing under the alternatives. Fallowing is considered in the Statewide Agricultural Production (SWAP) Model, as described in Appendix Q Attachment 3, SWAP Model Documentation. Additionally, please see Standard Response 5, Adequacy of Analysis and Mitigation. Appendix Q has been repaginated in the Final EIS.

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	for Regional Economics."). The Draft EIS should be updated to discuss the significance of the economic impacts of the proposed action and other alternatives and to present mitigation measures that would avoid or minimize these impacts.	
64-27	The Draft EIS should also be updated to describe and include discussion of the Shires study conducted for Westlands which demonstrates for example that poverty rates are tied to water allocations. [Footnote 6: Michael Shires The Economic Impact of the Westlands Water District on the Local and Regional Economy: 2022 Update https://wwd.ca.gov/wp-content/uploads/2022/03/economic-impact-report-2022-update.pdf.] Reference should also be made to the Sunding and Roland-Holst study which correlated water supply reductions to reduced economic output in various geographic regions of the San Joaquin Valley. [Footnote 7: David Sunding & David Roland-Holst UC Berkeley Blueprint Economic Impact Analysis: Phase One Results (2020) https://waterblueprintca.com/wp-content/uploads/2021/09/Blueprint.EIA_.PhaseOne.2.28-v41.pdf.] The Draft EIS should be revised to incorporate such empirical data and studies to ensure a thorough and legally sufficient evaluation of the proposed action and alternatives on individual communities.	40 Code of Federal Regulations (CFR) § 1502.15 states that an EIS shall succinctly describe the environment of the area(s) to be affected by the alternatives under consideration, including the reasonably foreseeable environmental trends and planned actions in the area(s). Furthermore, 40 CFR § 1502.2(a) states that environmental impact statements shall not be encyclopedic. Reclamation has reviewed the information provided in the papers mentioned in the comment and believes the EIS contains sufficient information about regional economic development impacts for understanding the potential impacts of the action alternatives. The Sunding analysis referenced in the comment estimated impacts of implementing SGMA (which is already in the baseline No Action condition of this EIS) and of other "reductions in surface deliveries" (see Sunding and Roland-Holst 2020:3) Therefore, the Sunding findings and magnitudes are not directly relevant to the specific alternatives and water supply changes evaluated in the EIS. The Shires analysis mentioned in the comment presents demographic and poverty data and postulates a relationship between agricultural water supply and poverty, among other factors. Additionally, impacts to low-income and minority populations communities are described in Appendix T, Environmental Justice Technical Appendix, and Chapter 17, Environmental Justice. Reclamation has proposed Mitigation Measure EJ-2: Reduce Effects of Employment Loss, which would require assisting in offsetting agricultural sector job losses. Sunding, D., and D. Roland-Holst 2020. Blueprint Economic Impact

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		Analysis: Phase One Results. February 15. Available: https://cawaterlibrary.net/document/water-blueprint-for-the-san-joaquin-valley-economic-impact-analysis-phase-one-results.
64-28	The Draft EIS includes a cursory one paragraph summary of cumulative economic impacts that references Appendix Q and Appendix Y. Draft EIS p. 14-13. Appendix Y the Cumulative Impacts Technical Appendix however is devoid of detailed analysis of cumulative economic impacts particularly with respect to potential agriculture-related changes to the regional economy. For example whereas the Draft EIS acknowledges that implementation of SGMA "could constrain the ability to increase or maintain groundwater pumping to fully offset reductions in surface water deliveries" Draft EIS p. 14-6 Appendix Y does not otherwise provide an analysis of cumulative economic impacts associated with SGMA implementation.	Please see Standard Response 5, Adequacy of Analysis and Mitigation, regarding cumulative analysis. As noted in Appendix Q, Regional Economics Technical Appendix, the SWAP analysis is based on comparisons of alternatives at 2040 conditions in which the sustainability requirements of SGMA are assumed to be in effect. Section Q.2.9, Cumulative Impacts, describes the direction and magnitude of cumulative regional economic impacts by alternative and across regions.
64-29	I. Diversification of water portfolios is an unrealistic mitigation measure Appendix D Mitigation Measures of the Draft EIS correctly observes that NEPA requires federal agencies to consider appropriate mitigation measures to avoid or minimize specific impacts. Draft EIS p. D-1. Among potential mitigation measures identified in Appendix D is Mitigation Measure AG-1: Diversify Water Portfolios under which water agencies would diversify their water portfolios through actions including the sustainable conjunctive use of groundwater and surface water water transfers water conservation and efficiency upgrades and increased use of recycled water or water produced through desalination where available. Id. at p. D-36. The Draft EIS identifies this measure as a means of mitigating various impacts including impacts on land fallowing air quality public health (e.g. increased incidence of valley fever) conversion of agricultural land and visual resources. See e.g. id. at 11-4. However the diversification of water portfolios as a means of mitigating the	NEPA requires that the EIS include an analysis of potential means to mitigate adverse environmental effects. This analysis can include appropriate and reasonable mitigation measures that are outside the jurisdiction of the lead agency or the cooperating agencies. Such mitigation measures would not be committed to as part of the Record of Decision (ROD) issued by Reclamation. The mitigation measure identified, Mitigation Measure AG-1, relies on entities other than Reclamation to implement the measure. Because Reclamation does not have authority to implement this measure and the measure would be implemented on a voluntary basis, Reclamation cannot ensure that it will be implemented. If it is implemented, it will reduce impacts on agricultural land. As the most comprehensive environmental document, the EIS is an ideal vehicle to present not only the range of environmental effects, but also the complete spectrum of appropriate mitigation measures.

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	impacts identified in the Draft EIS is unrealistic and the Draft EIS does not contain any analysis regarding the feasibility of this mitigation measure to mitigate impacts identified in the Draft EIS. For large areas of the San Joaquin Valley it unlikely the actions described are feasible.	Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding Reclamation's process of developing and approving the ROD using the appropriate mitigation measures discussed in the EIS. Please also refer to Appendix D, Mitigation Measures, regarding discussions of how Mitigation Measure AG-1 could be implemented.
64-30	Sustainable conjunctive use of groundwater and surface water requires that farmers rely on surface water during wet periods and on groundwater during drought. However because of existing constraints on operations of the CVP even in average and above average years surface water supplies are inadequate to meet demands for irrigation water. As an example the Northern Sierra Precipitation: 8-Station Index for the 2015-16 water year was 57.9 which is well above average. Yet the allocation for south-of-Delta Central Valley Project agricultural contractors in 2016 was 5%. The Northern Sierra Precipitation: 8-Station Index for the 2018-19 water year was 70.7 which at that time was the third wettest year on record. Yet in 2019 the allocation for both south-of-Delta CVP agricultural contractors was 75%. Sound principles of conjunctive use demand that in water years like 2016 and 2019 farmers in the San Joaquin Valley rely on surface water not groundwater. However existing regulations of the CVP already frustrate the implementation of "sustainable conjunctive use" and some alternatives evaluated by the Draft EIS will only further diminish the water delivery capability of the CVP in every water year type. In areas of the San Joaquin Valley that rely on CVP exports from the Sacramento River and the Delta sustainable conjunctive use is not a feasible measure to mitigate impacts identified in the Draft EIS.	The DEIS explains that this is a voluntary measure in Chapter 15 Land Use and Agricultural Resources and associated Appendix R on page 15-10 and R-69, respectively. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation regarding Reclamation's process of developing and approving the ROD using the appropriate mitigation measures discussed in the EIS. NEPA requires that an EIS include an analysis of potential means to mitigate adverse environmental effects. This analysis can include appropriate and reasonable mitigation measures that are outside the jurisdiction of the lead agency or the cooperating agencies. Such mitigation measures would not be committed to as part of the Record of Decision (ROD) issued by Reclamation. The mitigation measure identified, Mitigation Measure AG-1, relies on entities other than Reclamation to implement the measure. Because Reclamation does not have authority to implement this measure and the measure would be implemented on a voluntary basis, Reclamation cannot ensure that it will be implemented. If it is implemented, it will reduce impacts on agricultural land. As the most comprehensive environmental document, the EIS is an ideal vehicle to present not only the range of environmental effects, but also appropriate mitigation measures. Reclamation acknowledges that many contractors have invested in diversification of their water portfolios to increase resiliency and

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		address water supply uncertainty, including modernizing production and irrigation methods, and building recharge basins and infrastructure to take advantage of wet years to sustainably manage groundwater resources. Language was added to the mitigation measure to provide for consideration of conservation plans and actions.
64-31	The Draft EIS also identifies water transfers as a water management action that may be utilized to mitigate impacts on land fallowing air quality public health conversion of agricultural land and visual resources. See e.g. Draft EIS p. 15-8. For water agencies like Westlands this begs the questions from where will the water to be transferred come and how will it be conveyed to areas in the San Joaquin Valley seeking to offset impacts resulting from reduced CVP deliveries? Water transfers presently are a critical tool used by water agencies in south-of-Delta areas served by the CVP to offset surface water supply reductions under the existing regulatory baseline and the primary source of water for these transfers is water made available from agencies in the Sacramento Valley and American River watershed through groundwater substitution regional water project reoperations or conservation of surface supplies. A major impediment to the effectiveness of this means of offsetting existing surface water supply reductions is conveyance of this water through the Delta; the "transfer window" extends only from July 1 through November 30 capacity at the CVP Delta pumping plant is often limited and a limit of 360000 acre-feet in below normal above normal and wet years is imposed on conveying water through the Delta. Implementation of alternatives evaluated in the Draft EIS will: (1) reduce water availability in the Sacramento River watershed; and (2) impose additional limitations on the operations of CVP Delta pumping plant. The Draft EIS provides	Please refer to Chapter 3, Alternatives, and Appendix E, Draft Alternatives, of the Draft EIS, for a description of the water transfer process as considered in the EIS, including the use of water transfers to increase water supplies in drier year types. Appendix E also notes that because actions taken by individual contractors to make water available for water have separate environmental compliance, they are not a component of this EIS. As stated in Appendix E, the timing and operations associated with the movement of the water to be transferred is a component of all alternatives analyzed by this EIS. As such, and as described in Chapter 3, Section 3.1.4.5, Water Transfers, of the Draft EIS, water transfers are the same under all the alternatives. The EIS analysis in Chapter 5, Water Supply, supported by additional discussion in Draft EIS Appendix H, Water Supply Technical Appendix, acknowledges that all alternatives other than the No Action Alternative would result in reductions of 5% to 6% in average annual water supply deliveries. The analysis notes that Alternatives 2 and 3 would generate reductions in average annual deliveries to some contractor types that would exceed 5% and would represent a measurable reduction in water supply when compared to the No Action Alternative. The proposed action and alternatives include supporting water transfers. Historically, water transfers have occurred in basin under

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	no explanation of how water transfers could play any meaningful role in offsetting future water supply reductions and the associated environmental impacts resulting from implementation of alternatives evaluated in the Draft.	the accelerated water transfer program as well as to north of Delta and south of Delta agricultural users. These are willing buyer and willing seller programs as provided in their contracts.
64-32	Water conservation is another water management action identified by Mitigation Measure AG-1. The feasibility of this mitigation measure is also doubtful. Water agencies and the farmers they serve in the south-of-Delta CVP service area have already invested significantly in water conservation to ameliorate water supply shortages experienced over the last three decades. For instance Westlands and farmers in Westlands have implemented conservation measures that have achieved a water use efficiency of 96%. Other agencies in the Delta-Mendota Canal service area and the San Luis Unit have implemented similar programs and it is uncertain to what degree additional conservation in these areas could mitigate the impacts identified in the Draft EIS on land fallowing air quality public health conversion of agricultural land and visual resources. At a minimum the Draft EIS should be revised to evaluate the likelihood that Mitigation Measure AG-1 can be implemented in a manner that would mitigate these impacts.	The Draft EIS explains that this is a voluntary measure in Chapter 15, Land Use and Agricultural Resources, and associated Appendix R, Land Use and Agricultural Resources Technical Appendix, on page 15-10 and page R-69, respectively. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding Reclamation's process of developing and approving the ROD using the appropriate mitigation measures discussed in the EIS. Please also refer to Appendix D, Mitigation Measures, regarding discussions of how Mitigation Measure AG-1 could be implemented. Reclamation acknowledges that many contractors have invested in diversification of their water portfolios to increase resiliency and address water supply uncertainty, including modernizing production and irrigation methods and building recharge basins and infrastructure to take advantage of wet years to sustainably manage groundwater resources. Language was added to the mitigation measure to provide for consideration of conservation plans and actions.
64-33	J. Appendix I-Groundwater should be updated to identify background conditions in the Westside Subbasin and repair analytical deficiencies in the impacts analysis Westlands reviewed Appendix I-Groundwater in its capacity as the Westlands Water District Groundwater Sustainability Agency the Groundwater Sustainability Agency ("GSA") for the Westside Subbasin of the San Joaquin Valley Groundwater Basin DWR	Appendix I, Groundwater Technical Appendix, has been updated to include a description of the Westside Subbasin. SGMA prescribes that GSAs develop GSPs to bring medium- and high-priority basins into sustainable operation. Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium and high priority basins with

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	Groundwater Subbasin Number 5-22.09 ("Westside Subbasin"). Westlands is concerned that the conclusions presented in Appendix I---and other portions of the Draft EIS relying on Appendix I---were drawn without considering the best available data from all affected subbasins. Specifically Appendix I omits key information regarding background conditions in the Westside Subbasin. For other subbasins Appendix I characterizes use of groundwater subsurface flows recharge and overdraft. These are fundamental elements necessary to determine environmental impacts and must be added to the Draft EIS for the Westside Subbasin. The omission of the Westside Subbasin also raises concerns that the economic analysis underestimates potential impacts within the Westside Subbasin associated with increased land fallowing tied to the inability to pump additional groundwater under various alternatives. Westlands urges Reclamation to rectify these issues and to update the impacts analysis to address the following issues.	overdraft conditions or 2042 for medium and high priority basins without overdraft. Each GSP that is either currently being developed or has been developed is specific to each groundwater basin/subbasin. The C2VSim groundwater model does not include specific actions for each GSP relative to parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decision regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The C2VSim model represents effects to groundwater resources that may be more substantial than when GSP provisions are fully enacted. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.
64-34	1. Appendix I-Section I.2 (page I-81) does not fully evaluate impacts of the proposed action and other alternatives Under SGMA a GSP is required to address undesirable results existing and/or occurring after January 1 2015---the effective date of SGMA. (Cal. Wat. Code 10727.2(b)(4).) Westlands' adopted GSP (the "Westside GSP") was predicated upon a reciprocal principle of "do no harm" and inclusive of its Minimum Thresholds and Measurable Objectives contemplates stabilizing 2015 boundary groundwater flow conditions between subbasins to ensure sustainable groundwater management across not only the	The Sustainable Groundwater Management Act (SGMA) prescribes that Groundwater Sustainability Agencies (GSAs) develop Groundwater Sustainability Plans (GSPs) to bring medium- and high-priority basins into sustainable operation. Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium and high priority basins with overdraft conditions or 2042 for medium and high priority basins without overdraft. Each GSP that is either currently being developed or has been developed is specific to each groundwater basin/subbasin. The C2VSim groundwater model does not include

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	Westside Subbasin but across the entire San Joaquin Groundwater Basin. The modeling in Section I.2 however fails to evaluate how adopted GSPs impact SWP and CVP contractors' ability to pump groundwater when surface water is reduced under various alternatives. To fully evaluate impacts under each alternative the model should simulate land use and groundwater conditions as a result of the proposed alternatives and the limits imposed under respective GSPs. With the implementation of SGMA GSAs and landowners across California cannot simply pump more groundwater if surface water is unavailable. For example if the surface water deliveries decline the Westside GSP requires increased land fallowing or the development of additional recharge projects to be able to pump more groundwater. The Draft EIS must be updated to examine these direct indirect and cumulative impacts.	specific actions for each GSP relative to parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decision regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The C2VSim model represents effects to groundwater resources that may be more substantial than when GSP provisions are fully enacted. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives. Each of the alternatives simulated in the EIS are simulated with the same assumptions regarding SGMA. Therefore, the comparison of each alternative to the No Action Alternative is comparable to each other to determine relative changes in groundwater resources. C2VSim is the best available groundwater modeling tool given the geographic scale of the analysis and the complexity of linking to the CalSim 3 model analysis.
64-35	2. Section I.2.9.1 (page I-224) Changes in Groundwater Pumping and Section I.2.9.4 (page I-225) Potential Changes in Land Subsidence must be updated to accurately reflect the impacts of Alternative 3 Section I.2.9.1 Changes in Groundwater Pumping briefly summarizes the alternatives and the relative changes in groundwater pumping under each concluding that Alternative 3's contribution to cumulative impacts on groundwater resources is anticipated to be minimal. Westlands strongly	The analysis provided in Chapter 6, Groundwater, and Appendix I, Groundwater Technical Appendix, indicates the potential decrease in groundwater levels for Alternative 3 as compared to the No Action Alternative. The location and timing of the changes are shown in the figures in Appendix I. As noted in Appendix I, decreases in groundwater levels below historical low levels have the potential to induce additional subsidence in areas that have geologic conditions favorable to subsidence.

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	disagrees with this conclusion. The projected changes to groundwater levels under Alternative 3 would result in groundwater conditions that are lower than 2015 groundwater levels which constitutes an undesirable result under the Westside GSP. These projected groundwater levels would exacerbate subsidence along the San Luis Canal reduce conveyance capacity and negatively impact surface water deliveries south of Westlands. The Draft EIS must be updated to reflect these impacts. Additionally the analysis should be updated to evaluate regional economic impacts tied to the projected increase in subsidence in Draft EIS Section 14.2 page 14-2. Further if groundwater conditions declined 200 feet as depicted in the projections on Figures I-120 through I-124 (pages I-195 through I-199) Westlands would be forced to reduce groundwater pumping and fallow more land not increase reliance on groundwater resulting in significant economic impacts to the regional economy. Thus the conclusion that Alternative 3's contributions to cumulative impacts would only be minimal is incorrect and must be updated. If as Appendix I projects Alternative 3 were to cause a groundwater decline of 200 feet the subsidence impacts would be far more serious than those acknowledged in the Draft EIS. Section I.2.9.4 Potential Changes in Land Subsidence briefly summarizes the alternatives identifies changes in groundwater elevations as minimal and states "Alternative 3 may contribute to cumulative impacts resulting in subsidence." (Draft EIS p. I-225.) This conclusion inaccurately leads the reader to believe that there is only a potential that the implementation of Alternative 3 may result in additional subsidence. In reality regional subsidence within the Westside Subbasin would be likely with a groundwater elevation decline of up to 200 feet. Within the Westside Subbasin approximately 85 percent of groundwater is pumped from the Lower Aquifer and below the Corcoran Clay. A groundwater level decline of up to	Conditions vary significantly among geological areas. Appendix I provides information on subsidence under Alternative 3. Section I.2.9.4, Potential Changes in Land Subsidence, has been updated to clarify subsidence is likely to occur in particular regions. Appendix W, Geology and Soils Technical Appendix, Section W.2.9.2, Potential Changes in Land Subsidence Due to Increased Use of Groundwater, and Appendix Y, Cumulative Impacts, Section Y.2.4.2, Potential Changes in Land Subsidence and Groundwater Quality, and Section Y.2.18.2, Alternatives 1, 2, 3 and 4, has also been updated. Also refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS and Standard Response 6, Hydrologic Modeling and Surface Water Resources, regarding hydrologic modeling.

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	200 feet as projected under Alternative 3 would result in reduced pore space in the Corcoran Clay and therefore likely contribute to subsidence. Further if groundwater conditions decline by up to 200 feet in areas of the Westside Subbasin then critical head levels will likely be exceeded and exacerbate subsidence. Appendix I should therefore be updated to correct the misleading statement that Alternative 3 "may" result in subsidence.	
64-36	3. Section I.2.9.1 (page I-224) Changes in Groundwater Pumping and Section I.2.9.4 (page I-225) Potential Changes in Land Subsidence must be updated to accurately reflect the impacts of Alternative 2 Section I.2.9.1 Changes in Groundwater Pumping concludes that "Alternatives 2 and 4 would have similar effects as Alternative 1 and would not contribute to cumulative impacts from groundwater pumping." (Draft EIS p. I-224.) Similarly Section I.2.9.4 (page I-225) Potential Changes in Land Subsidence concludes that "Alternatives 2 and 4 would have similar effects as Alternative 1 (less than a 1.2% increase) and would not be anticipated to contribute to cumulative impacts resulting in land subsidence." (Id. p. I-225.) The analysis however does not support these conclusion with respect to Alternative 2. Rather Figures I-100 through I-119 (pages I-165 through I-184) show groundwater declines of up to 25 feet under Alternative 2. Groundwater level declines of this magnitude have the potential to cause myriad direct indirect and cumulative impacts including those related to subsidence and as otherwise discussed in section J.2 above. The Draft EIS must be updated to fully analyze these impacts. In contrast as demonstrated by Figures I-125 through I-129 (pages I-209 through I-213) Alternative 4 would result in much smaller groundwater declines (and even small increases in groundwater levels in some scenarios) than Alternative 2. For this reason Alternative 4 represents an	The analysis provided in Chapter 6, Groundwater, and Appendix I, Groundwater Technical Appendix, indicates the potential increases and decreases in groundwater levels for each of the alternatives as compared to the No Action Alternative. The location and timing of the changes are shown in the figures in Appendix I, and there are summary tables that present the impacts. See tables I-2, I-4, I-7 through I-14, I-19, and I-22 for more information. As noted in Appendix I, decreases in groundwater levels below historical low levels have the potential to induce additional subsidence in areas that have geologic conditions favorable to subsidence. It should be noted that that while groundwater levels may have an annual average increase (or decrease), there may be periods of decreases (or increases) during the model simulation.

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	environmentally preferable alternative as compared to Alternative 2 with respect to groundwater impacts.	
64-37	K. Conclusion Westlands appreciates the opportunity to review and comment on the Draft EIS and hopes to work with Reclamation in a cooperative manner to ensure that the Final EIS addresses the issues identified herein. Reclamation's analysis ultimately must foster a workable environmentally sound plan for continued operations of the CVP that protects and restores the socioeconomic vitality of and minimizes the adverse environmental impacts in the regions the CVP serves while ensuring legally and scientifically supportable reasonable and effective protection mechanisms for the listed species.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
64-38	[Comment from 8/21/24 Fall X2 Request] Westlands Water District (Westlands) the San Luis & Delta-Mendota Water Authority the Friant Water Authority and the State Water Contractors (SWC) request that the Central Valley and State Water projects (South of Delta CVP and SWP together Projects) adaptively manage the Fall X2 provision for 2024 as described in the 2019 U.S. Fish and Wildlife Service (USFWS) Biological Opinion (BiOp) for Reinitiation of Consultation on the Coordinated Operations of the CVP and SWP (2019 BiOp) in recognition of (a) the peer-reviewed scientific conclusions indicating that the measure is ineffective for its stated purpose (b) the reality of monitoring results showing that Delta smelt would not be present to benefit from the measure (c) the inherent importance of the water supplies for multiple purposes and (d) because adjustment of the Fall X2 measure can be accomplished in a manner consistent with the current environmental compliance processes with limited needs for agency resources to be devoted to this effort. We elaborate on each of these points below. We understand that this request comes to you at the onset of preparations for this year's Fall X2	Refer to Standard Response 2, Related Regulatory Processes, for information on the 2019 Biological Opinions. The commenter's request that the CVP and SWP adaptively manage the Fall X2 provision for 2024 as described in the 2019 U.S. Fish and Wildlife Service Biological Opinion is an operations implementation request unrelated to the adequacy of the EIS and independent of the analysis of LTO alternatives undertaken and presented in the EIS. However, the No Action Alternative and Alternative 2 do include the Fall X2 provision as described in the 2019 USFWS Biological Opinion. Please refer to Standard Response 11, Summer Fall Habitat Action, for additional information regarding a Summer and Fall Habitat Action.

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	operation and during a time when staff of many agencies are focused on consultation efforts for long- term operations of the Projects. While acknowledging these circumstances we believe your agencies must take decisive action to demonstrate the advancement of science-based decision-making and prevent wasteful and unnecessary water supply impacts associated with a measure shown to be ineffective to benefit Delta smelt. We are available to make any necessary resources available to assist in implementing this adjustment and to otherwise collaborate in this opportunity for an inclusive process to manage based on real-time conditions and the best available science.	
64-39	[Comment from 8/21/24 Fall X2 Request] THE VALUE OF FALL X2 TO DELTA SMELT This year two important findings were released regarding the efficacy of the Fall X2 operation. These built on previous findings and conclusions that Fall X2 produces no measurable benefits to Delta smelt. The first finding was published in a peer-reviewed journal and the second was affirmation of those peer-reviewed findings in the USFWS Draft BiOp recently provided to interested stakeholders for review pursuant to the provisions in the Water Infrastructure Improvements for the Nation (WIIN) Act. These findings add to the growing body of evidence that the Fall X2 action as originally proposed in 2008 and as modified in 2019 does not provide the originally hypothesized critically required benefit for Delta smelt. First Polansky et al. [Footnote 1: Polansky L. Mitchell L. & Nobriga M. L. (2024). Identifying minimum freshwater habitat conditions for an endangered fish using life cycle analysis. Conservation Science and Practice 6(5) e13124. https://doi.org/10.1111/ csp2.13124.] (2024) used life stage models of Delta smelt to evaluate the potential of various flow augmentation operations on the species' population growth rate. The authors concluded that the Fall X2 measure did not	As a result of recent scientific findings, including the 2024 draft USFWS Biological Opinion, Reclamation has modified Alternative 4 to remove the Fall X2 requirement. In addition, Reclamation has conducted a Summer X2 sensitivity analysis that includes above normal wet years, export reductions, releases from storage, and fall X2 located at 85 km. A June action that uses a one-month block of water equivalent to what had been used for Fall X2, Delta Outflow no greater than 10,000 cfs (split between CVP and SWP in accordance with COA) and using both export reductions and storage withdrawals to meet outflow requirements. The No Action Alternative and Alternative 2 do include the Fall X2 provision as described in the 2019 USFWS Biological Opinion. Please refer to Standard Response 11, Summer and Fall Habitat Action, for additional information regarding a Summer and Fall Habitat Action.

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	appear to have any measurable benefit to the species: "The findings here suggest summer not fall or winter spring is the most important season for freshwater flow augmentation to assist Delta Smelt population growth rate." [emphasis added] While more work is needed to understand the value of summer outflow to Delta Smelt and any contribution the CVP or SWP should make beyond the augmentation already occurring the 2024 USFWS Draft BiOp further explains that the best available scientific data does not show a likely benefit to Delta smelt from the Fall X2 measure: The Delta Smelt Summer-Fall Habitat Action also includes a Fall X2 element (BA Section 3.7.6.1). The Fall X2 action is a 'pulse flow' in September of Wet and Above-Normal water years that carries over into October which is officially the subsequent water year. As proposed the pulse of freshwater would maintain a 30-day average X2 at 80 km in both months. The Fall X2 action was originally in the Service's 2008 Reasonable and Prudent Alternative (Service 2008) and was motivated by concerns about proposed 'flatlining' of habitat suitability in the autumn (Feyrer et al. 2011 p. 124 and their Fig. 5). The modeled Delta outflows for September and October are about the same in the PA as the NAA (i.e. within the CalSim 3 error) so there is no proposed change from baseline [Figure]. Currently proposed outflows in September and October are lower than what they were in the 1970s through 1990s (Feyrer et al. 2011 their Fig. 2) but they are higher than what occurred naturally [Figure]. However the more important question for the purposes of this effects analysis is whether the PA's fall flow regime will have negative effects on delta smelt specifically if variation in fall outflow will result in a detectable change in survival of the affected life stage. The Service has previously concluded that it would (Service 2008; 2019); however this conclusion is not supported by life cycle analysis [Table]. It is possible that the Fall X2 action could have effects on small numbers of delta smelt	

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	and that the effects could have positive or negative consequences. (Draft BiOp pgs. 100-101.)	
64-40	[Comment from 8/21/24 Fall X2 Request] The USFWS Draft BiOp also evaluates the potential effects of the Delta Smelt Summer-Fall Habitat Action (i.e. operation of the SMSCG and the Fall X2 measure) on longfin smelt. It concludes the "Delta Smelt Summer-Fall Habitat Action will not have discernable effects on the longfin smelt DPS." (Draft BiOp pg. 207.) The Draft BiOp then explains: Longfin smelt use the estuary very differently than delta smelt. A fundamental difference is the seasonality of the longfin smelt DPS's distribution in the estuary. By July when the SMSCG would begin to be operated the distribution of the longfin smelt DPS is not constrained by an upper salinity bound. When longfin smelt begin returning to the estuary in the fall distribution is broad but is influenced by X2 (CDFW 2020 their Fig. 2). However there is no information available to indicate that the location of X2 affects survival of fish by this stage in their life beyond potentially affecting the risk of entrainment. (Draft BiOp pgs. 205 207.)While we note that the USFWS Draft BiOp is a draft and that it is also fresh in its release it does rely upon rigorous peer reviewed scientific studies and is consistent with several other studies of Fall X2 that have been conducted since the measure was first proposed in 2008. [Footnote 2: Effects Analysis for the Delta Smelt Fall Habitat Action In 2019 U.S. Bureau of Reclamation https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=39803; FLOAT-MAST (Flow Alteration - Management Analysis and Synthesis Team). 2020. Synthesis of data and studies relating to Delta Smelt biology in the San Francisco Estuary emphasizing water year 2017. IEP Technical Report 95. Interagency Ecological Program Sacramento CA.]	Please see Standard Response 11, Summer and Fall Habitat Action, which provides a discussion of how Fall X2 is treated under each of the EIS alternatives. Standard Response 11 also provides additional information regarding longfin smelt. Please refer to Standard Response 2, Related Regulatory Processes, for information on the 2019 Biological Opinions.
64-41	[Comment from 8/21/24 Fall X2 Request] MONITORING	Please see Standard Response 11, Summer and Fall Habitat Action,

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	CONDITIONS Delta smelt are sensitive to abiotic conditions including temperature turbidity and salinity. Along with food availability contaminants and other stressors each of these three parameters is monitored at several locations throughout the Delta. Significant peer-reviewed literature describes the temperature tolerances of Delta smelt. In a recent effort the Delta Coordination Group considered the latest science and determined that at water temperatures greater than 22 deg C [Footnote 3: 22 deg C is the threshold that Delta Coordination Group considered when Delta smelt can survive for extended periods of time but the probability of increased health and condition (i.e. growth) will decline with increased sublethal stress (e.g. physiological behavioral).] (71.6 deg F) Delta smelt experience sub-lethal effects and temperatures greater than 25 deg C [Footnote 4: 25 deg C is the threshold that Delta Coordination Group considered when Delta smelt will not survive for extended periods of time.] (77 deg F) are lethal to Delta smelt. This year California's Central Valley experienced a staggering number of consecutive days with ambient temperatures above 110 degrees Fahrenheit approximately two weeks straight in most locations. In the Delta water temperatures are a function of atmospheric temperatures and exceeded 22 deg C for several weeks and 25 deg C for a few days in the north Delta arc region (see Figure 1 below) where the majority of the Delta smelt were caught in the monitoring in winter and spring of this year. Unfortunately this likely resulted in a very few if any surviving Delta smelt in the summer this year. Recent monitoring for Delta smelt has yielded very disappointing results (see Figure 2 below) indicating that only one smelt has been observed in recent weeks. It is very possible that despite hatchery augmentation and operations of the Projects for parameters that can be controlled at reservoirs there may not be a remaining measurable population of Delta smelt to benefit from a Fall X2	which provides a discussion of how Fall X2 is treated under each of the EIS alternatives to ensure a range of reasonable alternatives. Concern regarding the possibility of a depleted Delta smelt population is noted. Until the USFWS declares Delta smelt extinct, Reclamation needs to comply with Section 7 of the ESA. Please see Standard Response 2, Related Regulatory Processes, regarding compliance with the ESA.

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	action.	
64-42	[Comment from 8/21/24 Fall X2 Request] THE COST OF FALL X2Fall X2 has had varying but significant water supply and associated socioeconomic costs when implemented and has resulted in the redirection of millions of acre-feet of water that could have been beneficially used since its implementation in 2008. For example in 2023 alone the water cost to implement the measure was greater than 730000 acre-feet between the two Projects. This water could have otherwise been kept in storage delivered for use at farms and in cities stored or banked for drought resiliency or used for a variety of other purposes including other environmental purposes like improving water quality or temperature improvements. For the 2024 operational year Fall X2 is anticipated to reduce the CVP and SWP water supplies by an estimated 350000 acre-feet primarily through reduced exports but also through additional releases from upstream reservoirs. For context this is equivalent to one-third of Folsom Lake or nearly $200 million worth of water if purchased on the open market with untold additive economic value to the State were it able to be used in a different manner. If retained the 350000 acre-feet of Project supplies would provide an almost 10 percent increase for south-of-Delta CVP contract allocations and separately a 5 percent increase in SWP contract allocations. The importance of an additional allocation of this magnitude cannot be overstated. It would further efforts by public water agencies in investments to maximize supplies in wetter years such as this one including investments in groundwater and surface storage to improve conjunctive use and meet implementation requirements pursuant to the Sustainable Groundwater Management Act.	Refer to Standard Response 2, Related Regulatory Processes, for information on the 2019 Biological Opinions. The commenter's request that the CVP and SWP modify the 2024 Fall X2 action is an operations implementation request unrelated to the adequacy of the EIS and independent of the analysis of LTO alternatives undertaken and presented in the EIS. However, the No Action Alternative and Alternative 2 do include the Fall X2 provision as described in the 2019 USFWS Biological Opinion. Please refer to Standard Response 11, Summer and Fall Habitat Action, for additional information regarding a Summer and Fall Habitat Action.
64-43	[Comment from 8/21/24 Fall X2 Request] A PATH TO SCIENCE-BASED DECISION-MAKING We recognize the complexity of	Refer to Standard Response 2, Related Regulatory Processes, for information on the 2019 Biological Opinions. The commenter's

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	concurrent administrative efforts that are progressing related to consultation for long-term operations. We believe that a path exists for considering this request without causing undue effort or excessive process that would redirect agency resources and impact other priorities. The USFWS 2019 BiOp and the 2024 Interim Operations Plan (2024 IOP) provide the U.S. Bureau of Reclamation with flexibility to modify the Summer-Fall Habitat Actions which include a Fall X2 requirement in Above Normal and Wet Years through a structured decision-making process that involves the Delta Coordination Group. Table 5-7 on page 165 of the 2019 BiOp states that the CVP and SWP shall be operated to maintain a monthly average X2 at 80 kilometers during September and October of Above Normal and Wet years. However the text immediately below Table 5-7 provides that: Because the specific actions of this project element are to be determined annually by a Delta Coordination Group through a structured decision-making process the specific actions taken in each water year may be unique based on evaluation of outcomes of prior actions and conditions for that year. Furthermore the 2019 BiOp at pg. 170 provides that because "[t]he effects to individuals and to the population of [the Summer-Fall Habitat Action] cannot be quantified at this time . . . the structured decision-making process called for under this action will incorporate new results each year to help refine the potential benefits that may be realized." Because the 2024 IOP does not modify the Summer-Fall Habitat Actions from the 2019 BiOp this aspect of the 2019 BiOp remains unchanged. (2024 IOP [paragraph] 5 ["coordinated operations of the CVP and SWP not governed by Paragraphs 6 through 18 will continue to be governed by the 2019 Biological Opinions 2020 ROD the California Department of Water Resources (DWR) 2020 ITP for DWR's operations of the SWP (DWR's ITP) and any other applicable statutory or regulatory requirements"].) Collectively	request that the CVP and SWP modify the 2024 Fall X2 action is an operations implementation request unrelated to the adequacy of the EIS and independent of the analysis of LTO alternatives undertaken and presented in the EIS. However, the No Action Alternative and Alternative 2 do include the Fall X2 provision as described in the 2019 USFWS Biological Opinion. Please refer to Standard Response 11, Summer and Fall Habitat Action, for additional information regarding a Summer and Fall Habitat Action.

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	these provisions of the 2019 BiOp and 2024 IOP provide authority for the Delta Coordination Group to modify the 2024 Fall X2 action. For the reasons stated we believe that such a decision can and should be made swiftly.	
64-44	[Comment from 8/21/24 Fall X2 Request] NEXT STEPSAs summarized above the science and 2024-specific monitoring information do not support implementation of this action this year. We look forward to discussing the potential to adjust the 2024 Fall X2 action and are prepared to assist the regulatory agencies with the collection of monitoring information that could inform future adaptive management. This could include collection of Environmental-DNA (eDNA) or other monitoring data throughout the Delta. There is precedent for this type of cooperation such as in 2021 when the Delta smelt turbidity bridge was surveyed by water users. Further this is the type of cooperation that we would like to exercise in the future. In closing we thank you for your consideration of this important matter. We feel that a decision to not implement Fall X2 this year has a clear basis in the observations science and processes identified above. In the event of a different decision being to either fully implement or modify Fall X2 we respectfully request a written justification that includes a scientific basis. Such documentation will provide crucial transparency for this and future science-based decision-making and could highlight areas requiring targeted research to address any remaining areas of disagreement or uncertainty pertaining to Fall X2.	Refer to Standard Response 2, Related Regulatory Processes, for information on the 2019 Biological Opinions. The commenter's request for adjustment and postponed implementation of the 2024 Fall X2 action is an operations implementation request unrelated to the adequacy of the EIS and independent of the analysis of LTO alternatives undertaken and presented in the EIS. However, the No Action Alternative and Alternative 2 do include the Fall X2 provision as described in the 2019 USFWS Biological Opinion. Please refer to Standard Response 11, Summer and Fall Habitat Action, for additional information regarding a Summer and Fall Habitat Action.
64-45	[Comment from 8/21/24 Fall X2 Request] [See original comment for graphs of 15-min or hourly observed water temperatures at several locations along the north Delta arc during the summer months from CDEC. Yellow and red lines are included to roughly correspond with 71.6 deg F and 77 deg F respectively.]	The commenter provided this exhibit in support of EIS comments. Those comments are addressed in these responses to comments.
64-46	[Comment from 8/21/24 Fall X2 Request] [See original	The commenter provided this exhibit in support of EIS comments.

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	attachment of graphs of Weekly Delta Smelt Monitoring Summary for Summer 2024 (source: Figure 1 from 08/21/24 Draft EDSM Weekly Summary USFWS)]	Those comments are addressed in these responses to comments.

Table 4-65. Letter No. 65

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65-1	Dear Mr. Warner: The State Water Contractors and its member agencies (collectively SWC) appreciate this opportunity to comment on the public draft Environmental Impact Statement for the Long-Term Operation of the Central Valley Project (CVP) and the State Water Project (SWP) herein (Draft EIS). The SWC members are 27 water districts serving 27 million residents and 750000 acres of farmland receiving water from the SWP. [Footnote 1: Alameda County Flood Control District Zone 7 Alameda County Water District Antelope Valley East Kern Water Agency Casitas Municipal Water District Central Coast Water Authority City of Yuba City Coachella Valley Water District Crestline Lake Arrowhead Water Agency Desert Water Agency Dudley Ridge Water District Empire West Side Irrigation District Kern County Water Agency Kings County Littlerock Creek Irrigation District Metropolitan Water District of Southern California Mojave Water Agency Napa County Flood Control and Water Conservation District Oak Flat Water District Palmdale Water District San Bernardino Valley Municipal Water District San Gabriel Valley Municipal Water District San Gorgonio Pass Water Agency San Luis Obispo County Flood Control and Water Conservation District Santa Clara Valley Water District Santa Clarita Valley Water Agency Solano County Water Agency and Tulare Lake Basin Water Storage District.]	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
65-2	While we understand that the "Proposed Action" is Alternative 2 we are very concerned about the inclusion of Alternative 3 in the Draft EIS without any explanation of why this alternative is not feasible as it is contrary to both law and contracts. Alternative 3 should be dropped from further consideration. Alternative 3 would cost communities south of the Delta millions of acre-feet	Refer to Standard Response 4, Alternatives Formulation, for information regarding the rigorous analysis Reclamation undertook for the formulation of alternatives included in the analysis and for questions regarding the legality of considered alternatives. Refer to Appendix E, Draft Alternatives, for a description of the screening process used to focus and refine each

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	(AF) of water billions of dollars in replacement water costs and lost economic productivity and tens of thousands of jobs. The SWC further objects to Alternative 3 because the Draft EIS' analysis of this alternative is inconsistent incomplete and misleading. The SWC is also seeking clarifications related to the Proposed Action and to the programmatic discussion of the Sites Reservoir project.	of the alternatives carried forward for detailed analysis. Refer also to Standard Response 5, Adequacy of Analysis and Mitigation, for a description of the EIS's adequacy in meeting NEPA analysis requirements.
65-3	I. Alternative 3 should be rejected as infeasible and not given any further consideration. Alternative 3 is infeasible and results in economically devastating effects on California communities. The Draft EIS explains its assessment of alternatives that were ultimately rejected from further analysis being infeasible. Reclamation's criteria for making that determination are as described in Appendix V Screened Scoping Comments and include: How well each Alternative would meet the purpose and need; The extent that the Alternative or component is complete; Whether the Alternative is technically and economically feasible meaning the technology is readily available and can be implemented in a manner that does not require relatively large financial investments and relatively minor or unproven benefits; Value added meaning whether it is unnecessary because similar or better results is likely from a different or simpler configuration. Alternative 3 fails Reclamation's criteria for feasibility.	Please see Standard Response 4, Alternatives Formulation, regarding alternatives development and the range and feasibility of the alternatives evaluated in the EIS.
65-4	1. Alternative 3 does not satisfy the Purpose and Need Statement. First we have a concern with how the Purpose and Need Statement is written. Since operational consistency across the SWP and CVP is important and because the federal permits cover both the CVP and SWP we are concerned that the Purpose and Needs Statement is written solely in terms of the CVP. (See Draft EIS p. 0-2.) The project purpose should be that it "satisfies	Please see Standard Response 4, Alternatives Formulation, regarding alternatives development, and range and feasibility of the alternatives evaluated in the EIS, as well as the project's purpose and need. Standard Response 2 addresses DWR's separate CEQA process.

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	Reclamation's and/or DWR's contractual obligations and agreements" and not as written without a reference to DWR. The E.O. 13990 cannot be met and the goal of harmonizing operations cannot be achieved if DWR is not also meeting its legal requirements utilizing a consistent operations plan. But even if the purpose is focused on Reclamation's contractual obligations Alternative 3 absolutely does not meet that purpose and need.	
65-5	Equally important is the fact that Reclamation and DWR are water project operators and although there are many project purposes this consultation is ultimately to ensure compliance with ESA in operating the CVP and SWP. Alternative 3 far exceeds what is required to comply with both the Federal Endangered Species Act the California Endangered Species Act and the mitigation requirements of the National Environmental Policy Act and California Environmental Quality Act. Alternative 3 should be rejected because it is clearly inconsistent with nearly all of the applicable water supply contracts that would be impacted by this Alternative including Reclamation's contracts with the Sacramento River Settlement Contractors and water rights law and Reclamation's contracts and DWR's contracts with water contractors south of the Delta. Alternative 3 may violate Reclamation Law and the Central Valley Project Improvement Act as it prioritizes the environment over both agricultural and municipal uses. Alternative 3 is also contrary to the scope of the Endangered Species Act section 7 consultation because DWR is not seeking consultation on the operation of Oroville Reservoir. Alternative 3 is a complete imbalance of project purposes and does not meet the feasibility standard for CVP and SWP operations.	Please also see Standard Response 4, Alternatives Formulation, regarding alternatives development, and the range and feasibility of the alternatives evaluated in the EIS. Refer to Appendix E, Draft Alternatives, for a description of the screening process used to focus and refine each of the alternatives carried forward for detailed analysis. Please refer to response to comment 65-0003. Refer also to Standard Response 2, Related Regulatory Processes, regarding ESA. Reclamation operates consistent with applicable laws, contracts, and agreements. Concerns with Alternative 3 have been noted.
65-6	2. Alternative 3 is incomplete. It is not possible to operate Alternative 3 as described. For example this Alternative includes	

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	an unimpaired hydrograph at the upstream reservoirs with no accompanying explanation as to how Reclamation would determine the hydrograph without knowledge of future hydrology. Similarly it is unclear how Reclamation would determine that the carry-over storage requirements are met when targets include September. The description does not describe whether deliveries to the water contractors above Health and Human Safety levels would be permitted prior to September. If so based on what predictions and with what level of certainty? As described in more detail below the description of Alternative 3 is also incomplete because it does not disclose the unimpaired hydrograph and carry-over storage criteria for Oroville Reservoir even though the description indicates that such criteria will exist and assumed criteria were included in the modeling.	Please see Standard Response 4, Alternatives Formulation, regarding alternatives development and the range and feasibility of the alternatives evaluated in the EIS. Refer to Appendix E, Draft Alternatives, for a description of the screening process used to focus and refine each of the alternatives carried forward for detailed analysis. Concerns with Alternative 3 have been noted.
65-7	3. Alternative 3 is not technically and/or economically feasible. Alternative 3 is not economically feasible because this Alternative would cost communities south of the Delta billions of dollars and millions of acre-feet of water all while continuing to charge water agencies and their ratepayers for the ongoing operations and maintenance of facilities creating major water affordability issues. The average water supply impact of Alternative 3 to communities south of the Delta is 2.402 MAF and 1.206 MAF in dry and critical years. (Draft EIS p. F.2-4-31 Table F.2.4-12.) The SWP water supply impact to the South Coast Region M&I uses (Metropolitan Water District) is 666 TAF. (Draft EIS p. H-48.) The SWP water supply impact to the Tulare Lake and South Lahontan (includes Kern County Water Agency) is 493 TAF. (Draft EIS pp. H-46 through H-48.) Alternative 3 would also increase groundwater pumping pressures in the Central Valley by 626 TAF Draft EIS p. 6-10 thereby further impacting already existing subsidence concerns notwithstanding that new	Please refer Standard Response 4, Alternatives Formulation, on the feasibility of alternatives developed to ensure an adequate range of reasonable alternatives. The economic analysis of alternatives presented in Chapter 14, Regional Economics, and Appendix Q, Regional Economics Technical Appendix, restricts groundwater pumping to annual amounts consistent with estimates in Groundwater Sustainability Plans submitted in compliance with SGMA. The analysis approach is documented in Appendix Q Attachment 3, Statewide Agricultural Production Model Documentation. These groundwater pumping constraints apply under all alternatives, including the No Action Alternative. Therefore, the most important effects of SGMA, the reduction in available annual water supply for irrigation, are already built into the baseline. In short, the analysis shows additional impacts of LTO alternatives over and above impacts that have already occurred by 2040 due to SGMA

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	groundwater pumping would be limited under SGMA. If additional groundwater pumping is not permitted under SGMA then the water supply and economic impacts would be even greater than reported in the Draft EIS. The economic cost of Alternative 3 to Metropolitan Water District's service area for replacement water is $1112874000. (Draft EIS Appendix Q p. Q-59 Table Q-39). The economic impact on the region that Metropolitan Water District serves includes a decrease of 5487 jobs $307800000 in lost labor income and $1079571510 in lost revenue. (Draft EIS Appendix Q p. Q-62.) The fastest growing areas for affordable housing in California are those that pay for and rely on this water as an important component of their portfolio. It should be noted that the vast majority of disadvantaged communities in California reside in areas that rely on the State Water Project for their water supply further exacerbating the implications of this economically destructive Alternative. The estimated economic cost in the Draft EIS for San Joaquin Valley agriculture (including Kern County Water Agency) is $1589877127. (Draft EIS Appendix Q p. 91). Alternative 3 would result in the loss of 14404 jobs and $2304265320 in lost economic output in the San Joaquin Valley representing a significant impact to the agricultural economy of the San Joaquin Valley and often disadvantaged communities that rely on it. (Draft EIS Appendix Q p. Q-44 Table Q-64).	implementation. In addition to limiting annual groundwater pumping to average sustainable yield, the economic analysis also considered the effect of SGMA groundwater constraints on permanent crop (orchards and vineyards) planting and removal decisions. The inability of growers to use groundwater as a buffer to offset surface water variability results in greater risk of loss to permanent crops. Appendix Q Attachment 3, Section Q3.2.2, Selection of Perennial Crop Acreage Under Uncertainty, describes how this economic effect was evaluated and incorporated into the SWAP model analysis. Additionally, impacts to low-income and minority populations are described in Appendix T, Environmental Justice Technical Appendix, and Chapter 17, Environmental Justice.
65-8	The potential benefits of Alternative 3 in meeting the Purpose and Need Statement which includes compliance with law and contract as well as authorized fish and wildlife project purposes including the Central Valley Project Improvement Act (CVPIA) are uncertain. As already explained above Alternative 3 is inconsistent with CVP and SWP compliance with multiple laws and the water supply contracts. While also acknowledging that the CVPIA did not elevate fish and wildlife purpose above	Please refer to Standard Response 4, Alternatives Formulation, for the rigorous approach Reclamation undertook in the formulation of the reasonable range of alternatives. Both beneficial and adverse effects were found for each alternative and the criteria used to define them was applied consistently among all alternatives.

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	agricultural and urban uses the potential contribution of Alternative 3 to the CVPIA goal of doubling Chinook salmon populations is largely variable with many results being positive negative or largely unchanged from baseline in many water years although upstream critical year survival is somewhat improved. (Appendix O winter-run Chinook salmon results). The results do not show a consistent significant improvement across all metrics and water- year types and it therefore cannot be concluded that there is any value added. To the extent that Alternative 3 shows potential sustained benefits to Delta Smelt and Longfin Smelt the uncertainty associated with those model results should be acknowledged and explained. For example Longfin Smelt's statistical relationships between the FMWT and winter-spring X2 have been changing further limiting their statistical significance and predictive utility. Delta Smelt life cycle models also include significant and undisclosed uncertainty and the potential mechanism for any benefit of summer outflow to the species is unknown. The wide range of uncertainty associated with this significant water supply should be disclosed to show the actual tradeoffs between an uncertain and unproven environmental use and the real and calculable economic devastation to the state.	Uncertainties in the models used for the analysis of effects are discussed in each models' description, found in the attachments to the EIS, including Attachment J.1 for the Longfin Smelt-Ouflow analysis.
65-9	Alternative 3 is technically and economically infeasible and should be rejected from further consideration. The reasons for this conclusion are that Alternative 3 would result in substantial economic and water supply costs including to the majority of disadvantaged communities in the state; would result in significant increases in groundwater pumping; major components of the Alternative are contrary to law and contract; unproven and uncertain contribution to CVPIA salmon doubling goal; and highly uncertain benefits to native pelagic species.	Please also see Standard Response 4, Alternatives Formulation, regarding alternatives development and the range and feasibility of the alternatives evaluated in the EIS. Refer to Appendix E, Draft Alternatives, for a description of the screening process used to focus and refine each of the alternatives carried forward for detailed analysis. Concerns with Alternative 3 have been noted.

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65-10	B. The Draft EIS' analysis of Alternative 3 is flawed. The National Environmental Policy Act ("NEPA") requires that Reclamation describe the relative "significance" of alternatives. Specifically "the comparison of the proposed action and reasonable alternatives shall be based on their reasonably foreseeable effects and the significance of those effects." (40 CFR 1502.16.) While the SWC fully acknowledges the extensive modeling and comparison of results throughout the Draft EIS it is often difficult to determine the biological significance of model results particularly when multiple models are used to assess the same species same species life stage same region of the watershed and same category of effect. The magnitude of changes is disclosed but the "significance" is often difficult to determine. Since the significance is difficult to determine it is similarly difficult to understand where Reclamation believes that mitigation would be appropriate and the effectiveness of that mitigation.	The EIS has been prepared in compliance with NEPA and evaluates the direct, indirect, and cumulative potential impacts that may result from the proposed action and the action alternatives. The Draft EIS provides the magnitude and context of impacts throughout the document consistent with NEPA. Additionally, the EIS has been written in plain language with an emphasis on clearly and adequately disclosing the project's potential environmental effects in order to facilitate the public's, agencies,' and decision makers' review of the EIS. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS, NEPA requirements for impact determinations, and the identification and development of mitigation measures. Please also refer to Chapters 4–22 regarding the analysis of potential impacts for each environmental resource topic evaluated by the EIS and applicable mitigation measures. Appendix D, Mitigation Measures, also describes in detail the mitigation measures being considered.
65-11	The discussion of Alternative 3 also fails to satisfy the basic informative purpose of NEPA because the description of the Alternative and disclosure of results are often inconsistent between the main body of the Draft EIS the modeling of Alternative 3 and the appendices to the Draft EIS.1. Alternative 3 description is internally inconsistent and vague. The description of Alternative 3 is insufficient to satisfy the basic informational purpose of NEPA. The description of Alternative 3 is inconsistent and vague. The description of Alternative 3 can be found starting at Draft EIS p. 3-60 and at Appendix E Draft Alternatives p. E-161. Both descriptions of Alternative 3 state in the list of operational priorities that there are carry-over storage requirements at Oroville Reservoir (Priority 4). However at Draft	Please see Standard Response 4, Alternatives Formulation, regarding alternatives development and the range and feasibility of the alternatives evaluated in the EIS. Refer to Appendix E, Draft Alternatives, for a description of the screening process used to focus and refine each of the alternatives carried forward for detailed analysis. In Appendix E, Section E.6, Reclamation explains that implementation of this alternative may require additional authorities and actions by parties beyond Reclamation and DWR. Concerns with Alternative 3 have been noted.

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	EIS p. 3-63 Section 3.5.4 it states that "DWR will address Oroville Dam operations separately" and no carry-over storage requirement and no unimpaired hydrograph pass- through criteria are identified. Nevertheless the modeling includes carry-over storage requirements for Oroville Reservoir with an end-of-April target of 2400 TAF and an end-of- September target of 1600 TAF and an unimpaired hydrograph operation that is consistent with the federal reservoirs. (See CalSim file NGO_Stor_Targets.table.) Alternative 3 modeling is therefore inconsistent with the Alternative 3 description of the operation of Oroville Dam contained in the Draft EIS and inconsistent with the Oroville FERC Settlement Agreement.	
65-12	The list of Alternative 3 operational priorities is also vague. For example Alternative 3 operational priority number 2 is to "meet minimum reservoir release and instream flow requirements" but it is unclear which minimum releases and flow requirements are being referenced. It cannot mean minimum flows and requirements contained in D-1641 because meeting D-1641 is operational priority number 1. It does not appear to mean upstream unimpaired flow bypasses and outflow pursuant to Table 3-15 because that is operational priority number 5. We cannot determine exactly what operational priority 2 is referring to.	Minimum instream flow requirements are described in Chapter 3, Alternatives, following the list of operational priorities. - American River Minimum Instream Flow (Draft EIS Section 3.5.3.1) - Stanislaus Minimum Instream Flow (Draft EIS Section 3.5.6.1) - Minimum Flow Below Keswick (Draft EIS Section 3.1.1.1) - Rice Decomposition Smoothing (Draft EIS Section 3.1.1.2) - Fall Flow Stabilization (Draft EIS Section 3.1.1.1) Minimum Flow at Wilkin's Slough (Draft EIS Section 3.1.1.1)
65-13	2. The Draft EIS misrepresents water quality conditions under Alternative 3.The Draft EIS misrepresents the modeling results for Alternative 3 which results in a failure to disclose the significance of the impacts and potential mitigation. For example the body of the Draft EIS at p. 4-12 states that Alternative 3 salinity at Emmaton is lower than the No Action Alternative. However the modeling results suggest that the Emmaton standard is exceeded under Alternative 3 likely in multiple years. The Alternative 3 modeling result table in the Draft EIS water	The statement in the Draft EIS regarding modeled EC at the Sacramento River at Emmaton being lower under Alternative 3 compared to the No Action Alternative is supported by the modeling results in Appendix F, Modeling, Attachment F.2-5, DSM2—Salinity, referenced in this comment as well as modeling results presented in Appendix G, Water Quality Technical Appendix, Attachment G.1, Electrical Conductivity Modeling Results, which show decreases in EC in all months and water year types.

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	quality appendix suggests multiple exceedances of the Emmaton standard because the average salinity in below-normal water years is .639 mS/cm in June. The Emmaton standard is .45 mS/cm until June 20. (Appendix F Attachment 2-5 at p. F.2.5-136 Table F.2.5-4-6b.) Unless the modeled operations get significantly more saline after June 20 the standard is being exceeded.	Regarding the Emmaton water quality objective in the Bay-Delta Plan being exceeded under Alternative 3, the objective for below normal water years is 450 micromhos per centimeter (µmhos/cm) from June 1–19 (19 days) and 1,140 µmhos/cm from June 20–30 (11 days). Assuming that EC is 450 µmhos/cm for 19 days and 1,140 µmhos/cm for 11 days, the average EC for June is 703 µmhos/cm. Accounting for operations to transition over several days from complying with the lower objective to the higher objective, a modeled average EC of 639 µmhos/cm for June for below normal years is an appropriate result.
65-14	3. The Draft EIS misrepresents impacts to SWP water supply under Alternative 3.The reporting and analysis of water supply impacts is a significant concern. For example the body of the Draft EIS reports that Alternative 3 "would generate no measurable change to average annual SWP M&I deliveries." (Draft EIS p. 5-3.) As an example however the Draft EIS appendices report that Alternative 3 would reduce South Coast SWP M&I deliveries (Metropolitan Water District's service area) by 666 TAF (342 TAF in dry and critical years). By any measure this is a significant effect from both an economic and water security perspective for 19 million Californians which doesn't even include impacts to other communities in the San Francisco Bay Area Central Coast and San Joaquin Valley. Likewise a reduction of 493 TAF to the San Joaquin Valley including water supplies to the farming communities represents a significant reduction in available supplies and impacts to groundwater basin management their agricultural-dependent economies and national food security. The effect of misrepresentations of Alternative 3 in the body of the Draft EIS results in a failure to discuss the significant impacts of these substantial reductions in	Alternative 3 impacts discussed in Section 5.2.2, Trinity River, Sacramento River, Clear Creek, and American River, in Chapter 5, Water Supply, are for contract deliveries on the Trinity, Sacramento, Clear Creek, and American rivers and their tributaries and accurately reflect that there would be no measurable change to average annual SWP M&I deliveries for those contractors. Alternative 3 impacts for South Coast SWP M&I deliveries are discussed in Chapter 5, Section 5.2.5.4, South Coast Region. Section 5.2.5.4 accurately states that Alternative 3 would reduce (by approximately 54%) average annual deliveries to SWP M&I water users in that area. This is consistent with the 666 TAF reduction to South Coast SWP M&I deliveries under Alternative 3 presented in Table H 44. Alternative 3 - South Coast Region Contract Deliveries, in Appendix H, Water Supply Technical Appendix. Support for Alternative 3 has been noted.

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	SWP water supplies depriving the public and decision-makers of the true effects of this infeasible Alternative.	
65-15	4. The Draft EIS fails to disclose significant Human Health and Safety effects related to Alternative 3. The description of Alternative 3 provides a cascade of operations. Before any water can be diverted even for basic health and safety requirements Alternative 3 requires that D-1641 be met (Priority 1). However as explained above D-1641 is not consistently met under Alternative 3. And because under Alternative 3 no water would be diverted when D-1641 cannot be met and no TUCP's are allowed serious Human Health and Safety issues will occur. This Human Health and Safety concern is never disclosed in the Draft EIS because water diversions never go to zero even when D-1641 is not met. (See e.g. Draft EIS Appendix F Attachment 2-3 at p. F.2-3-309 Figure F.2.3-8-13). Even if there were never a threat to Human Health and Safety water deliveries the reported 2.402 MAF reduction in the south of Delta water supplies under Alternative 3 would have significant impacts on Human Health and Safety. It is unlikely that alternative supplies can be identified to replace these supplies and the Human Health and Safety of the impacted communities is therefore at risk. The Draft EIS does not disclose this impact. The analysis relies on the reader to comprehensively understand the context within which the magnitude and impact of these water supply reductions would occur. Our water agencies are acutely aware of what these reductions would mean for their service areas and do not agree that these impacts have been accurately described or disclosed.	Please refer to Standard Response 6, Hydrologic Modeling and Surface Water Resources, regarding the appropriate use of models for the purposes of comparative analysis in the EIS. Modeled results of operations under the action alternatives do not reflect an intention by Reclamation to deviate from requirements to meet applicable federal laws and regulations, e.g., D-1641. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis in the EIS to identify potential adverse impacts and formulate effective mitigation measures. Refer to Standard Response 4, Alternatives Formulation, for the rigorous approach Reclamation undertook to develop a range of reasonable alternatives. These alternatives take varying approaches and priorities to address the multiple purposes of the CVP.
65-16	5. The Draft EIS fails to identify and describe how Alternative 3 is inconsistent with law and outside of Reclamation's authority. NEPA requires a discussion of possible conflicts between alternatives and federal state regional and local plans policies and controls. (40 CFR 1502.16(a)(5)). While	Please see Standard Response 4, Alternatives Formulation, regarding alternatives development and the range and feasibility of the alternatives evaluated in the EIS. Refer to Appendix E, Draft Alternatives, for a description of the screening process used to focus and refine each of the alternatives carried forward for

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	there is a vague acknowledgment that Reclamation may not have the authority to implement Alternative 3 there is no discussion of all of the conflicts that exist in regard to multiple laws contracts and policies. Some of these conflicts are identified in the previous discussion related to feasibility and need to be better articulated to understand both the implications of this Alternative and its legal and contractual infeasibility.	detailed analysis. In Appendix E, Section E.6, Reclamation explains that implementation of this alternative may require additional authorities and actions by parties beyond Reclamation and DWR. Concerns with Alternative 3 have been noted.
65-17	II. Further clarification of the Proposed Action Alternative 2 should be included. The SWC is seeking the following clarifications to ensure consistency across state and federal permits. A. Spring outflow after year-2 and without the Healthy Rivers and Landscapes Program. The SWC appreciates that the Healthy Rivers and Landscapes Program including early implementation is included in Alternative 2. We would appreciate the clarification that Reclamation intends to adopt all modeled versions of Alternative 2 to cover all possible iterations of the implementation of the Healthy Rivers and Landscapes Program. If for example Reclamation only adopted Alternative 2 v. 2 we would be concerned that such an approval might be interpreted such that full CVP and SWP implementation of the Healthy Rivers and Landscape Program was not approved. We ask that Reclamation clarify that it is approving Alternative 2 as described at Draft EIS p. 3-54 and not as defined by only one of the Alternative 2 modeling iterations. At the same time in light of the recent Endangered Species Act listing of Longfin Smelt if the spring outflow is required by the fishery agencies regardless of whether we agree on its merit the SWC is concerned that DWR would be the sole contributor to winter-spring outflow after year-3 if the Healthy Rivers and Landscapes Program is not adopted. We continue to seek consistency in the coordinated operation of the CVP and SWP.	Section E.5 in Appendix E, Draft Alternatives, states that the phases of Alternative 2 could be used under its implementation and that all four phases are considered in the assessment of Alternative 2 to demonstrate the range of potential impacts. Please refer to Standard Response 10, Voluntary Agreements, regarding voluntary agreements. Regarding consistency in the coordinated operation of the CVP and SWP, as described in Section 2.1 in Chapter 2, Purpose and Need, of the EIS, one of the drivers of the request to reinitiate consultation is to voluntarily harmonize CVP operating criteria, as appropriate, with requirements for the SWP under CESA. Refer to Standard Response 2, Related Regulatory Processes, regarding coordinated NEPA review and ESA studies and processes. Reclamation complies with applicable federal laws and regulations.

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65-18	B. The Summer-Fall Habitat Action should allow for flexible implementation. In light of the evolving science related to the definition of fall Delta Smelt habitat and the effect CVP and SWP changes to that habitat the SWP asks that flexibility in the implementation of the fall X2 action be incorporated into the project description to account for adaptive management and allow for nimble operations in the future. Currently Fall X2 is a "hard trigger" in September and October of 80 km in wet and above normal water years. We ask that the project description be changed to provide for flexible implementation and permit a range of X2 between 80 km and 100 km in September and October of wet and above-normal water years. At a minimum a sensitivity analysis regarding this change could be added to the Draft EIS and Biological Assessment to analyze this request. We understand that there may be interest in experimenting with new summer flows in the future. In formulating any summer outflow action it is important to consider the fact that the CVP and SWP already contribute above the natural flows in the summer months as well as any impacts to other listed species should be considered. To the extent a summer action study is undertaken we request that the SWC be included in the development and implementation of the study. We have a history of assisting with adaptive management actions including providing funding for monitoring and synthesis of results. We would also recommend that the Healthy Rivers and Landscapes assets be considered as the initial source of flow for any potential June-August adaptive management studies.	Response The proposed modifications to the long-term operation of the CVP and SWP are in part to harmonize requirements imposed on the SWP by their ITP, as appropriate. Changes to the Proposed Action resulting in effects not previously analyzed is one of the four reinitiation triggers of the ESA. Refer to Standard Response 4, Alternatives Formulation, regarding selection of the preferred alternative. The Governance Structure proposed for Alternative 2B contains the flexibility to include additional entities as necessary. For example, the Draft EIS describes that the SHOT may convene relevant technical teams to support Shasta or system-wide policy decisions. WAPA is included in the Sacramento River Temperature and Flow Technical Group (SRG). As shown in Figure E-20 in Appendix E, Draft Alternatives, to the Draft EIS, this group has a direct relationship for elevation and decision-making with the SHOT, which has a direct relationship for elevation and decision-making with the Directors Group. The commenter's input regarding the function of the governance groups is noted and included in the record for consideration by decisionmakers. Refer to Section E.5.16 of Appendix E, Draft Alternatives, to the Draft EIS for a description of the purposes of CVP/SWP governance. All the alternatives, including the No Action Alternative, include the continued implementation of the 2000 Trinity ROD flows. Alternatives 2 and 2B were developed in coordination with the resource agencies, including USFWS, NMFS, CDFW and DWR.

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		Please refer to Chapter 3, Alternatives, and Appendix E, Draft Alternatives, for detailed information of all of the alternatives, including Alternatives 2 and 2B. Refer also to Standard Response 10, Voluntary Agreements, regarding voluntary agreements representation in Alternatives 2 and 2B. Reclamation believes that Alternative 2B meets the screening criteria, including feasibility. Please refer to Standard Response 9, Climate Change, regarding consideration of climate change in the analysis provided in the EIS. Reclamation invited 19 Tribes to be a cooperating agency for development of the Draft EIS. None accepted the invitation. Support for Alternative 3 is noted. Refer to Standard Response 10, Voluntary Agreements, regarding voluntary agreements represented in Alternative 2 and Alternative 2B. All the alternatives, including the No Action Alternative, include the continued implementation of the 2000 Trinity ROD flows. As a result of recent scientific findings, including the 2024 draft USFWS Biological Opinion, Reclamation has modified Alternative 4 to remove the Fall X2 requirement. In addition, Reclamation has conducted a Summer X2 sensitivity analysis that includes above normal wet years, export reductions, releases from storage, and Fall X2 location at 85 km. A June action that uses a one-month block of water equivalent to what had been used for Fall X2, Delta Outflow no greater than 10,000 cfs (split between CVP and SWP in accordance with COA) and using both export reductions and storage withdrawals to meet outflow requirements. The No Action Alternative and Alternative 2 do include the Fall X2 provision as described in the 2019 USFWS Biological Opinion. Please refer to Standard Response 11, Summer Fall Habitat Action, for additional information regarding a Summer and Fall Habitat Action. The EIS describes how Alternative 2 was developed and does not indicate that there is pre-commitment to any one outcome or

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		which alternative will be selected and documented in the Record of Decision. Moreover, an important distinction is that Alternative 2 is a consensus proposal to be submitted for consultation and analysis pursuant to NEPA, not an alternative that the agencies agreed in advance would be implemented. Members of the public and other cooperating agencies have had opportunities to participate in the EIS and alternatives process. Refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of alternatives, and Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding public outreach during the NEPA process. Modeling for Alternative 2 has been updated in the Final EIS to include the assumptions and actions described under Alternative 2B (the Preferred Alternative). Impacts of each phase of Alternative 2 are addressed in comparison to the No Action Alternative in Chapters 4 through 21 of the Draft EIS and their corresponding appendices. Refer to Standard Response 10, Voluntary Agreements, regarding voluntary agreements. Section E.5 in Appendix E, Draft Alternatives, states that the phases of Alternative 2 could be used under its implementation and that all four phases are considered in the assessment of Alternative 2 to demonstrate the range of potential impacts. Please refer to Standard Response 10, Voluntary Agreements, regarding voluntary agreements. Regarding consistency in the coordinated operation of the CVP and SWP, as described in Section 2.1 in Chapter 2, Purpose and

Ltr#-Cmt#	Comment	Response
		Need, of the EIS, one of the drivers of the request to reinitiate consultation is to voluntarily harmonize CVP operating criteria, as appropriate, with requirements for the SWP under CESA. Refer to Standard Response 2, Related Regulatory Processes, regarding coordinated NEPA review and ESA studies and processes. Reclamation complies with applicable federal laws and regulations. Reclamation appreciates the SWC offer for collaboration and assistance. As a result of recent scientific findings, including the 2024 draft USFWS Biological Opinion, Reclamation has modified Alternative 4 to remove the Fall X2 requirement. In addition, Reclamation has conducted a Summer X2 sensitivity analysis that includes above normal wet years, export reductions, releases from storage, and fall X2 location at 85 km. A June action that uses a one-month block of water equivalent to what had been used for Fall X2, Delta Outflow no greater than 10,000 cfs (split between CVP and SWP in accordance with COA) and using both export reductions and storage withdrawals to meet outflow requirements. The No Action Alternative and Alternative 2 do include the Fall X2 provision as described in the 2019 USFWS Biological Opinion. Please refer to Standard Response 11, Summer Fall Habitat Action, for additional information regarding a Summer and Fall Habitat Action.
65-19	C. Steelhead protections should account for the population. The SWC requests that the Draft EIS description of Alternative 2 be updated to reflect more recent project-related steelhead loss presumably because of improved species conditions to ensure that the full extent of our operations is permitted. Specifically we are requesting that the loss thresholds be increased to 4637 (90% of 2024 annual loss) with changes to OMR triggers adjusted accordingly. We think this adjustment is important because species losses should account for the then-current	Alternative 2 has been updated in coordination with NMFS in a manner consistent with this comment.

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	population including increases in population which may have been contributing to this year's elevated loss. We are also seeking expedited steelhead JPE planning and implementation to inform the entrainment management reflective of then-current population conditions at the export facilities within 4-years.In the near-term we further request that within one year an alternative approach is developed that would use surrogates to indicate when actions should be undertaken similar to the approach that has been implemented for the management of spring-run Chinook Salmon.	
65-20	D. Impacts of Sisk Dam Raise. The Biological Assessment provides estimates of the impact of the proposed expansion of Sisk Dam resulting in increases in CVP diversions between 6 TAF to 130 TAF in 49 of the 123 months analyzed. This caused an increase in the March-May salvage. The SWC requests that if the SWP is required to reduce pumping to mitigate any increased salvage the water supply impact is addressed appropriately through coordination with the SWP.	Operation of the CVP and SWP is through Coordinated Operating Agreement. The Proposed Action (Alternative 2), e.g. expansion of the Clifton Court export window, also includes measures that increase SWP exports and may increase salvage.
65-21	E. Assumed change to COA sharing for Shasta Reservoir Operations. As part of the temperature management action and agreement with the Sacramento Settlement Contractors the modeling assumes a change in the COA implementation. We object to this change. The presumption that there will be an actual reduction in the in-basin use is not supported based on the recent drought when Sacramento River Settlement Contractors deliveries were curtailed significantly. One of the reasons for the 2018 Amendment to COA was to rebalance the sharing of regulatory responsibility when Reclamation is having temperature compliance challenges in drier water year types. Now outside of the COA process there is an assumption that the SWP would be subject to another water supply impact in addition to the 2018 amendment. We object to any informal	Please refer to Standard Response 1, Responses to General Comments, and Standard Response 4, Alternatives Formulation, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. This is discussed in Appendix F, Modeling, Section F.1-1.4.3.2: Coordinated Operations Agreement COA is modified from the No Action Alternative to account for reductions to the Sacramento River Settlement Contractors in Bin 3B years to encourage the conserved water to remain in Shasta storage. The model does not assume a change in COA, rather, recognizes the reduction to in basin use (IBU) and implements a correction for that. CalSim results show that, absent any adjustment to the IBU,

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	agreement that would rebalance regulatory obligations outside of COA. There should be no changes to COA outside of the formal process where multiple changes and disparities would be considered collectively in a single consistent review process.	the lower SRSC diversions directly cause lower values of the variable IBU, with correspondingly lower storage withdrawals for both CVP and SWP. Because the in-basin use of SRSC diversions is primarily served by Shasta, removing this volume from IBU shifts the burden of CVP storage withdrawal to other in basin uses, and allows SWP withdrawals to be reduced beyond the sharing percentage typically in place in very dry conditions (60/40). SWP storage notably increases in many Bin3b conditions. The model variable I_SHASTA_SRSC reflects the reduced Shasta storage withdrawal in response to the lower SRSC diversions and corrects the shift in in basin uses.
65-22	F. Further clarification of Reclamation's participation in the Sites Reservoir should be included. The programmatic discussion of the Sites Reservoir Project should be clarified to make the proper distinctions between CVP and/or SWP operations and the proposed operations of Sites Reservoir. We would appreciate clarification that Sites Reservoir is not a CVP nor a SWP facility and that Sites water is not "project water." It would be helpful to explain that the CVP may have a participating share in the Sites project and that it is anticipated that Sites water would be exported through the CVP and SWP facilities during the existing water transfer window. A reference to the recent settlement with the SWC and DWR would also be appropriate to clarify that Sites Reservoir would hold water rights that are junior to the CVP and SWP and that Sites diversions are prohibited from interfering with CVP and SWP regulatory compliance.	Among the numerous permit requirements (see Sites Reservoir Project Final EIR/EIS, Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements), operation of the Sites Reservoir Project will require new or modified water rights, water supply, and operating agreements to accommodate the supplies identified by the modeled simulations. Implementation of the Sites Reservoir Project will require authorization from the SWRCB, Division of Water Rights, in the form of a permit to divert and store water. This EIS includes a programmatic evaluation of the Sites Reservoir Project as part of Alternative 2 (see Appendix AA, Evaluation of Sites Reservoir Project Operations). Implementation of the project (Sites) would require Reclamation to evaluate the need for future environmental compliance.
65-23	The SWC appreciates the significant modeling and analysis that Reclamation included in its Draft EIS and its adherence to its schedule. We hope that Reclamation will continue with its stated intention to adopt Alternative 2 with our requested clarifications. If you have any questions please contact [name and phone number redacted].	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.

Table 4-66. Letter No. 66

Ltr#-Cmt#	Comment	Response
66-1	Contra Costa Water District (CCWD) appreciates the opportunity to provide comments on the Bureau of Reclamation's (Reclamation's) Draft Environmental Impact Statement (EIS) for the Long-Term Operation (LTO) of the Central Valley Project (CVP) and State Water Project (SWP).	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
66-2	CCWD serves water from its intakes in the Sacramento-San Joaquin Delta (Delta) for residential commercial and industrial uses in eastern and central Contra Costa County. CCWD relies on the Delta for 100% of its water supply including CVP contract deliveries diversions under CCWD's own water rights and diversions under East Contra Costa Irrigation District's pre-1914 water right and so has a vital interest in the environmental effects of the proposed action. CCWD's operation of its diversion storage and conveyance facilities meets the permitting requirements of the Endangered Species Act and California Endangered Species Act through biological opinions (BOs) issued to Reclamation by the National Marine Fisheries Service (NMFS) and the United States Fish & Wildlife Service (USFWS) and an Incidental Take Permit (ITP) issued to CCWD by California Department of Fish and Wildlife (CDFW) collectively referred to in these comments as the "CCWD-specific BOs and ITP". The CCWD-specific BOs and ITP are separate and distinct from the BOs for the coordinated long-term operation of the CVP and SWP and from the ITP for ongoing operation of the SWP. Reclamation's Biological Assessment lists the CCWD-specific BOs in the Environmental Baseline as independent related activities (Draft EIS Appendix AB Chapter 2 Environmental Baseline Sections 2.5.5 and 2.5.6). Pursuant to the 2020 Record of Decision regarding the Coordinated Long-Term Modified	Refer to Response to Comment 66-3. Reclamation has updated the EIS with following language: MM-WS-2: Coordination with Contra Costa Water District. In implementing the selected alternative, Reclamation will coordinate with Contra Costa Water District (CCWD) to not create new or additional restrictions on CCWD's ability to fill Los Vaqueros Reservoir, beyond the restrictions that are imposed under the then current CCWD Biological Opinions, Incidental Take Permits, and other separate regulatory requirements, so that with implementation of selected alternative, CCWD will have opportunities to fill Los Vaqueros Reservoir that are at least comparable to the current conditions. Also, the text describing CCWD's facilities has been updated.

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	Operations of the CVP and SWP Reclamation and CCWD currently coordinate water operations to ensure that implementation of the coordinated operation of the CVP and SWP does not create new or additional restrictions on CCWD's ability to fill its Los Vaqueros Reservoir beyond the restrictions of the CCWD-specific BOs. This commitment was adopted to ensure that the federal action would not have water supply impacts to CCWD. The commitment reflects the fact that the CCWD-specific BOs and ITP include terms and conditions that fully mitigate for the effects of CCWD's diversions on listed species. The coordination between CCWD and Reclamation ensures that in-Delta standards and fishery regulations are met without additional limitations or restrictions on CCWD's operations beyond what is necessary to fully mitigate for CCWD's effects as identified in the CCWD-specific BOs and ITP. The successful coordination between CCWD and Reclamation has been ongoing since 2012 and is appropriately incorporated in the modeling analyses completed for the Draft EIS with CCWD's operational criteria in the No Action Alternative consistent with that ongoing coordination. Further CCWD's operational criteria in the modeling analyses for all action alternatives remains the same as the No Action Alternatives and consistent with the ongoing coordination. However the text of the Draft EIS does not clearly state these parameters of the scope of the Effects Analysis. To accurately reflect the Draft EIS analyses CCWD requests that the Draft EIS include the following text in the "Common Components" section for the Delta (Draft EIS Chapter 3 Section 3.1.4) specifying the operation of CCWD facilities (and consistent with the modeling for the EIS):	
66-3	3.1.4.5 Contra Costa Water District Operations Operations at CCWD's intakes and Los Vaqueros Reservoir are governed by a set of biological opinions from NMFS (NMFS	Reclamation has updated the EIS with following language: MM-WS-2: Coordination with Contra Costa Water District. In implementing the selected alternative, Reclamation will

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	1993 2007 2010 2017) and USFWS (USFWS 1993a 1993b 2000; 2007 2010 2017) (the CCWD-specific Biological Opinions) and an incidental take permit from CDFW (CDFW 2024) (the CCWD ITP). For the No Action Alternative and all Action Alternatives in this consultation CCWD's operations are assumed to be consistent with the operational criteria specified in the CCWD-specific Biological Opinions and CCWD ITP as they are currently being implemented. If implementation of the coordinated long-term operation of the CVP and SWP (the Project) creates new or additional restrictions on CCWD's water operations the Project would impact storage in CCWD's Los Vaqueros Reservoir storage in upstream CVP reservoirs water supply available to CVP contractors and aquatic species. None of these possible effects are analyzed in the Draft EIS since the modeling assumes that Project implementation will not create new or additional restrictions on CCWD's ability to fill its Los Vaqueros Reservoir beyond the restrictions of the CCWD-specific BOs. To avoid such potential significant adverse environmental effects and to ensure that implementation of the Project is consistent with the scope of the Effects Analysis as modeled in the EIS CCWD requests that Reclamation includes the following Mitigation Measure in the Final EIS: Avoidance and Minimization Measure XXX. In implementing [the Proposed Action // Alternative XXX] Reclamation will coordinate with Contra Costa Water District (CCWD) to ensure that project operations will not result in any new or additional restrictions on CCWD operations. CCWD operations will continue to be governed by the restrictions of the separate biological opinions that apply to CCWD's operations at its facilities (CCWD Biological Opinions). Reclamation will ensure that the projects' implementation of [the Proposed Action // Alternative XXX] will not create new or additional restrictions on CCWD's ability to fill its Los Vaqueros Reservoir as compared to the restrictions that are imposed	coordinate with Contra Costa Water District (CCWD) to not create new or additional restrictions on CCWD's ability to fill Los Vaqueros Reservoir, beyond the restrictions that are imposed under the then current CCWD Biological Opinions, Incidental Take Permits, and other separate regulatory requirements, so that with implementation of the selected alternative CCWD will have opportunities to fill Los Vaqueros Reservoir that are at least comparable to the current conditions. Also, the text describing CCWD's facilities has been updated.

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	under the CCWD Biological Opinions so that with implementation of [the Proposed Action // Alternative XXX] CCWD will continue to have opportunities to fill Los Vaqueros Reservoir that are at least comparable to the current conditions. The above-suggested mitigation measure is consistent with ongoing coordination and the 2020 Record of Decision regarding the Coordinated Long-Term Modified Operations of the CVP and SWP (2020 ROD page 24). In addition CCWD requests that Reclamation update the Draft EIS Appendices as specified in the attachment to the comments to accurately reflect CCWD's facilities and operations.	
66-4	Contra Costa Water District (CCWD) requests that the Appendices of the Draft EIS be updated as follows to accurately reflect information on CCWD's facilities projects and operations. 1. Appendix C Facilities Description. Page 74. Section C.8.8. CCWD's water system includes the Mallard Slough Rock Slough Old River and Middle River (on Victoria Canal) intakes; the Contra Costa Canal and shortcut pipeline; the Los Vaqueros Reservoir [added:; and related conveyance facilities]. 2.Appendix C Facilities Description. Page 75. Section C.8.8. Information of Contra Costa Canal Project needs to be updated. As of [Strikethrough: [Removed: late 2018] [added: late 2024] approximately 3 3.9 miles of the earth-lined portion of the Canal has been replaced (from Pumping Plant #1 to the east) and the flood isolation structure near the fish screen has also been completed.3.	Thank you for your review of the appendices. The requested edits have been made in the Final EIS.
66-5	3. Appendix F Modeling Part 1. Page F.1-1-3. There was a formatting error that included Contra Costa Water District intakes into the San Luis Reservoir paragraph. F.1-1.2.2.4 San Luis Reservoir The No Action Alternative reflects the current size of San Luis Reservoir and does not address the crest raise actions	Appendix F, Modeling, Page F.1-1-3: There is indeed a formatting error in Appendix F. The "Contra Costa Water District (CCWD)" should not be at the end of the last sentence of the paragraph discussing San Luis Reservoir. For the Final EIS, it should be changed to a subheading for the next section, which pertains to

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	per the B.F. Sisk Dam Safety of Dams Modification Project ROD (Bureau of Reclamation 2019). San Luis reservoir storage is split into two pools split between the CVP and SWP with 972 thousand acre-feet (TAF) and 1067 TAF capacities respectively. [Added: F.1-1.2.2.5] Contra Costa Water District (CCWD) Intakes The Contra Costa Canal originates at Rock Slough about four miles southeast of Oakley and terminates after 47.7 miles at Martinez Reservoir. Historically diversions at the unscreened Rock Slough facility (Contra Costa Canal Pumping Plant No. 1) have ranged from about 50 to 250 cfs. The canal and associated facilities are part of the CVP; but are operated and maintained by the CCWD. CCWD also operates a diversion on Old River and the Alternative Intake Project the new drinking water intake at Victoria Canal about 2.5 miles east of CCWD's intake on the Old River. CCWD can divert water to the Los Vaqueros Reservoir to store good quality water when available and supply to its customers. 4. Appendix F Modeling Part 1. Page F.1-1-6. Contra Costa Water District wheeling through Freeport is coordinated with EBMUD pursuant to separate agreements to occur on a mutually agreeable schedule. F.1-1.2.4.5 Contra Costa Wheeling through Freeport Through existing agreements and consistent with CCWD's CVP water service contract CCWD may wheel 3.2 TAF of water through the East Bay Municipal Utility District (EBMUD) share of the Freeport Regional Water Authority Intake Facility each year. Wheeled water is conveyed to CCWD via the Freeport Regional Water Authority pipeline Folsom South Canal Mokelumne Aqueduct and finally the CCWD-EBMUD intertie. EBMUD diversions [added: are modeled to] take priority over CCWD wheeling. 5. Appendix F Modeling Part 1. Page F.1-3-12. Contra Costa Water District is an in-Delta diverter its service area lies within or immediately adjacent to the Delta and its return flows contribute to Delta outflow. Therefore CCWD's diversions are not Exports. Further other intakes in Contra Costa	CCWD facilities. Appendix F, Page F.1-1-6: The assumptions described in this appendix represent what has been implemented in CalSim 3, a model that requires generalized rules used to simulate long-term operations. Such rules must be coarse and well-defined to properly inform the model in making operational decisions. Consequently, short-term and variable agreements between CCWD and EBMUD are not explicitly modeled. Appendix F, Page F.1-1.2.4.5, "EBMUD diversions [added: are modeled to] take priority over CCWD wheeling": This sentence may be updated accordingly for the Final EIS. However, it should be noted that all assumptions described in this appendix are representative of modeling assumptions. Adding this qualification to each assumption would create redundancy and overly extend the content within the appendix. Appendix F, Page F.1-3-12: As noted in Table F.3-4, the diversion nodes in CalSim 3 corresponding to Contra Costa WD are RSL004 (Rock Slough intake), OMR021 (Old River Pumping Station intake), and VCT002 (Victoria Canal Pumping Station intake), which appropriately represent in-Delta diversions. While CCWD diversions are in-Delta, the CCWD Pumping plant is functionally treated as an export for the ANN inputs. Table F.3-4 in Appendix F also specifies that these diversions correspond specifically to CCWD.

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	County (e.g. the City of Antioch's intake) are not included in the ANN so the text should be specific to CCWD (not all of Contra Costa County).	
66-6	6. Appendix O Fish Aquatic Resources. Page O-152.The Rock Slough Fish Screen was constructed in 2011 not recently.O.1.10.1 Contra Loma Reservoir Contra Loma Reservoir is a CVP facility in Contra Costa County that provides offstream storage along the Contra Costa Canal. The 80-acre reservoir is part of 661-acre Contra Loma Regional Park and Antioch Community Park (Bureau of Reclamation 2014b). There are currently 20 known fish species including 8 species of game fish in Contra Loma Reservoir. The East Bay Parks and Recreation District and CDFW stock rainbow trout and channel catfish in the reservoir. The reservoir also supports self-sustaining populations of largemouth bass crappie redear sunfish and bluegill which are also popular with anglers (Bureau of Reclamation 2014b). Other species found include white catfish threadfin shad big scale logperch common carp Sacramento blackfish warmouth green sunfish goldfish prickly sculpin and inland silversides (Bureau of Reclamation 2014b). Some of the fish species present have been introduced from the Delta via the Contra Costa Canal. [removed: Recently] In 2011 the Rock Slough Fish Screen at the head of Contra Costa Canal was constructed to prevent the entrainment of federally protected species such as Delta smelt at the Rock Slough Intake of the Contra Costa Canal. The screen also minimizes fish entrainment and significantly reduces the potential for fish introductions into Contra Loma Reservoir from the Contra Costa Canal (Bureau of Reclamation 2014b).	The year of construction of the Rock Slough Fish Screen has been added to the EIS.
66-7	7. Appendix P Terrestrial Biological Resources. Page P-16. There was a formatting error that included Contra Costa Water District Los Vaqueros Reservoir as if it is under Section P.1.7.4 State Water Project Reservoirs. Contra Costa Water District Los	Appendix P has been revised to move Contra Costa Water District Los Vaqueros Reservoir to its own subsection, P.1.7.5

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	Vaqueros Reservoir should be in a separate section. [Added: P.1.7.5.] Contra Costa Water District Los Vaqueros Reservoir	
66-8	8. Appendix Y Cumulative Impacts Technical Appendix. Page Y-6.Contra Costa Canal Replacement Project is almost completed except for a 700-foot section near the E. Cypress Rd. CCWD's Canal Replacement Project will replace [added: the earth-lined portion of] the canal with a pipeline along a portion of the 48-mile Contra Costa Canal near Oakley to reduce salinity and water quality impacts of groundwater seepage from adjacent agricultural areas as well as to increase public safety and flood protection. [Removed: Segment 1 of the Canal Replacement Project was completed in 2009 which installed 1900 feet of pipeline from Pumping Plant 1 to Marsh Creek. In 2015 Segment 2 was completed and installed 600 feet of pipeline from Marsh Creek past Sellers Avenue. (CCWD 2017). Contra Costa Water District will be initiating plans for the remaining sections.] [Added: As of late 2024 approximately 3.9 miles of the earth-lined portion of the Canal has been replaced with a buried pipeline (only 700 feet of earth-lined canal remains) and the flood isolation structure near the fish screen has also been completed.]	Appendix Y of the Final EIS has been updated to reflect the information provided by the commenter.

Table 4-67. Letter No. 67

Ltr#-Cmt#	Comment	Response
67-1	COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE REINITIATION OF CONSULTATION ON THE COORDINATED LONG-TERM OPERATION OF THE CENTRAL VALLEY PROJECT AND STATE WATER PROJECT Thank you for the opportunity to comment on the U.S. Bureau of Reclamation's (Reclamation) Draft Environmental Impact Statement (EIS) for the 2021 Endangered Species Act (ESA) Reinitiation of Section 7 Consultation on the Coordinated Long-Term Operation (LTO) of the Central Valley Project (CVP) and State Water Project (SWP) (collectively Projects).	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
67-2	The mission of the State Water Resources Control Board (State Water Board or Board) and Regional Water Quality Control Boards (Regional Water Boards) is to preserve enhance and restore the quality of California's water resources and drinking water for the protection of the environment public health and all beneficial uses and to ensure proper water resource allocation and efficient use for the benefit of present and future generations. The State Water Board administers water rights in California including the Projects' water rights and the various conditions placed upon those rights in State Water Board Decision 1641 (D-1641) Water Right Order 90-5 (Order 90-5) and other orders and decisions. The State Water Board and Regional Water Boards also have primary authority over the protection of the State's water quality. To protect water quality the State and Regional Water Boards develop water quality control plans that identify beneficial uses of water quality objectives to protect those beneficial uses and a program of implementation to achieve the objectives as well as monitoring and special studies and reporting requirements. The water quality control plans that	Please refer to Standard Response 1, Responses to General Comments, regarding the duration of the comment period, which complied with NEPA requirements. Reclamation staff and management remain available throughout the environmental review process to coordinate with interested parties and the public.

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	are relevant to the proposed project include the State Water Board's Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan) and the Central Valley and San Francisco Bay Water Boards' water quality control plans for the Central Valley and San Francisco Bay respectively. This comment letter includes preliminary comments on the Draft EIS based on State Water Board staff's limited review of the document and current understanding of the proposed project and associated environmental impacts. Given the voluminous amount of materials and short comment period staff have not reviewed all of the documents completely and understand that additional changes to the proposed project are possible upon completion of the concurrent Biological Opinions (BiOps) by the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). Board staff's review of the Draft EIS focused on components related to the Board's regulatory processes including the Bay-Delta Plan and associated Voluntary Agreements (VA) proposal for updating and implementing that plan D-1641 and Order 90-5. The State Water Board may have additional comments upon further review of the Draft EIS numerous appendices and development of the BiOps including any Reasonable and Prudent Alternatives and the SWP Incidental Take Permit (ITP) and any conditions.	
67-3	General Comments It is difficult to understand the Alternatives the modeling and analyses and the impacts of the Alternatives on the various resource areas due to the large number of appendices and attachments (over 100) and a lack of detailed summary information in the Draft EIS chapters. In addition there are four Alternatives which also include sub-alternatives that are not fully described in the Alternatives chapter. Specifically the alternatives chapter only describes that there are four "phases" of the	Refer to Standard Response 4, Alternatives Formulation, for information regarding the rigorous analysis Reclamation undertook for the formulation of alternatives included in the analysis. Individual subject matter experts standardized descriptors for impacts; there were no set descriptors established that overlapped analysis throughout the document. Due to the extensive and diverse nature of the information, it was not appropriate to set universal descriptors. For example, a 1%–5% increase in flows may be categorized as minimal, while a 4%

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	preferred alternative but does not describe them in any way. The EIS should be updated to clearly describe the Alternatives and to summarize the supporting analyses for the impact assessments. The Draft EIS contains unclear thresholds of significance for impacts to resources. The EIS should include a concise statement describing the thresholds for significant impacts to resource areas. In addition the impacts conclusions for each resource area are unclear because they provide a range of impacts determinations for each alternative. For example in Chapter 12 Fish and Aquatic Resources the impacts conclusion for Sacramento River spring-run Chinook salmon states that "Alternative 2 is expected to have adverse and beneficial impacts from water temperature on juvenile and yearling growth smoltification and predation vulnerability" (p. 12-32). Each chapter should include a clear concise description of the expected impact and justification for the impact conclusion based on the modeling and analyses presented in the document including summarizing supporting quantitative analyses at relevant time steps locations and other parameters.	increase in survival (within that 1%–5% range) may not be minimal, particularly in a dry or critically dry water year type. A 5% increase in flows in the mainstem Sacramento River will not be categorized the same as a 5% increase in flows in Clear Creek. Subject matter experts integrated the information to provide the analysis in the EIS, as it was not deemed appropriate to use set descriptors, and these determinations were left to expert judgment. Numerical results are provided in the line of evidence attachments and in Appendix O, Fish and Aquatic Resources Technical Appendix. Refer to Appendix E, Draft Alternatives, for a description of the screening process used to focus and refine each of the alternatives carried forward for detailed analysis. Refer also to Standard Response 5, Adequacy of Analysis and Mitigation, for a description of the EIS's adequacy in meeting NEPA analysis requirements.
67-4	Temporary Urgency Change Petitions Reclamation and the Department of Water Resources (DWR) are required to meet water quality standards set forth in D-1641. California law also requires that state offices departments and boards in carrying out their activities which may affect water quality must comply with water quality control plans approved or adopted by the Board. (Water Code 13247.) During certain drought emergencies the Governor has waived compliance with section 13247 under the Emergency Services Act (Government Code 8567) which has allowed the Board to consider Temporary Urgency Change Petitions (TUCPs) filed by the Projects to temporarily modify their water right obligations to meet water quality objectives. While this has occurred in the recent past it is	Conditions under which TUCPs would be requested by Reclamation are described in Appendix F, Modeling, Section F.1-1, CalSim 3, DSM2 and HEC5Q Modeling Simulations and Assumptions. Reclamation believes the modeling and simulations that were done for this analysis are an accurate representation of the hydrologic conditions under which a TUCP would be submitted to the SWRCB. Operations under TUCPs are analyzed in the preferred alternative for implementation without further NEPA compliance provided impacts are within the range analyzed.

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	speculative for the Projects to include alternatives for long-term operations that assume a Governor's Executive Order (EO) will be issued during droughts; the EO will waive section 13247 making TUCPs legally permissible; that TUCPs would be worded in specific ways; that the TUCPs would be granted; and that the conditions a future Board would impose would be consistent with assumptions in the analysis. For these reasons alternatives that include TUCPs in planned operations do not appear to be appropriate. Additionally it is unclear under what specific conditions TUCPs were assumed to occur in the TUCP alternatives and associated CalSim 3 modeling. For example Section F.1-1.2.3.5 assumes that certain "relaxations of D-1641 criteria implementing the 1995 Bay-Delta Plan will be triggered by low Shasta storage and/or Sacramento Index value" (p. F.1-1-5) but does not provide specific Shasta storage triggers and Sacramento Index values that trigger those assumed TUCPs. This is a significant assumption that should be clearly described in the main body of the EIS.	
67-5	Trinity River Appendix O identifies the potential for redirected impacts to the Trinity River under the preferred alternative 2. Tables O-174 through O-177 demonstrate that flow in the Trinity River could decrease under Alternative 2 with TUCP without VA Alternative 2 without TUCP without VA and under Alternative 2 without TUCP with Delta VA or with Systemwide VA between November and April depending on water year type. As noted in the Fish and Aquatic Resources section there could be up to an approximately 12 percent decrease in spawning habitat for Coho salmon in a more heavily used reach of the Trinity River in December of below normal water years. It is not clear why a preferred alternative that results in redirected impacts to the Trinity River is appropriate given concerns with protection of ESA species on the Trinity River. The rationale for selecting a	The Trinity River Division is part of the CVP. Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives.

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	preferred project with impacts to the Trinity River should be explained. Further possible changes to Trinity River operations that may result from the ESA reconsultation process on the Trinity River should be evaluated in the cumulative impacts analyses along with analyses of how such changes may affect proposed operations under the LTO process. Specifically the implications of possible changes in Trinity River operations should be evaluated with respect to Sacramento River temperature management operations and the ability to achieve expected temperature management results under the envisioned water supply and other operational proposals.	
67-6	Draft Alternatives No Action Alternative The No Action Alternative (NAA) assumes operations under the 2019 BiOps for the CVP and the 2020 ITP for the SWP. However the 2019 BiOps have not been fully implemented by the CVP due to litigation and associated court orders. Accordingly it is not clear why the NAA assumes the 2019 BiOps would be implemented in the NAA. Relying on the 2019 BiOps for CVP operations for the NAA fails to fully capture the extent of reductions to Delta outflows that would result from the proposed project in addition to the reduced Delta outflows and other operational effects under the 2019 BiOps (approximately 240 TAF on average). This creates an artificially low point of comparison for the proposed project thereby masking the full extent of the cumulative effects on Delta outflows. These effects should be evaluated and described.	Refer to Standard Response 3, Baseline and No Action, regarding the adequacy of the No Action Alternative.
67-7	Alternative 1 Water Quality Control Plan Alternative 1 is identified as the "Water Quality Control Plan" Alternative. This alternative should be renamed to more appropriately reflect what is included in the alternative and what is not namely partial implementation of D-1641. This should also be clearly stated in the description of the alternative. Specifically	This alternative is further described in Chapter 3, Alternatives, Appendix E, Draft Alternatives, and Appendix F, Modeling. Please refer to the detailed description to resolve uncertainty on operations under this alternative. Please also see Standard Response 10, Voluntary Agreements.

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	the EIS should be clear that this alternative does not include the 2018 updates to the Bay-Delta Plan. It should further be explained that it does not include compliance with the San Joaquin River spring pulse flow and interior southern Delta salinity objectives from the 1995/2006 Bay-Delta Plan and D-1641. It also does not include an evaluation of possible Sacramento/Delta updates to the Bay-Delta Plan. In addition in prior comments and interagency coordination the State Water Board recommended including requirements from the current Bay-Delta Plan adopted in 2018 as part of the regulatory baseline evaluated in the EIS and the proposed Project. The State Water Board reiterates these comments. Further the definition of Common Components the NAA and Alternatives 1 2 and 4 should be revised to explicitly disclose that they only include partial implementation of the prior Bay-Delta Plans adopted in 1995/2006 and these alternatives do not include the current Bay-Delta Plan that was adopted in 2018.	
67-8	Stanislaus River Operations The description of Stanislaus River seasonal operations is inconsistent at times incorrect and unclear throughout the document. The Common Components section of Chapter 3 (p. 3-18) and Appendix E (p. E-30) describes Stanislaus River seasonal operations as operating to D-1641. However as mentioned above Reclamation has not historically met various D-1641 San Joaquin River flow requirements. The D-1641 flow requirements for the Lower San Joaquin River include "spring base flows" that apply from February 1 through April 14 and May 16 through June 30 "spring pulse flows" from April 15 to May 15 and October base and pulse flows. Since adoption of D-1641 the CVP has largely been operated to achieve the spring base flows and to some extent to meet the October flows. However there have been various instances in which these requirements have not	Reclamation believes the EIS is accurate in its description of CVP operations and how these operations meet the requirements of D-1641. The State Water Board has not fully completed implementation of the allocation of responsibilities for the Vernalis spring pulse flows to the tributaries on the San Joaquin River. These flows were not intended to be met from the Stanislaus River, alone. Instead, between approximately 2000 and 2016, an agreement was in place to acquire contributions from the other tributaries. Alternative 2 contributes to the D-1641 spring pulse and meets the Stanislaus instream flow and temperature requirements and objectives.

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	been met some of which have been approved through TUCPs and some of which have not. Reclamation has not been operated to achieve the spring pulse flow requirements since those requirements came into effect. The common components description of Stanislaus River seasonal operations should clarify which components of D-1641 Reclamation is proposing to comply with going forward as part of the common components and alternatives. This should also be clarified in other relevant portions of the EIS. The description of Stanislaus River seasonal operations in the NAA and Alternative 2 incorrectly refer to "operating by season with the same primary purpose as described in common components." As described above the common components description of Stanislaus River seasonal operations states that Reclamation will operate to D-1641 (p. E-30). The NAA (p. E-55) and Alternative 2 (p. E-112) state that the Stepped Release Plan flows on the Stanislaus River are the contribution to D-1641 flow requirements rather than that Reclamation will achieve the flow requirements. If it is the intention to define the NAA and Alternative 2 as only contributing to achieving D-1641 flows instead of operating to achieve D-1641 flows that should be clearly described in the EIS. The EIS should also describe that Reclamation will be required to comply with the 2018 Bay-Delta Plan Lower San Joaquin River objectives in the future and should analyze any effects doing so will have on the proposed project. The Draft EIS explains that common components are elements of the NAA and all the other alternatives and that they describe where interagency coordination and a review of literature and scoping comments did not identify substantial disagreement with the potential resource tradeoffs. However this is not the case for the San Joaquin River common components where there is documented interagency disagreement regarding CVP operations to achieve Lower San Joaquin River flow and southern Delta salinity	

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	requirements. These issues should be acknowledged and Reclamation should be working cooperatively with the State Water Board to resolve them through implementation of the updated objectives.	
67-9	Alternative 2 Multi-Agency Consensus The Draft EIS identifies Alternative 2 as the "Multi-Agency Consensus" Alternative and describes the process for developing this alternative as meeting with the State Water Board and other agencies to "harmonize as appropriate operations of the CVP with California Endangered Species Act (CESA) requirements for the SWP" (p. E-2). The Draft EIS further explains that 65 small group meetings were used to "identify substantial physical and biological science disagreements and reconcile as appropriate operating criteria for the State and Federal Projects" and that "Senior Agency Management and Directors developed the actions necessary for a consensus alternative" (p. E-3). State Water Board staff participated in some limited initial small group meetings but were not part of the full process or the later processes to develop the proposed project and the input provided by State Water Board staff on limited elements of the proposed project does not appear to be reflected in the proposed project. This should be clarified in the EIS. The proposed project (Alternative 2) does not incorporate updates to the Bay-Delta Plan for Lower San Joaquin River flows and southern Delta salinity that were completed in 2018 and will apply to Reclamation's water rights in the San Joaquin River watershed when the flow objectives are implemented. In an April 18 2022 comment letter on Reclamation's Notice of Intent to Prepare an EIS Board staff identified that the 2018 Bay-Delta Plan requirements for the Lower San Joaquin River including requirements on the Stanislaus River should be evaluated as part of the regulatory baseline. It is reasonable that meeting a	Regarding the 2018 Bay-Delta Plan, Reclamation complies with applicable federal laws and regulations. The text will be clarified in the EIS regarding the State Water Board participation.

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	regulatory minimum should also be part of the preferred alternative. This issue was identified for and discussed with Reclamation during the staff interagency meeting process in 2022. State Water Board staff invested substantial time working with interagency partners in 2022 to incorporate 2018 Lower San Joaquin River flow requirements into the proposed action and preferred alternative but Reclamation did not incorporate that input. The State Water Board continues to recommend that the preferred project incorporate compliance with the 2018 Bay-Delta Plan requirements which were held up in full in the Superior Court and are not enjoined. The description of the Longfin Smelt Adult Entrainment Action in Appendix E refers to equations and steps that do not appear to be available. At the bottom of page E-98 there are references such as "see 7 for catch thresholds" and "(#2 above)" but it is not possible to determine what those numbers are referring to since no numbered sections or equations with those numbers are present in the document. Without this information it is unclear how this action would operate. Section E.5.1.9 states that the flow and non-flow actions in Alternative 2 are not intended to conflict with the State Water Board's Narrative Salmon Objective or the Narrative Viability Objective if the VAs are adopted (p. E-72). To ensure this Board staff should be included in all relevant decision-making groups governing operations of Alternative 2. If the Directors Group Water Operations Management Team (WOMT) Shasta Operations Team (SHOT) or other governance groups will be used to discuss VA flow commitments or any areas of overlap with Bay-Delta Plan or Order 90-5 requirements State Water Board staff should be included in the membership to ensure consistency with Board requirements.	
67-10	Alternative 2B The Draft EIS identities Alternative 2B as the preferred	Refer to Standard Response 4, Alternatives Formulation, for information regarding development of the alternatives considered

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	alternative. However not all components of Alternative 2B including changes in the QWEST threshold and an extension of the Clifton Court Forebay operation period by a month were included in quantitative modeling in the Draft EIS (p. 0-3). To fully evaluate the effects of Alternative 2B the EIS should include those project components in quantitative modeling. The Draft EIS identifies four "phases" for Alternative 2 with and without TUCPs and components of the proposed VAs (Delta or Systemwide). The Draft EIS does not provide a detailed description of what is included in each phase and whether they represent proposed operating constraints or illustrative modeling assumptions. This should be clarified in the EIS. Further the Draft EIS does not provide any modeling results for hydrology water supply and species-specific impacts under Alternative 2B. This information should be provided in the main body of the EIS. Project impact analyses provided in the Draft EIS conclude that Alternative 2 and the preferred Alternative 2B would have similar levels of impacts on aquatic species compared to the NAA which represents already degraded conditions including reductions in Delta outflows associated with the 2019 BiOps as discussed above. The EIS should describe the rationale for selecting Alternative 2B as the preferred alternative given these issues. Section 3.4.1.3 states "[i]n response to major storm events Reclamation after coordination through the SRG [Sacramento River Group] and SHOT and also through adaptive management may determine that lower flows achieve the same biological effects as the minimum flow of 3250 cfs at Keswick Dam. If these flows are determined to meet the same biological intent Reclamation may temporarily reduce below 3250 cfs to preserve storage" (pp. 3-433-44). Order 90-5 (p. 61) requires a minimum flow of 3250 cfs from Keswick Dam during the months of September through February and requires that any lowering of flows shall be reported to the Chief of the Division of Water	in the EIS and the rationale for selection of the Preferred Alternative. Refer also to Standard Response 5, Adequacy of Analysis and Mitigation, for a description of the EIS's adequacy in meeting NEPA analysis requirements. The Final EIS contains updated modeling for Alternative 2 that includes the additional assumptions and actions of Alternative 2B. No separate Alternative 2B is described in the FEIS.

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	Rights within five days together with reasons for lowering the flows; if the Chief of the Division of Water Rights objects Reclamation shall immediately restore the flows to 3250 cfs.	
67-11	Sacramento River Temperature Management The Draft EIS describes proposed measures to modify operations on the Sacramento River to address water supply limitations and improve temperature management. While temperature management is a nonconsumptive use of water temperature management is dependent on reservoir storage levels and releases. The State Water Board supports efforts to meaningfully improve Sacramento River temperature management consistent with the intent of Order 90-5 and to address conditions that have occurred in recent droughts creating temperature management and health and safety concerns. Section 3.4.1.7 under Alternative 2 and Section E.5.2 of Appendix E describe "bins" to manage water temperature and storage to meet "Victorian Objectives" during multi-year drought sequences (pp. 3-443-46). However it is unclear how decisions will be made to determine the bins for each year and what authorities may be exercised by agencies involved in those decisions making it unclear if the expected benefits will be achieved. The discussion that follows summarizes State Water Board staff understanding of the proposal and suggests how the EIS and Proposed Action should clarify this decision- making process. As described in Section E.5.2 of Appendix E Alternative 2 proposes a "Framework Approach" that classifies water temperature management into three Bins each of which is separated into "A" and "B" variants depending on projected end of April and end of September storage levels. Bin 1 is intended to provide for "enhanced" conditions for species targeted by the management action and is expected to encompass approximately 80 percent of years; Bin 2 is intended to provide conditions to "recover and maintain" the	NEPA regulations limit the number of pages and favors the use of appendices for technical information Please refer to Standard Response 1, Reponses to General Comments and Comments about Public Outreach, regarding page limits and structure of the Draft EIS. Given page constraints under NEPA regulations, Chapter 3, Alternatives, is a summary of Appendix E, which provides a more detailed description. Providing a more detailed description does not amount to inconsistencies between Chapter 3 and Appendix E. Tabular information about TDM is provided in Attachment L.2, Egg-to-Fry Survival and Temperature Dependent Mortality. Identification of the bins is fully described by end-of-April and end-of-September storage, and the actions Reclamation will take are also described. Furthermore, the Shasta Framework recognizes the constraints of hydrology and Reclamation's ability to affect water temperatures.

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	same species and is expected to encompass approximately 11.5 percent of years; finally Bin 3 is intended to "protect" the target species and is expected to occur in about 8.5 percent of years. Each Bin has a set of available management actions as well as associated "Operational Goals and Objectives" "Biological Goals and Objectives" and "Operational Goals and Indicators." The lists of available management actions and operational goals do not appear to be comprehensive; for example the description of actions available for achieving the lower threshold of Bin 1 end-of-September (EOS) storage of 2.4 million acre-feet (MAF) states "Available actions primarily include rebalancing between other CVP reservoirs while maintaining all operational goals." (Appendix E p. E-75; emphasis added.) The operational goals and objectives listed immediately below also do not appear to be comprehensive (e.g. hydropower considerations that are explicitly included in existing temperature management activities are not mentioned) or quantified (e.g. minimum water service allocations or explicit allocation procedures are not identified for each Bin). The EIS and Proposed Action should specifically and clearly define the procedures including allocation procedures Reclamation commits to use to implement the framework approach to ensure the intended improvements to temperature management and protection of cold water dependent fish species. Additional comments regarding Sacramento River water temperature management are discussed below. Modeling results shown in Table 5-15 of Appendix AB Chapter 5 suggest that Bin 1 conditions may be expected to occur in less than 70 percent of years whereas Bins 2 and 3 may be expected to occur in 13 percent and 19 percent of years respectively. If these modeling results represent Reclamation's best available estimate of the frequency of years in each water temperature management Bin the frequencies identified in the description of Alternative 2 should be updated accordingly along with the associated	

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	impacts conclusions. In any case the expected frequencies should be substantiated. Temperature-dependent mortality (TDM) modeling results shown in Figures 5-11 and 5-12 of Appendix AB Chapter 5 suggest that the biological objectives for Bin 2 and Bin3 years (TDM less than 3 percent and 30 percent respectively) are likely to be unmet in approximately half of Bin 3 years and most Bin 2 years. These conclusions are based on visual interpretation of exceedance curves; staff were unable to find tabular summaries of modeled TDM for the alternatives analyzed in the Draft EIS. This issue should be explained and evaluated and tabular summaries of temperature modeling results should be provided and appropriately summarized and referenced in the main body of the EIS. The description of the operation of Shasta Reservoir for water temperature and storage management under Alternative 2 differs between Chapter 3 (Section 3.4.1.7) and Appendix E (Section E.5.2 Framework Approach). For example Bin 1B is omitted from Section 3.4.1.7 but is included in Section E.5.2.1 of Appendix E. Additionally the description of Bin 3B actions in Section 3.4.1.7 does not clearly describe the additional limitations to Sacramento River Settlement Contractor deliveries that may occur in Bin 3B years with inflow (presumably Shasta reservoir inflow) less than 2.5 MAF. These and other inconsistencies are likely related to the disparate level of detail in Chapter 3 versus Appendix E. However the summaries in Chapter 3 should capture sufficient detail for the public to understand what actions are likely to be taken under a given alternative and which are specific commitments and which are voluntary or uncertain. Contrary to the "Tiers" found in the 2019 BiOps the "Bins" do not make reference to cold water storage volumes. As stated in the 2019 BiOps "Reclamation anticipates that a projected May 1 storage greater than 4 MAF provides sufficient cold water pool management for Tier 1 and may release the spring pulse if it does not impact the	

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	ability to meet project objectives." Without cold water storage targets included in the Bins it is unclear which bins will have sufficient cold water storage to provide for pulse flows or temperature management. Further it is unclear if the SRG "Sacramento River Group" refers to the Sacramento River Temperature Task Group since it consists of the same members as the Sacramento River Temperature Task Group.	
67-12	Section 3.4.1.8 refers to "A Resolution Regarding Salmon Recovery Projects in the Sacramento River Watershed Actions Related to Shasta Reservoir Annual Operations and Engagement in the Ongoing Collaborative Sacramento River Science Partnership Effort" (p. 3-46). However specific details that articulate those commitments do not appear to be available and it is unclear if the referenced resolution is the Proposed Resolution from 2019 or if there is a newer version of the resolution. The specific commitment included in the resolution should be identified including any offramps or caveats that may affect the realization of the expected benefits.	Further description of this component is provided in Appendix E, Draft Alternatives. Under Alternative 2, the June 12, 2019 Resolution is referenced.
67-13	Voluntary Agreements (VAs) Section E.5.7.3 describes how Reclamation and DWR have different operational plans if the VAs are not incorporated into the Bay-Delta Plan within two years. Reclamation would stop providing additional outflow but DWR would continue to provide additional outflow. It is unclear how additional outflow from DWR after the two-year early implementation period would be protected from CVP diversion or more generally how Reclamation and DWR would coordinate operations with differing proposed actions. It is also unclear why Reclamation would not operate consistent with DWR to continue providing additional outflow since scientific evidence indicates that additional outflow is necessary to protect fish and wildlife beneficial uses including ESA-listed species such as Chinook salmon Delta smelt and longfin smelt (SWRCB 2017 [Footnote 1:	Refer to Standard Response 10, Voluntary Agreements, regarding concerns related to the voluntary agreements.

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	State Water Resources Control Board (SWRCB). 2017. Scientific Basis Report in Support of New and Modified Requirements for Inflows from the Sacramento River and its Tributaries and Eastside Tributaries to the Delta Delta Outflows Cold Water Habitat and Interior Delta Flows. Available: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/2022/201710- bdphaseII-sciencereport.pdf.]). The State Water Board has not yet made a decision on incorporation of the VAs into the Bay-Delta Plan and the Projects should be prepared for scenarios including the Bay-Delta Plan requirements absent the VAs as described in the State Water Board's 2023 Draft Staff Report (SWRCB 2023a [Footnote 2: State Water Resources Control Board (SWRCB). 2023a. Draft Staff Report/Substitute Environmental Document in Support of Potential Updates to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary for the Sacramento River and Its Tributaries Delta Eastside Tributaries and Delta. Available: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/staff_report.html.]). It appears appropriate for Reclamation to operate to similar rules as the DWR proposed operating rules in their CESA operations if the VAs are not approved or are discontinued. Section 3.4.4.7 implies that Reclamation and DWR will bypass additional flows made available by VA parties equivalent to the values in the VA Memorandum of Understanding (MOU). However the August 2024 Common Responses document released by the VA parties [Footnote 3: California Department of Water Resources et al. 2024. Healthy Rivers and Landscapes Program for Implementation of Proposed Updates to the Bay Delta-Water Quality Control Plan Common Responses. Available: https://resources.ca.gov/-/media/CNRA-Website/Files/Initiatives/Support-Healthy-Rivers-and-	

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	Landscape/HRL-Common-Responses.pdf.] states that the Projects would not be backstopping VA flows and VA documents produced since the MOU was approved may modify the volumes expected under the VAs. These issues should be clarified in the EIS. There are many modeling assumptions for VA tributaries described in Section F.1-1.6.5 that are unclear and some that appear to differ from what is in the MOU and described in other public VA documents. On the Sacramento River it is unclear why 95 TAF was assumed instead of 100 TAF proposed in the MOU and it is unclear whether these flows are protected through to Delta outflow or if they can be exported. The descriptions of the modeling assumptions for the VA flows on the Yuba and Mokelumne Rivers are insufficient to evaluate whether they accurately represent the proposal. The VA proposal on the American River is for water to be provided in 3 or 6 years out of 8 years of the VA. However it appears that the CalSim 3 modeling assumed that VA assets would be available in all above normal dry and critical years from the American River. Additionally some of the sources of VA water on the American River are assumed to come from sources that have not been discussed in previous VA documents such as Caples Reservoir. The CalSim 3 modeling description should be revised to clearly explain the modeling assumptions and their connection to the VA MOU and VA flow accounting documents. The CalSim 3 modeling for Delta export reductions as part of the VA proposal does not appear to succeed in attempts to reduce exports primarily in April and May or meet the volumes proposed in the VA MOU. Part 1 of Appendix F describes the restrictions on when Delta export reductions are assumed for the Delta VA; for example "[e]xport cuts restricted to volume in CVP or SWP San Luis above dead pool" (p. F.1-1-41). Some of these assumptions in the modeling have not been identified in the VA proposal submitted to the Board. These assumed restrictions or "off	

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	ramps" result in lower Delta outflow than presented in the VA MOU and presented in Tables F.1-16 and F.1-17 (shown below) and push most of the increases in outflow to March instead of April and May. The CalSim 3 resulting increases in Delta outflow are about 70 TAF (39%) less in dry years than proposed under the VA and about 45 TAF less (23%) in above normal years. Interestingly there is an increase in Delta outflow in wet years of 73 TAF which is higher than proposed in the VA MOU. No explanation for this wet year increase was provided in the Draft EIS and it is not clear that this is an accurate result. These issues should be clarified.	
67-14	[See original comment for table of VA flow commitments]	Refer to Standard Response 10, Voluntary Agreements, regarding concerns related to the voluntary agreements. Responses to specific comments provided in the table are provided herein.
67-15	Table E-16 does not appear to represent the VA flow commitments as identified in VA documents including flow accounting procedures. Table E-16 contains VA flow commitments that are not attributable to any VA MOU signatories such as the 2 TAF in critical and dry years within the "SRS Contractor Fallowing" row identified by footnote c as contributions from Mill/Cow Creek. In addition the Friant flow commitments in the "San Joaquin River Flows above Tributary VAs" row appears to overestimate the additive flows that would be provided by Friant. Although the VA MOU identifies that up to 50 TAF will be provided by Friant recent draft flow accounting documents identify that the additive outflow would likely be substantially lower down to zero frequently. These issues should be clarified in the EIS. It is unclear why operations on the American River would be the same under Alternative 2 as under the NAA. The VAs include flow commitments on the American River that require participation by Reclamation in operation of Folsom and Nimbus Dams. This issue should be clarified in the	Refer to Standard Response 10, Voluntary Agreements, regarding concerns related to the voluntary agreements.

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	EIS. Section E.5.1.5 describes how the VA flow assets may be used to fulfill the 150 TAF Sacramento River pulse flow. As stated in the VA MOU all VA flow assets should be additive to flows resulting from the 2019 BiOps which also included the 150 TAF Sacramento River pulse flows. Thus using VA flows to fulfill this pulse flow requirement appears inconsistent with the intent of the VAs.	
67-16	Alternative 3 Modified Natural Hydrograph It is appreciated that the Draft EIS attempts to evaluate the implementation of the 2018 Bay-Delta Plan with Alternative 3; however the analyses in the Draft EIS do not accurately represent the anticipated benefits of the new and modified water quality objectives and Program of Implementation of the Bay-Delta Plan. For example the Draft EIS analyses do not include the adaptive implementation of the Lower San Joaquin River flow objectives including but not limited to adjusting the flow requirements within the 30 to 50 percent unimpaired flow range flow shifting and block of water approaches. The adaptive methods allow for the flow objectives to be implemented in a coordinated and adaptive manner to optimize benefits for biological and fisheries needs while considering other uses of water (e.g. municipal and agricultural). Therefore contrary to statements in the Draft EIS the analyses for Alternative 3 are not consistent with the 2018 Bay-Delta Plan flow requirements and as a result the potential effects of the 2018 Bay-Delta Plan are not accurately described in the EIS or consistent with the State Water Board's analyses (SWRCB 2018 [Footnote 4: State Water Resources Control Board (SWRCB). 2018. Substitute Environmental Document in Support of Potential Changes to the Water Quality Control Plan for the San Francisco	The Draft EIS Chapter 3, Alternatives, Section 3.5.6.1 addresses minimum instream flows on the Stanislaus River. It states that Alternative 3 requires reservoir releases to meet 40% of unimpaired inflow on a 7-day running average to the confluence with the San Joaquin in February through June. Furthermore, that same section reiterates consistency with the 2018 Bay-Delta Water Quality Control Plan in the summer and fall.

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	Bay/Sacramento-San Joaquin Delta Estuary: San Joaquin River Flows and Southern Delta Water Quality. July. Available: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/2018_sed/.]). These issues should be clarified in the EIS.	
67-17	Additional CVP and SWP Projects The analysis of Sites Reservoir (Sites) and the Delta Conveyance Project (DCP) in the Draft EIS is very cursory and does not clearly evaluate and disclose the combined effects of these projects with the LTO of the CVP and SWP. The Draft EIS does not include any quantitative analyses of the combined effects of the projects. The Draft EIS identifies that it was not possible to model the additive effects of the projects in time but also does not make any attempt to summarize and combine the quantitative analyses that were performed for each project. Given that these projects interact with one another it is necessary to quantitatively evaluate those interactions to inform and support the impact assessments and an understanding of the scale of effects on important parameters like Delta outflows. Without a quantitative assessment the qualitative summaries do not appear to adequately evaluate and disclose these interactive effects in order to inform the impact assessments. The EIS should be updated to include quantitative assessments of these projects including quantitative assessments of the effects on inflows Delta outflows water quality fish and wildlife and other affected resource areas including effects on total additive Delta outflows expected from VAs that are part of the proposed project. The environmental analyses for Sites and DCP show that these two projects could cumulatively reduce Delta outflow by up to 750 TAF annually (Authority and Reclamation 2023 [Footnote 5: Sites Project Authority and U.S. Bureau of Reclamation (Authority and Reclamation). 2023. Sites Reservoir	The EIS evaluates potential cumulative impacts in compliance with NEPA. Please refer to Chapters 4-22, which address cumulative impacts for each environmental resource evaluated, as well as Appendix Y, Cumulative Impacts Technical Appendix, regarding the consideration of Sites Reservoir and the Delta Conveyance Project in the cumulative analysis. Reclamation added clarifying text to Appendix O.108 regarding potential cumulative impacts of Sites Reservoir and Delta Conveyance to aquatic resources. The EIS evaluates potential cumulative impacts in compliance with NEPA. Please refer to Chapters 4-22, which address cumulative impacts for each environmental resource evaluated, as well as Appendix Y, Cumulative Impacts Technical Appendix, regarding the consideration of Sites Reservoir and the Delta Conveyance Project in the cumulative analysis. Reclamation added clarifying text to Appendix O.10 regarding potential cumulative impacts of Sites Reservoir and Delta Conveyance to aquatic resources. Reclamation believes it has met its requirement for a programmatic inclusion of DCP and Sites under Alternative 2. CEQ's 2014 Guidance on Effective Use of Programmatic NEPA Reviews states that, "A programmatic NEPA review should contain sufficient discussion of the relevant issues and opposing

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	Project Final Environmental Impact Report/Environmental Impact Statement. November. See Appendix 5B3 Delta Operations calculated from Table 5B3-5-4a and Table 5B3-5-4c.]; DWR 2023 [Footnote 6: California Department of Water Resources (DWR). 2023. Delta Conveyance Project Final Environmental Impact Report. December. See Chapter 5 Surface Water Appendix 05A Section B Attachment 3 calculated from Table 5A-B3.3.5.1-B and Table 5A-B3.3.5.4-B.]; SWRCB 2023a). This net effect should be described and evaluated in the EIS. Appendix Z states that population-level analyses suggest that there is the potential for flow-related effects of DCP operations on longfin smelt abundance (mean decreases of 4 to 10 percent depending on water year type) and then states that the habitat restoration for longfin smelt will mitigate the expected loss in abundance from decreased Delta outflow (p. Z-38). The analysis does not justify this conclusion and should. The cumulative effects section of Appendix O "Fish and Aquatic Resources Technical Appendix" does not include the DCP in the list of reasonably foreseeable projects that could result in cumulative impacts to fish resources (p. O-1672). However the DCP is identified in Appendix Y as a reasonably foreseeable project and the Final EIR for the DCP estimates impacts to aquatic resources. The DCP should be included in cumulative impacts analyses of projects with expected effects to fish and aquatics resources.	viewpoints to enable the decisionmaker to take a "hard look" at the environmental effects and make a reasoned choice among alternatives. There should be enough detail to enable those who did not have a part in its compilation to understand and meaningfully consider the factors involved" (Council on Environmental Quality 2014:32). The programmatic analysis in the DEIS provides decision makers 68 ____ pages of evaluation for DCP and 95 pages of evaluation for Sites. Subsequent analysis prior to implementation is anticipated to be quantitative and within the parameters analyzed at a programmatic level. Council on Environmental Quality. 2014. Effective Use of Programmatic NEPA Reviews. December 18. Washington, DC. Available: https://ceq.doe.gov/docs/ceq-regulations-and-guidance/Effective_Use_of_Programmatic_NEPA_Reviews_Final_Dec2014_searchable.pdf.
67-18	Monitoring and Reporting The Draft EIS identifies changes to monitoring provisions including those that overlap with monitoring that fulfills State Water Board requirements that would require concurrence by the State Water Board. To ensure timely review and coordination the State Water Board should be included in monitoring governance and any discussions of monitoring changes.	Please refer to Appendix E, Draft Alternatives, for discussion of the Delta Monitoring Workgroup, which will include technical representatives from federal and state agencies, including representatives from the SWRCB, as well as stakeholders who can provide information to DWR and Reclamation on species abundance, species distribution, life stage transitions, and relevant physical parameters.
67-19	Project Impact Assessments	Individual subject-matter experts did not use standardized

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	It is difficult to clearly evaluate the major conclusions of the Draft EIS impact analyses on many resources areas and impact parameters. In particular the Draft EIS uses ambiguous and often un-defined terms in describing and comparing the project impacts under different alternatives. This is prominent in the description of impacts on fish and aquatic resources in Chapter 12. For example the Draft EIS uses "minimal" "negligible" "little" "minor" "adverse" "beneficial" "increased" and "decreased" to describe the project impacts on different species at different locations and life stages sometimes in a single sentence; however the levels of difference among these descriptive terms have not been defined in the Draft EIS. The EIS should include statistical thresholds for these descriptive terms or present them with numerical results for all alternatives and the NAA. Additionally there are many instances that a mixture of contrasting descriptive words are used to describe the impact of an alternative on a single parameter. For example there are many instances that state an alternative would have an "adverse and beneficial" "adverse or beneficial" or "adverse to beneficial" impact. A clear and complete description of impacts should be provided.	descriptors for impacts, and there were no set descriptors established that overlapped analysis throughout the document. Due to the extensive and diverse nature of the information, it was not appropriate to set universal descriptors. For example, a 1%-5% increase in flows may be categorized as minimal while a 4% increase in survival (within that 1%-5% range) may not be minimal, particularly in a dry or critically dry water year type. A 5% increase in flows in the mainstem Sacramento River will not be categorized the same as a 5% increase in flows in Clear Creek. Subject matter experts integrated the information to provide the analysis in the EIS, as it was not deemed appropriate to use set descriptors and these determinations were left to expert judgment. Numerical results are provided in the line of evidence Attachments and in Appendix O, Fish and Aquatic Resources Technical Appendix.
67-20	Water Quality The EIS should list the water quality objectives from Tables 1-3 of the 2018 Bay-Delta Plan in the tables of Appendix G and attachments to Appendix G for each of the relevant months. This would help facilitate comparison of the simulated water quality conditions with the water quality objectives in the Bay-Delta Plan. In addition the EIS should evaluate whether the 150 mg/L chloride objective would be met at Contra Costa Pumping Plant #1 for the number of calendar days specified for each water year type in the 2018 Bay-Delta Plan. It is not possible to determine this based on the monthly summaries of simulated values that	Water quality objectives in Table 1 of the Bay-Delta Plan are provided in Attachment G.2, Chloride Modeling Results, Section G.2.3, Applicable Water Quality Objectives. Water quality objectives in Tables 2 and 3 of the Bay-Delta Plan are provided in Attachment G.1, Electrical Conductivity Modeling Results, Section G.1.2, Applicable Water Quality Objectives. The EC and chloride objectives for most Bay-Delta Plan compliance locations vary by water year type, therefore, it is not possible to plot a single objective by month. For locations that have a single value as an objective (e.g., chloride objective of 250 mg/L), the effect of each alternative relative to the objective can be readily assessed by

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	are presented in Appendix G and Attachment G.2. Section 4.2.3.5 concludes that "Alternatives 1 2 and 4 would not have substantial increased risk of CHABs [cyanobacterial harmful algal blooms] in the Delta Suisun Marsh Suisun Bay and San Francisco Bay relative to the No Action Alternative (p. 4-17)." It is unclear how this conclusion was reached because the Draft EIS does not include quantitative analyses of the effects of the alternatives on the drivers of CHABs identified in Appendix G of the Draft EIS (p. G-188). The EIS should include quantitative analyses of the effects of the operational changes and changes in hydrology on the drivers of CHABs including those identified in Kudela et al. (2023). [Footnote 7: Kudela R. Howard M. Monismith S. and Paerl H. 2023. Status Trends and Drivers of Harmful Algal Blooms Along the Freshwater-to-Marine Gradient in the San Francisco BayDelta System. SFEWS. Available: https://doi.org/10.15447/sfews.2023v20iss4art6.]	finding that value on the y-axis in the plots. Regardless, as noted in the assessments within Appendix G and EIS Chapter 4, Water Quality, Section 4.2.3.1, Electrical Conductivity, and Section 4.2.3.2, Chloride, the CVP and SWP would continue to be operated in real-time to meet the Bay-Delta Plan objectives, including the 150 mg/L chloride objective for the Contra Costa Pumping Plant #1. As stated in Appendix G, effects of the alternatives on CHABs were determined by evaluating the direction and relative magnitude to which the five environmental conditions that most affect CHABs would be affected by relative to the No Action Alternative. The environmental conditions that most affect CHABs are (1) water temperatures, (2) residence times, (3) channel velocities and associated turbulence and mixing, (4) nutrient levels, and (5) water column irradiance and thus light penetration through the water column, as affected by turbidity. The potential for the alternatives to affect the five factors that drive CHABs was determined using CalSim 3 modeling output. Sacramento River and San Joaquin River flows and Delta inflow and outflow modeling output from CalSim 3 for the No Action Alternative and the alternatives were compared to identify effects. Relatively small magnitude changes in these conditions would not be expected to cause substantial, if any, increases in the frequency or magnitude of CHABs in the Delta. It is clear from past research that water temperature and residence time are important variables affecting CHABs in the Delta, annually. As such, we see worse blooms in drought years when water temperatures and residence times are substantially higher compared to non-drought years. However, the magnitude of changes seen in CalSim 3 output between Alternatives 1, 2, and 4 and the No Action Alternative for Sacramento River and San Joaquin River flows, Delta inflow, and Delta outflow would not be expected to cause substantial increases in Delta water temperatures or residence times. Moreover, the alternatives would

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		not introduce new sources of nutrients, would not substantially reduce Delta channel turbulence and mixing, and would not substantially reduce in-Delta turbidity levels. These findings served as the basis for the CHAB impact determination in the EIS.
67-21	Fish and Aquatic Resources All versions of Alternative 2 appear to have negligible incremental benefits or negative impacts on many native fish species. The EIS should further describe the basis for selecting Alternative 2B as the preferred alternative and how the alternative could avoid jeopardy and improve conditions for native fish species given the results. It is very difficult to understand quantitative impacts from Chapter 12 of the Draft EIS since the numbers are provided separately for each alternative instead of in comparison to the NAA. For example in Section 12.2.7.5 the Draft EIS provides no expected salvage numbers for the NAA and then separately provides expected salvage numbers for Alternatives 1 through 4. The EIS should provide numbers for all Alternatives including the NAA and should compare the results of each Alternative with the NAA.	Please refer to Standard Response 7, Aquatic Resources, for a description of the structure of the Draft EIS. The comment regarding an alternative organization of the analysis will be taken under advisement for future Reclamation efforts. Determining how each of the alternatives avoid jeopardy is under USFWS and NMFS purview. Please refer to Standard Response 2, Related Regulatory Processes. Refer to Chapter 3; Appendix E, Draft Alternatives; and Standard Response 4, Alternatives Formulation, for a description of alternatives and selection of the preferred alternatives.
67-22	Figure 12-4 shows that a Delta smelt population growth rate greater than one is only expected for Alternative 3. A population growth rate less than one will result in a population decline while a population growth rate greater than one will result in population growth. The EIS should describe how Alternative 2 could be expected to avoid jeopardy and recover Delta smelt if modeling shows it resulting in a population decline.	Please refer to Standard Response 7, Aquatic Resources, Section AD.3.7.2, Response to General Comments Regarding Adverse Impacts on Aquatic Resources, in reference to population decline under Alternative 2. A jeopardy analysis and species recovery for Delta smelt is within the purview of USFWS. Please refer to Standard Response 2, Related Regulatory Processes.
67-23	The modeling in Appendix J.1 concludes that longfin smelt models with December through May outflow as a predictor had better predictive accuracy than models with March through May outflow as a predictor. This conclusion aligns with the analyses in the State Water Board's 2017 Scientific Basis Report in support	Please refer to Standard Response 4, Alternatives Formulation, for a discussion of the purpose and need of this multipurpose project. Please also refer to Standard Response 4 for a description of the rigorous approach Reclamation undertook for the formulation of

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	of possible updates to the Bay-Delta Plan which used a January through June time period for longfin smelt flow-abundance relationships. The EIS should further describe the basis for the proposed project and its purpose to avoid jeopardy and improve conditions for native fish species given this insight in the time period for outflow benefits to longfin smelt abundance.	alternatives. Alternatives description and rationale are found in Chapter 3, Alternatives, and Appendix E, Draft Alternatives.
67-24	The salmon habitat analysis in Attachment O.3 found that the All VA scenario will result in decreases to salmonid habitat for almost every Chinook salmon run and life stage. The salmon habitat analyses in Attachment O.2 found that spawning habitat in the Upper Sacramento River was not a limiting factor for winter- and spring-run Chinook salmon. In addition the Central Valley Project Improvement Act (CVPIA) winter-run life cycle model found that spawner abundance would decrease under Alternative 2 (p. 0-23) and Alternative 2 is expected to have a negative impact on the production of juvenile winter-run (p. O-717). The only consistent increase in habitat is for winter-run spawning which the analysis in Attachment O.2 found was not limiting and for late fall-run juvenile rearing. It is unclear if these results include the VA habitat restoration commitments. This should be clarified in the EIS. In addition the EIS should explain how Alternative 2 will avoid jeopardy for Chinook salmon runs and improve conditions for Chinook salmon given these habitat results.	For winter-run Chinook salmon, the spawning habitat analysis under the Alt2woTUCPAllVA phase suggests increases in habitat area under several water year types, including above normal, below normal, and dry. Throughout the full simulation period, there are expected increases overall. (See ALL row in Table O.3-5 in Attachment O.3, Sacramento River Weighted Usable Area Analysis). The analysis does suggest minor decreases in rearing habitat area for Chinook salmon, but they are not substantial decreases. The percent differences are less than 1% for winter-run Chinook salmon rearing, less than 3% for spring-run Chinook salmon rearing, and less than 2% for fall-run Chinook salmon rearing under Alt2woTUCPAllVA. Alternatives are not rendered infeasible due to their potential to result in environmental impacts; NEPA is a procedural statute that requires only that an agency take a "hard look" at the consequences of its actions. Appendix E of the Draft EIS presents the full spectrum of individual components considered during the formulation of the alternatives evaluated in the Draft EIS. In Appendix D of the Draft EIS, there are several Avoidance and Minimization Measures and Mitigation Measures under Alternative 2 targeted for protection of salmonids. Regarding the assertion of improving conditions for Chinook

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		salmon to avoid jeopardy, those decisions are regulated through the ESA process. Please see Standard Response 2, Related Regulatory Processes.
67-25	The analyses for the Stanislaus River found various adverse and beneficial effects on salmonid habitat area using weighted usable area (WUA) and temperature. As expected predicted habitat area increased with lower flow regimes because the in-channel Stanislaus River WUA curves maximize at lower flow rates (e.g. less than 500 cfs). However the premise that salmonid populations respond positively to habitat improvements associated with lower flows on the Stanislaus River is contrary to the current scientific evidence that shows positive relationships between flow and fall-run Chinook salmon populations (ISAP 2019 [Footnote 8: Independent Science Advisory Panel (ISAP). 2019. Final Report. Developing Goals for the Bay-Delta Plan: Concepts and Ideas from and Independent Science Advisory Panel. April.]; Sturrock 2020 [Footnote 9: Sturrock A. M. S. M. Carlson J. D. Wikert T. Heyne S. Nussle J. E. Merz H. J. W. Sturrock and R.C. Johnson. 2020. Unnatural selection of salmon life histories in a modified riverscape. Global Change Biology 26:12351247. Available: http://doi.org/10.1111/gcb.14896.]; SWRCB 2023b [Footnote 10: State Water Resources Control Board (SWRCB). 2023b. Final Initial Biological Goals For The Lower San Joaquin River. September. Available: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/2024/20240206-final- initial-biological-goals-reso.pdf.]). In fact ISAP (2019) found a mean negative but zero effect of WUA metrics on juvenile fall-run abundance using stock-recruitment analyses. This suggests that WUA may not be an appropriate metric for assessing habitat because flow has a greater positive influence on salmon populations on the Stanislaus River likely due to other controlling factors associated	Weighted Usable Area metrics measure available physical preferred habitat for steelhead and Chinook salmon. The curves that were developed are based on rigorous field data collection. ISAP (2019) assessed effects of flow on abundance of individuals, not habitat. The studies cited in the comment, such as ISAP 2019, are focused on the juvenile life stages of salmonids in the Stanislaus River. The juvenile WUA curves provided in Attachment N.2 Stanislaus River Habitat Availability Analysis (see Figures N.2-4 through N.2-7) show a large range of relationships of habitat to flow, including a number with little or no response to flow. Also, note that in addition to using WUA analyses, the effects of flow on habitat of juvenile life stages were analyzed in Attachment N.2 using the Area of Suitable Habitat (ASH) methodology, in which suitability of habitat consistently increased with flow (see Table N.2-2). Independent Science Advisory Panel (ISAP). 2019. Final Report. Developing Biological Goals for the Bay-Delta Plan: Concepts and Ideas from an Independent Science Advisory Panel. April.

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	with flow such as temperature dissolved oxygen or floodplain activation.	
67-26	Weighted usable area analyses can have some value in evaluating physical habitat; however there are significant limitations to the analyses if other habitat and ecological factors are not also considered. The State Water Board's 2018 Substitute Environmental Document (SWRCB 2018) and Master Response 3.1 [Footnote 11: Available: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/2018_sed/docs/mr3.1.pdf.] provides a detailed evaluation of the use of WUA for the Lower San Joaquin River tributaries. The Draft EIS analyses using WUA should include covariate evaluations with temperature or other pertinent ecological metrics because increases in modeled usable habitat at lower flows may in reality become unusable due to elevated temperatures.	Refer to Standard Response 5, Adequacy of Analysis and Mitigation. The Weighted Usable Area analyses (Attachments M.1, N.2, O.1, and O.3) outline the limitations to the analysis in the section titled Assumptions/Uncertainty.
67-27	Lower San Joaquin River tributaries including the Stanislaus River salmonid populations have been found to be limited by elevated temperatures (ISAP 2019; SWRCB 2018; SWRCB 2023b). The Draft EIS found variable but overall negative impacts to steelhead and fall-run Chinook salmon due to temperature for Alternative 2 and variable but overall positive impacts to steelhead and fall-run Chinook salmon due to temperature for Alternative 3. The implementation of the 2018 Bay-Delta Plan using adaptive methods has been shown to result in even greater beneficial temperature effects than determined in Alternative 3 (SWRCB 2018). The 2018 Bay-Delta Plan amendments were developed to improve conditions for the riverine ecology holistically benefiting all species that evolved from a more natural hydrological regime versus limited consideration of listed species in the context of jeopardy	The purpose of the Draft EIS was to evaluate and disclose environmental impacts of each project alternative. The 2018 Bay-Delta Plan is a separate project, and, therefore, it was not evaluated for the Draft EIS. For more information about the Stepped Release Plan, please see Chapter 3, Alternatives, Section 3.2.5, Stanislaus River.

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	constrained by water supply considerations. In addition it is unclear how temperature management would mitigate Alternative 2 temperature impacts through the Stepped Release Plan because the analyses concluded that the Stepped Release Plan would result in an overall increase in temperature in the Stanislaus River.	
67-28	Winter-run Chinook Salmon (Through-Delta Survival) The through-Delta survival rates of winter-run Chinook salmon under Alternatives 1 2 and 4 would be similar to the NAA and the rates would be considerably higher than the NAA (greater than 5 percent) only under Alternative 3. As documented in the State Water Board's 2017 Scientific Basis Report average monthly flows greater than 20000 cfs in the Sacramento River at Freeport during February through April have been shown to reduce flow reversals and minimize juvenile winter-run Chinook salmon entrainment at Georgiana Slough (SWRCB 2017). Average monthly flows greater than 20000 cfs would be met only in February and March of dry water years and in no months during critical water years under all "phases" of Alternative 2. Perry et al. (2018) [Footnote 12: Perry R.W. A.C. Rope J.G. Romine P.L. Brandes J.R. Burau A.R. Blake A.J. Ammann and C.J. Michel. 2018. Flow-mediated effects on travel time routing and survival of juvenile Chinook salmon in a spatially complex tidally forced river delta. Can. J. Fish. Aquat. Sci. 75(1). Available: https://doi.org/10.1139/cjfas-2017-0310.] found that flows on the Sacramento River at Freeport exceeding 35000 cfs would facilitate the passage of juvenile winter-run Chinook salmon and enhance the through-Delta survival rates. Based on the modeling data presented in the Draft EIS only the month of February would satisfy the flow magnitude for the long-term average flows and there would not be a single month satisfying the flow magnitude during below normal dry and critical water years	CalSim 3 results for monthly average Freeport flows are in Draft EIS Appendix F, Modeling, Attachment F.2.2, Tables F.2.2-14-2b through F.2.2-14-2d. Monthly flows greater than 20,000 cfs are met during February through April in wet and above normal years, January and February in below normal years, and just January in dry years. Freeport flows are higher in Alternative 2 than the NAA in February through April except in wet and above normal Aprils, above normal and dry Marchs, and above normal Februarys. The analyses for winter-run Chinook salmon through-Delta survival in the EIS are comparative; they report effects of each alternative relative to the No Action Alternative. This analysis is adequate under NEPA. Support for Alternative 3 is noted.

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	under the Alternative 2. These issues should be addressed in the EIS.	
67-29	Adult Delta Smelt Entrainment Protection Action (Turbidity Bridge) The Draft EIS includes the Delta Smelt Adult Entrainment Protection Action (Turbidity Bridge) to avoid the formation of a turbidity bridge from the San Joaquin River Shipping Channel to the South Delta water export and fish collection facilities. Alternative 2 and the preferred alternative (Alternative 2B) in the Draft EIS propose that when daily average turbidity exceeds 12 Formazin Nephelometric Units (FNU) at "each of three" turbidity sensors in the OMR corridor (sensor locations are not specified) the Projects would limit the CVP and SWP combined exports to achieve a five-day average OMR index that is no more negative than -3500 cfs until the average daily turbidity of at least "one of the three" turbidity locations is less than 12 FNU for two consecutive days (p. 3- 49). The 2019 BiOps and 2020 ITP included a minimization measure with the same purpose that relied on turbidity values from one turbidity sensor to initiate the action located at Old River at Bacon Island (OBI). The OMR flow restriction for this action was -2000 cfs when turbidity exceeded 12 FNU. This is consistent with the Turbidity Bridge Avoidance (South Delta Turbidity) criteria included in the NAA of the Draft EIS (p. 3-28). The Draft EIS does not include the rationale for using three turbidity sensor locations along the Old River corridor under Alternative 2 in comparison to the single sensor location that was implemented under the 2019 BiOps and 2020 ITP. The EIS should include a contingent monitoring plan and describe how water operations would be modified if turbidity sensors at one or more locations malfunction or produce erroneous readings. In addition the EIS should clearly describe the rationale for changing the OMR flow criteria from no more	Please refer to Standard Response 4, Alternatives Formulation, for discussion on why the proposed action was selected. The multiagency consensus alternative used 3 turbidity sensors to reduce risks associated with the example provided in this comment. Monitoring teams track monitoring survey and equipment status and WOMT is able to address contingencies if sensors malfunction or provide erroneous readings. 53.8 degrees F is the water temperature when Delta smelt spawning is anticipated to occur and suggests that actions taken to reduce operational effects on Delta smelt should shift from adults to larvae.

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	negative than -2000 cfs in the 2019 BiOps and 2020 ITP (as described in the NAA) to -3500 cfs in the preferred alternative (Alternative 2B) when the Turbidity Bridge is observed with the turbidity sensor(s). Further the EIS should evaluate impacts to adult Delta smelt based on these changes from -2000 cfs in the Baseline Conditions to -3500 cfs in the proposed project. The Draft EIS provides that the Adult Delta Smelt Entrainment Protection action ends when the three-day continuous average water temperature at Jersey Point or Rio Vista reaches 53.8 degrees F (12 degrees C). The EIS should provide the rationale for this temperature- based offramp based on the Delta smelt life history or habitat requirements.	
67-30	Conclusion State Water Board staff appreciates the opportunity to provide comments on the Draft EIS. The State Water Board may have further comments upon further review of the EIS and its various appendices and release of the BiOps.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.

Table 4-68. Letter No. 68

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68-1	This letter is submitted as the comments of the California Sportfishing Protection Alliance California Water Impact Network Friends of the River Golden State Salmon Association Institute for Fisheries Resources Pacific Coast Federation of Fishermen's Associations Restore the Delta San Francisco Baykeeper Save California Salmon and Water Climate Trust regarding the 2024 Draft Environmental Impact Statement ("DEIS") regarding the reinitiation of consultation on long-term operations of the Central Valley Project ("CVP") and State Water Project ("SWP"). These comments address both the Bureau of Reclamation's ("BOR" or "Reclamation") compliance with the National Environmental Policy Act ("NEPA") and compliance with the Endangered Species Act ("ESA"). These comments are being transmitted to the National Marine Fisheries Service ("NMFS") and U.S. Fish and Wildlife Service ("USFWS") and should be included in all three agencies' administrative records.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
68-2	In summary: -The DEIS Purpose and Need statement must be modified to: -make clear that meeting water supply contract commitments is a secondary project purpose after compliance with the ESA -emphasize the need to strengthen ESA protections and -ensure that alternatives that reduce water diversions or deliveries are not precluded by definition.	Refer to Standard Response 4, Alternatives Formulation, regarding the purpose and need.
68-3	-Reclamation's use of the 2020 Record of Decision as the environmental baseline is misleading and inappropriate.	Please refer to Standard Response 3, Baseline and No Action, regarding the use of the No Action Alternative for the purposes of NEPA.
68-4	- Apart from Alternative 3 all the DEIS alternatives including the Proposed Action are as bad as or worse than the No Action Alternative ("NAA") and would jeopardize the continued	Modeling results are not representations of the actual conditions and should be used only for a comparative analysis of alternatives. A special-status species population may be declining under the No

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	existence of listed species in violation of the Endangered Species Act ("ESA"). This is according to Reclamation's own analysis in the DEIS. [Footnote 1: Given the short time window to review this extensive document and engage in the larger reconsultation process we have attached and incorporate by reference more detailed comments previously submitted to the Bureau on the Proposed Action. See Attachments 1 and 2.]	Action Alternative. Please see Standard Response 7, Aquatic Resources, regarding adverse impacts on aquatic resources. The extent to which a project may "take" a threatened or endangered species or is or is not likely to jeopardize the continued existence of a species is determined by NMFS and USFWS. Please refer to Standard Response 2, Related Regulatory Processes.
68-5	-Reclamation's own analysis in the DEIS does not appear to have informed the agency's findings or selection of the preferred alternative. Indeed the quantitative results of the analyses are not reflected in the main body of the DEIS. Instead the results of the analyses which clearly show that all the alternatives except Alternative 3 will result in continued decline and extinction of listed species need to be disclosed in a clear and accessible form.	Reclamation has provided the information necessary to meet NEPA requirements. Table O.282 was included in the Draft EIS, which clearly summarizes potential impacts of each alternative on aquatic resources. This table can be found in Appendix O, Fish and Aquatic Resources Technical Appendix. Please refer to Standard Response 7, Aquatics Resources, for a description of the structure of the document.
68-6	-The potential adverse impacts of the Proposed Action and other alternatives (except Alternative 3) are actually likely to be far worse than indicated in the DEIS. There are serious problems with the DEIS's analysis including but not limited to: -a deeply flawed and unreliable analysis of temperature effects on juvenile Chinook Salmon; -a failure to acknowledge or incorporate into its modeling analysis the best available science from recent studies on the effect of river flows on survival of different runs of Chinook Salmon upstream into and through the Delta; -a failure to consider both the current unsustainable levels of entrainment-related mortality of larval and juvenile Longfin Smelt and the increase in mortality for these life stages expected under the Proposed Action; and -a failure to consider the current status of the San Francisco Bay estuary's White Sturgeon population or to properly analyze the	The impact analysis provided in the EIS was based on a wide range of analyses above and beyond what is typically compiled for water-based projects similar to the scope and complexity of the Reinitiation of Consultation on the Coordinated Long-Term Operation. In addition to CalSim 3 modeling, several lines of evidence were used to assess impacts on listed and non-listed fish species. Water temperature–related impacts were assessed for the four runs of Chinook salmon using HEC-5Q modeling and index values based on scientific literature (Attachments L.1, M.1, and N.1). A separate model was used to assess temperature-dependent mortality for egg to fry survival of winter-run Chinook salmon (Attachment L.2). The Interactive Object-oriented Simulation Model incorporates temperature modeling and is composed of six model stages and are arranged sequentially to account for the entire life cycle of winter-run Chinook salmon, from eggs to returning spawners (Attachment F.5). The XT model

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	Proposed Action's effect on this species and the threatened Green Sturgeon DPS.	(Attachment J.4) and the Flow Threshold Model (Attachment J.5) evaluate survival and travel time for spring-run and winter-run Chinook salmon using the passage component ("Migration Model") of the SacPAS Fish Model and studies from Michel et al. (2021). Entrainment of longfin smelt is addressed in the Affected Environment in Appendix O, Section O.1.9.1, and analyzed for the preferred Alternative 2 in Section O.5.13. Although Reclamation is not subject to CESA, the status of white sturgeon as a candidate species under CESA was updated around the publishing of the Draft EIS and has been updated in the Affected Environment in Section O.1.3.2. An updated CDFW outflow year class index analysis was completed in Attachment J.2. This analysis shows mixed predictions of year class strength depending on which phase of Alternative 2 is actionable and water year type. The summary of project impacts for green sturgeon, southern DPS are located in Section O.5.11 for Alternative 2 with the Summary of Impacts in Table O-282. The summary of project impacts on white sturgeon are located in Section O.5.15 for Alternative 2 with the Summary of Impacts in Table O-282. Michel, C. J., J. J. Notch, F. Cordoleani, A. J. Ammann, and E. M. Danner. 2021. Nonlinear Survival of Imperiled Fish Informs Managed Flows in a Highly Modified River. Ecosphere 12 (5):, e03498. doi: https://doi.org/10.1002/ecs2.3498.
68-7	-The Voluntary Agreements are not reasonably certain to occur and therefore the VAs should not be included as a component of the alternatives in the DEIS. In addition the purported magnitude and benefits of VA-associated flows are incorrectly	Refer to Standard Response 10, Voluntary Agreements, regarding the relationship of Alternative 2 to the voluntary agreements and how voluntary agreements are modeled to be implemented.

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	described and even if implemented the VAs would be likely to be short-term in duration. -The DEIS also overlooks the fact that the US Environmental Protection Agency is investigating a Title 6 complaint against the State Water Resources Control Board over its improper consideration of the VAs in the Bay-Delta Water Quality Control Plan update.	
68-8	-The DEIS's treatment of drought management relies in large part on a voluntary largely qualitative Drought Toolkit without current authorization or funding for its implementation. Because this Toolkit is not reasonably certain to occur the DEIS must be revised to identify specific actions that Reclamation will commit to mitigate the highly foreseeable and largely avoidable conditions of drought and avoid the reliance on temporary urgency changes that have characterized drought management in the past fifteen years.	The cyclical nature of California hydrology and the resulting effect on federally listed species warrants special consideration for operation during droughts. Although each drought is unique, contingency planning can facilitate an adequate response. California experiences variable climate, and periods of droughts are a recurring feature. Water stored in CVP and SWP reservoirs and groundwater basins mitigate droughts. Multi-year droughts occur when two or more successive years are dry and reservoirs and groundwater reserves are depleted. During these periods, Reclamation in coordination with DWR would develop a Drought and Dry Year Planning Toolkit that focuses on actions to implement as intervention measures during hydrologic years with drought and dry conditions. The Drought Toolkit would be developed within 18 months of executing a Record of Decision, The Drought Toolkit includes actions that can either mitigate or avoid impacts throughout the Central Valley. As discussed in Chapter 3, Alternatives, the Drought Toolkit is a common component of the LTO of the CVP.
68-9	- Although the DEIS purports to address the long-term operations of both the CVP and the SWP the DEIS's Proposed Action does not match up with the Proposed Project in the California Department of Water Resources 2024 Draft Environmental Impact Report for the SWP. Both documents and their preferred alternatives are deeply flawed and must be revised to comply with state and federal law	This EIS evaluates the alternatives for changes to the long-term operation of the CVP, including CVP reservoirs, such as Shasta Reservoir, and other CVP and SWP facilities that could be affected by operational changes. The State's ITP EIR evaluates a proposed project for changes in SWP Delta, Suisun Marsh, and Suisun Bay facility operations that could be needed because of proposed changes to the CVP long-term operations. Therefore, the EIR

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		scope of analysis is limited geographically to portions of the SWP system downstream of the Feather River/Sacramento River confluence. While coordination between Reclamation, DWR, and other cooperating agencies has occurred in development of the EIS and EIR, the EIS alternatives and scope of analysis are not identical to the State's ITP EIR because Reclamation is disclosing the potential environmental effects of its broader proposed CVP long-term operations changes on the resources that could be affected. Reclamation and DWR also regularly coordinate on CVP and SWP operations, including through the Coordinated Operation Agreement.
68-10	- Alternative 3 is the only alternative that adequately protects endangered species as required by law and should have been identified as the Preferred Alternative. It is also the only alternative that significantly reduces greenhouse gas emissions of the CVP and therefore supports meeting state and federal climate policy targets. The DEIS is also deficient in failing to provide an adequate range of alternatives i.e. one that includes more than one alternative that actually achieves the necessary level of protection for endangered species. In contrast Alternatives 1 and 4 are properly rejected as noncompliant with ESA requirements.	Refer to Standard Response 4, Alternatives Formulation, regarding formulation of a range of reasonable alternatives. Refer to Standard Response 2, Related Regulatory Processes, regarding Section 7 consultation in accordance with the Endangered Species Act (ESA) and the coordinated NEPA and ESA processes (40 C.F.R. Section 1502.24(a)). Support for Alternative 3 is noted.
68-11	- The DEIS improperly assumes that groundwater impacts of implementing Alternative 3 will be large and unmitigated rather than understanding that implementation of and compliance with the Sustainable Groundwater Management Act will prohibit such impacts. The DEIS also overlooks the immense water savings potential of water conservation measures to offset water supply impacts.	The SGMA prescribes that GSAs develop GSPs to bring medium- and high-priority basins into sustainable operation. Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium and high priority basins with overdraft conditions or 2042 for medium and high priority basins without overdraft. Each GSP that is either currently being developed or has been developed is specific to each groundwater

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		basin/subbasin. The C2VSim groundwater model does not include specific actions for each GSP relative to parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decision regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The C2VSim model represents effects to groundwater resources that may be more substantial than when GSP provisions are fully enacted. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives. Each of the alternatives simulated in the EIS are simulated with the same assumptions regarding SGMA. Therefore, the comparison of each alternative to the No Action Alternative is comparable to each other to determine relative changes in groundwater resources. C2VSim is the best available groundwater modeling tool given the geographic scale of the analysis and the complexity of linking to the CalSim 3 model analysis. Please see Standard Response 4, Alternatives Formulation, regarding alternatives development, and range and feasibility of the alternatives evaluated in the EIS. Also refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. Reclamation proposed Mitigation Measure AG-1: Diversify Water

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		Portfolios, which encourages water agencies to diversify their water portfolios. Diversification could include the sustainable conjunctive use of groundwater and surface water, water transfers, water conservation and efficiency upgrades, and increased use of recycled water or water produced through desalination where available. See Appendix D, Mitigation Measures. The mitigation measure relies on entities other than Reclamation to implement the measures. Because Reclamation does not have authority to implement this measure, Reclamation cannot ensure that it will be implemented. If it is implemented, it will reduce impacts on agricultural land.
68-12	The DEIS fails to include an adequate historical analysis of Indian Tribal Assets and cultural resources, and the Proposed Action fails to mitigate impacts to water quality of federally reserved rights or to fishery resources protected by tribally reserved fishing rights, and to take necessary actions to preserve and protect cultural resources.	For all four alternatives analyzed in Chapter 8, Cultural Resources, it was determined that water fluctuation levels would not exceed the No Action Alternative. Therefore, the Draft EIS concludes in Section 8.2.1 that Alternatives 1 through 4 do not have the potential to adversely affect historic properties, if they are present, because no actions would result in alteration, damage, or demolition of historic properties. Because the proposed alternatives would not have an effect on historic properties greater than the No Action Alternative, no mitigation is identified. There may be ITAs located within the vicinity shared by the commenter, which is north of the Delta, but those ITAs are not impacted by the alternatives. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the sufficiency of the analysis and mitigation measures included in the EIS.
68-13	- The DEIS fails to adequately analyze or mitigate for the impacts of the Proposed Action on environmental justice communities in the Delta including increased exposure to bioaccumulating toxins in subsistence fisheries and loss of	The potential for increased public exposure to cyanotoxins under the alternatives relative to the No Action Alternative was addressed in Draft EIS Chapter 21, Public Health and Safety, Section 21.2.3, Potential Changes in the Potential for Public

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	access and increased economic costs associated with the increased occurrence of Harmful Algal Blooms and other water quality impacts. The DEIS also fails to address Justice 40 criteria.	Exposure to Cyanotoxins due to an Increase in CHABs. This section describes how Alternatives 1, 2, and 4 would not increase the potential for public exposure to cyanotoxins in the study area, whereas Alternative 3 could increase the potential for public exposure to cyanotoxins in the Bay-Delta region. The analysis related to cyanotoxins in Chapter 21 tiers from analysis of water quality effects of the alternatives in Draft EIS Chapter 4, Water Quality. Mitigation Measure WQ-1 in Chapter 4 addresses potential increases in constituents of concern, which would include cyanotoxins. Please see Standard Response 5, Adequacy of Analysis and Mitigation, for additional information regarding the adequacy of the analysis and mitigation measures in the EIS. Regarding the Justice 40 criteria, new implementing regulations from the Council on Environmental Quality (CEQ), effective July 1, 2024, aim to facilitate more successful NEPA implementation and a more comprehensive analysis of environmental justice impacts (https://ceq.doe.gov/docs/laws-regulations/NEPA-Implementing-Regulations-Desk-Reference-2024.pdf). This EIS's Notice of Intent was issued on February 28, 2022, prior to the issuance of these new implementing regulations (which were published on May 1, 2024). Therefore, the analysis in this EIS is conducted according to the previous (1997) CEQ implementing regulations (https://www.energy.gov/nepa/articles/environmental-justice-guidance-under-nepa-ceq-1997) and relevant executive orders.
68-14	The DEIS violates NEPA both by including the proposed Sites Reservoir and Delta Conveyance Project at the programmatic level even though these projects are not reasonably certain to occur and by failing to include them in the DEIR's analysis of potential cumulative impacts.	The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Both Sites Reservoir and Delta Conveyance Project were included in the cumulative analysis for Alternative 1, 3, and 4 provided in EIS Appendix Y, Cumulative Impact Technical Appendix. Projects included in the cumulative analysis are considered past, present, and reasonably foreseeable actions.

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		The analyses for the Delta Conveyance Project and Sites Reservoir, contained in Appendix Z and Appendix AA, respectively, provide available information to assess how these projects would operate along with Alternative 2, broadly assessing the impacts of the operations of these projects in the context of the LTO of the CVP and SWP. The programmatic analysis for these two projects provides information, to the extent possible, on how these key projects would be implemented, if approved.
68-15	The DEIS improperly excludes consideration of how impacts to the Trinity River system should be mitigated.	All Trinity River diversions in the EIS are within the range of effects under the 2000 ROD. Modeling assumptions for the Trinity River Operations are consistent across all alternatives; however, different proposed operations result in different modeled outputs. Minor deviations in Trinity flows shown in the EIS are a result of modeling but do not reflect an intention by Reclamation to deviate from the Trinity River Division 2000 ROD. Please refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD.
68-16	These findings are discussed in detail below as well as numerous other concerns we have identified regarding the adequacy of the DEIS. In 2021 the Biden Administration appropriately reinitiated consultation in order to significantly revise and replace the Trump Administration's highly flawed and insufficiently protective 2019 biological opinions ("2019 BOs"). The 2019 BOs were subject to political interference and scientific misconduct and violated federal law. In addition we note that reinitiation of consultation was required as a matter of law because operations of the CVP and SWP have repeatedly exceeded the incidental take limits set in those biological opinions over the past several years. These exceedances include the incidental take limit in the 2019 NMFS BO regarding egg-	Federal law was followed in preparing the 2019 BiOps and EIS 2020 ROD. As discussed in Chapter 1, Introduction, the executive order directed the federal government to re-evaluate 2019/2020 ROD compliance, and Reclamation is following the issuance of the executive order. Reclamation decided to reinitiate under the ESA and to prepare NEPA and ESA compliance documents.

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	to-fry survival of winter-run Chinook salmon. Most recently the CVP and SWP exceeded the incidental take limits in the 2019 NMFS BO for salvage of protected steelhead and winter-run Chinook Salmon. (50 C.F.R. 402.16; see also Defenders et al. Letter to BOR DWR USFWS CDFW and NMFS on ITL exceedance March 2024 Attachment 5).Given the alarming declines in the abundance of spring-run Chinook salmon the complete closure of the salmon fishery in 2023 and 2024 due to low abundance of fall-run Chinook salmon the Service's listing of Longfin Smelt under the Endangered Species Act (ESA) and its finding that existing regulatory mechanisms are inadequate to prevent extinction of this species [Footnote 2: See Endangered and Threatened Wildlife and Plants; Endangered Species Status for the San Francisco Bay-Delta Distinct Population segment of the Longfin Smelt 89 Fed. Reg. 61209 (July 30 2024). Available online: https://www.regulations.gov/ by searching for Docket No. FWSR8ES20220082; see also 50 CFR 17.11(h).] it is clear that significant changes in water project operations are necessary and appropriate to comply with State and Federal law. Unfortunately review of the DEIS shows that those significant revisions have not occurred. As we go into more detail below Reclamation must revise and recirculate the DEIS.	
68-17	I. The DEIS Purpose and Need Statement Must be Revised. We appreciate the fact that Reclamation has not included the unlawful Purpose and Need statement that was used in the prior consultation. Regrettably the Purpose and Need statement still fails to comply with federal law and must be revised. First as we noted in our Notice of Preparation ("NOP") comments we appreciate that Reclamation's proposed Purpose and Need statement does not include the unlawful directive to "maximize water deliveries" that was included in the Trump Administration's unlawful section 7 consultation. The prior	Refer to Standard Response 4, Alternatives Formulation, regarding the purpose and need for this multipurpose project. Reclamation addressed impacts on refuges resulting from changes in operations on both the Sacramento and San Joaquin River. For the Sacramento River, the Draft EIS states, “Potential reductions in water deliveries to CVPIA wildlife refuges in the Sacramento River watershed under the alternatives could also have impacts on the availability of aquatic habitat, however, Reclamation does not control the distribution of water to CVPIA wildlife refuges beyond initial water year allocations. Therefore, the changes or impacts

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	consultation's Purpose and Need was contrary to state and federal law and that project purpose was a primary reason why threatened and endangered fish species are facing potential extinction in recent years as water project operators maximized water deliveries instead of preserving water in storage to meet water supply and environmental obligations if the next year was dry. Under the 1992 Central Valley Project Improvement Act ("CVPIA") protecting fish and wildlife. This program specifically has a goal to double the natural production of anadromous fishes (AFRP 2001) including sturgeon smelt steelhead and all four runs of Central Valley Chinook Salmon which are the backbone of the State's salmon fishery that supports thousands of fishing jobs in California Oregon and parts of Washington. We appreciate that Reclamation specifically references CVPIA in the Purpose and Need statement. (DEIS Chapter 2 p. 2-1). [Footnote 3: However we are still concerned about the DEIS's larger treatment of CVPIA legal obligations. The Proposed Action is still expected to reduce congressionally mandated CVPIA Level 2 water deliveries to wildlife refuges yet there is no analysis for how those reductions will impact listed species on those wetland refuges (e.g. Giant Garter Snake) no indication for how CVPIA Level 4 deliveries will be treated under the Proposed Action and there is no listed mitigation for those impacts or an explanation for how Reclamation still intends to satisfy its legal obligations under CVPIA. We urge Reclamation to consider clarifying these issues in the revised and recirculated DEIS. The legality of the Trump Administration's 2019 Salmon BiOp was also challenged in the U.S. District Court of California Eastern District in two parallel cases: PCFFA et al. vs. Raimondo et al. (No. 1:20-cv-00431) in which several of the signatories to these comments participated and the California Natural Resources Agency et al. vs. Raimondo et al. (No. 1:20-cv-00426) two cases which led directly to the Biden Administration calling for ESA	described for terrestrial resources associated with CVPIA refuges are outside the scope of this alternatives analysis." Similar language was included for San Joaquin River, except that the analysis did not clarify that refuge impacts are beyond the scope of the analysis. The EIS has been revised to include this clarification under the analysis for the San Joaquin River for giant garter snake. Reclamation will coordinate with USFWS to maintain summer deliveries to CVPIA refuges in a manner consistent with refuge contracts and agreed upon operational priorities.

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	Sec. 7 reconsultation to which this DEIS is related.] However the DEIS's Purpose and Need statement still retains the description that one of the "purposes" is operating the CVP and SWP in a manner that "Satisfies Reclamation contractual obligations and agreements." (DEIS Chapter 2 p. 2-1). The CVP and SWP's obligations to fulfill the terms and conditions of water supply contracts are subservient to Reclamation's obligation to ensure that the coordinated operations of the CVP and SWP comply with the ESA. The Purpose and Need statement must be revised to make clear that meeting water supply contracts is a secondary project purpose after compliance with the ESA. [Footnote 4: The legality of the Trump Administration's 2019 Salmon BiOp was also challenged in the U.S. District Court of California Eastern District in two parallel cases: PCFFA et al. vs. Raimondo et al. (No. 1:20-cv-00431) in which several of the signatories to these comments participated and the California Natural Resources Agency et al. vs. Raimondo et al. (No. 1:20-cv-00426) two cases which led directly to the Biden Administration calling for ESA Sec. 7 reconsultation to which this DEIS is related.]	
68-18	In addition we strongly encourage Reclamation to revise the Purpose and Need statement to more explicitly recognize that protections for ESA-listed species must be strengthened to avoid jeopardizing the continued existence and recovery of the species. The best available science continues to demonstrate that substantially greater protections for affected endangered species are required. Necessary protections include actions that will likely reduce water diversions as the Secretary of the Interior concluded in 2016 (US Department of Interior 2016) actions which were not included as part of the prior unlawful consultation. The State of California as well as the Plaintiffs in PCFFA v. Raimondo (including the Court testimony provided by	The Purpose and Need includes meeting federal law, including the ESA and implementing authorized purposes, including those under CVPIA. Please refer to Chapter 2, Purpose and Need, and Standard Response 4, Alternatives Formulation, regarding the purpose and need.

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	Dr. Jonathan Rosenfield in 2020 and 2021) have demonstrated that significantly improved protections beyond those included in the 2020 Record of Decision are necessary to ensure that the operations of the CVP and SWP do not jeopardize listed species and violate state and federal law.	
68-19	Finally we remind Reclamation that the Purpose and Need statement cannot be interpreted to exclude consideration of alternatives that would reduce water deliveries water allocations and/or water diversions by the CVP and SWP and its contractors. Coordinated operations of the CVP and SWP that reduce water diversions are consistent with Reclamation's legal obligations and defining the Purpose and Need so narrowly as to exclude these reasonable alternatives is unlawful. See e.g. Environmental Protection Information Center v. U.S. Forest Service 234 Fed. Appx. 440 (9th Cir. 2007). As discussed below adverse impacts on water contractors from rebalancing Project water allocations can be minimized or mitigated in a variety of ways many of which signatories to these comments could support. Extinctions on the other hand are permanent and cannot be mitigated.	Reclamation believes it has a strong reasonable range of alternatives. Reclamation underwent a rigorous alternative development process including the formulation of an Initial Alternatives Report. Alternative 3, for example, includes some of the considerations raised by this comment. Please refer to Standard Response 4, Alternatives Formulation, regarding the alternatives formulation and the purpose and need.
68-20	II. The DEIS Applies an Inappropriate Environmental Baseline. The DEIS improperly identifies the No Action Alternative as continued operations pursuant to the 2020 Record of Decision. (DEIS Executive Summary p. 0-2; see also Appendix E). However Reclamation is not implementing the operations exactly as authorized in the Record of Decision; rather the coordinated operations of the CVP and SWP are currently governed by the Interim Operations Plan approved by the federal court which differs from the operations in the Record of Decision in key ways. [Footnote 5: In addition the SWP's operations are also governed by its CESA incidental take permit which is not explicitly accounted for under this proposed No Action	Please refer to Standard Response 3, Baseline and No Action, regarding the use of the No Action Alternative for the purposes of NEPA.

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	Alternative.] Reclamation has operated under an Interim Operations Plan since 2022. Because the 2020 Record of Decision is not the current management direction it is inappropriate and misleading to use it as the environmental baseline. See e.g. Council on Environmental Quality Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations 46 Fed. Reg. 18026 (March 23 1981) ("In these cases 'no action' is 'no change' from current management direction or level of management intensity."); accord 43 C.F.R. 46.30 (definition of No Action Alternative). Moreover coordinated operations of the CVP and SWP have violated and are continuing to violate the terms of the 2019 Biological Opinions and Record of Decision. These violations include: (1) exceeding the incidental take statement for Central Valley Steelhead on the American River in 2021 and 2022; (2) exceeding the incidental take statement for winter-run Chinook Salmon in 2022 2023 and 2024; (3) exceeding the incidental take statement for Central Valley Steelhead at the Project pumps in 2024; and (4) violating D-1641 water quality objectives that were part of the proposed action in 2021 2022 and 2023 in a manner that causes additional impacts to listed species that were not considered in the 2019 biological opinions or Record of Decision. (50 C.F.R. 402.16; see also Defenders et al. Letter to BOR DWR USFWS CDFW and NMFS on ITL exceedance March 2024 Attachment 5). Continued operations under the 2020 Record of Decision would jeopardize listed species in violation of the ESA. [Footnote 6: Plaintiffs in PCFFA v. Raimondo demonstrated that water project operations under the Interim Operations Plan have and would violate certain aspects of the incidental take statement in the 2019 biological opinions and would jeopardize listed species.] As a result and because BOR is not currently implementing the Record of Decision using the coordinated operations of the CVP	

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	and SWP pursuant to the 2020 Record of Decision as the environmental baseline would subvert the purposes of NEPA and would be plainly misleading to the public and decisionmakers.	
68-21	III. The DEIS's Proposed Action is Legally Deficient. The Proposed Action otherwise referred to hereinafter as the Preferred Alternative or Alternative 2 is legally deficient under NEPA as well as the federal and state ESAs. According to the DEIS's own analysis the Proposed Action would jeopardize the continued existence of listed species in violation of the ESA and NEPA. Indeed this is true of all the alternatives except Alternative 3. In a recent rule the Council on Environmental Quality opined"[NEPA] establishes a framework for agencies to ground decisions in science by requiring professional and scientific integrity and recognizes that the public may have important ideas and information on how Federal actions can occur in a manner that reduces potential harms and enhances ecological social and economic well-being. See e.g. 42 U.S.C. 4332." (See Council on Environmental Quality National Environmental Policy Act Implementing Regulations Revisions Phase 2 89 Fed. Reg. 35442 (July 1 2024) (emphasis added)). The DEIS at issue here does not meet the intent of that rule. The potential adverse impacts from the Proposed Action are even worse than predicted given flaws in the DEIS's analysis of impacts to listed species.	Modeling results are not representations of the actual conditions and should be used only for a comparative analysis of alternatives. A special-status species population may be declining under the No Action Alternative. Please see Standard Response 7, Aquatic Resources, regarding adverse impacts on aquatic resources. The Draft EIS does not include a jeopardy analysis. The extent to which a project may "take" a threatened or endangered species or is or is not likely to jeopardize the continued existence of a species is determined by NMFS and USFWS. Please refer to Standard Response 2, Related Regulatory Processes.
68-22	The entire analysis of effects of temperature on juvenile Chinook Salmon is deeply flawed and unreliable. The DEIS also overlooks the best available science from recent studies on the effect of river flows on survival of different runs of Chinook Salmon upstream into and through the Delta and fails to use that information to update its modeling analyses. In addition the DEIS fails to acknowledge that its own modeling shows	The impact analysis provided in the EIS was based on a wide range of analyses above and beyond of what is typically compiled for water-based projects similar to the scope and complexity of the Reinitiation of Consultation on the Coordinated Long-Term Operation. In addition to CalSim 3 modeling, lines of evidence were used to assess impacts to listed and non-listed fish species. Water temperature–related impacts were assessed for the four

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	winter-run Chinook Salmon juvenile production would decrease relative to the No Action alternative and temperature impacts to migrating adults would increase under the Proposed Action	runs of Chinook salmon using HEC-5Q modeling and index values based on scientific literature (Attachment L.1, Sacramento River Water Temperature Analysis; Attachment M.1, American River Redd Dewatering Analysis; and Attachment N.1, Stanislaus River Water Temperature Analysis). A separate model was used to assess temperature-dependent mortality for egg to fry survival of winter-run Chinook salmon (Attachment L.2, Egg-to-Fry Survival and Temperature-Dependent Mortality). The Interactive Object-Oriented Simulation Model incorporates temperature modeling and is composed of six model stages that are arranged sequentially to account for the entire life cycle of winter-run Chinook salmon, from eggs to returning spawners (Attachment F.5, Interactive Object-oriented Simulation Model). The XT model (Attachment J.4, XT Model) and the Flow Threshold Model (Attachment J.5, Flow Threshold Salmon Survival Model) evaluate survival and travel time for spring-run and winter-run Chinook salmon using the passage component ("Migration Model") of the SacPAS Fish Model and studies from Michel et al. (2021). The Draft EIS discloses the anticipated impacts of the winter-run Chinook salmon juvenile product index model in Appendix O, Fish and Aquatic Resources, and Attachment L.3, Winter-run Chinook Salmon Juvenile Production Index Model. Michel, C. J., J. J. Notch, F. Cordoleani, A. J. Ammann, and E. M. Danner. 2021. Nonlinear Survival of Imperiled Fish Informs Managed Flows in a Highly Modified River. Ecosphere 12 (5):, e03498. doi: https://doi.org/10.1002/ecs2.3498.
68-23	The DEIS fails to acknowledge the beneficial effects of enhancing fall outflows for Delta Smelt or to acknowledge the findings of its own Delta Smelt Lifecycle Model analysis that Delta Smelt will go extinct under the Proposed Action.	Please refer to Standard Response 5, Adequacy of Analysis and Mitigation. The Draft EIS summarized multiple lines of evidence on the effects of X2 on Delta smelt. Section O.5.12.1 in Appendix O, Fish and Aquatic Resources Technical Appendix, interpreted these

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		lines of evidence to suggest Alternative 2's X2 position is expected to have a negligible impact on Delta smelt migration and abundance. A jeopardy analysis for Delta smelt is within the purview of USFWS. Please refer to Standard Response 2, Related Regulatory Processes. The Draft EIS (Appendix O, Section O.5.12.1) included life cycle analyses that showed a range in the expected population growth rate under Alternative 2. This range included values above and below 1.0, suggesting periods of Delta smelt population growth and decline under Alternative 2.
68-24	The DEIS likewise fails to disclose what its own analysis of Longfin Smelt clearly shows: that the species will go extinct under the Proposed Action (as well as the alternatives other than Alternative 3) and that in contrast Alternative 3 is highly beneficial for the species.	Also, please refer to Standard Response 7, Aquatic Resources, Section AD.3.7.2 Response to General Comments Regarding Adverse Impacts on Aquatic Resources, in reference to effects of the Proposed Action on Longfin Smelt. The longfin smelt jeopardy analysis is within the purview of USFWS. Please refer to Standard Response 2, Related Regulatory Processes. Support for Alternative 3 has been noted.
68-25	Furthermore the DEIS fails to consider both the current unsustainable levels of entrainment- related mortality of larval and juvenile Longfin Smelt and the increase in mortality for these life stages expected under the Proposed Action.	Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, Section AD.3.5.2, Adequacy of Analysis, in reference to consideration of entrainment mortality. Please also refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, regarding impacts of the alternatives, including Alternative 2 on longfin smelt entrainment.
68-26	Additionally the DEIS fails to adequately consider the current status of White Sturgeon or the Proposed Action's effect on the species or to use appropriate methodology to address the non-	The aquatics analysis used expert opinion and multiple quantitative analyses to assess impacts on both species. Please see Standard Response 5, Adequacy of the Analysis, regarding the

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	linear flow-recruitment relationship for this species. Similarly the DEIS fails to adequately consider expected negative impacts to threatened Green Sturgeon under the Proposed Action.	NEPA related requirements. The federally petitioned status of white sturgeon will be included in the Final EIS. The impact assessment of the Proposed Action on green and white sturgeon is located in Appendix O, Aquatic Resources Technical Appendix. The summary of project impacts for green sturgeon, southern DPS is located in Sections O.4.11, O.5.11, O.6.11, and O.7.11, with the Summary of Impacts in Table O-282 on pages O-1610 through O-1612. The summary of project impacts on white sturgeon are located in Appendix O, Sections O.4.15, O.5.15, O.6.15, and O.7.15, with the Summary of Impacts in Table O-282 on pages O-1623 through O-1625. The detailed summary for white sturgeon impacts (in the locations described above), in addition to the other non-listed species, was not included in Chapter 12 due to the high volume of information that needed to be condensed to meet NEPA related requirements (40 Code of Federal Regulations § 1502.7).
68-27	A. The DEIS's Proposed Action has Unreasonable Impacts to Listed Species. The DEIS fails to apply the best available science to analysis of impacts to endangered species and other biological outcomes. Its interpretation of modeling results fails to disclose the significance of impacts to listed species. To the extent that the analyses adequately compare the NAA with alternatives the DEIS demonstrates that Alternative 3 the modified natural hydrograph performs far better than the Proposed Action (also known as Alternative 2) and its variants. Furthermore the analyses reveal that incorporating the Voluntary Agreements (VAs) into Alternative 2 does little or nothing to improve protections for endangered species and in some cases the VAs would exacerbate negative outcomes. Indeed several analyses reveal that the Proposed Action/Alternative 2 variants are worse for listed species than the NAA. Thus operations proposed under the Proposed Action	Throughout the Draft EIS, the magnitude and context of the disclosed impacts are provided in accordance with NEPA. Please refer to Chapters 4–22 and Appendices G–X for an evaluation of impacts associated with the alternatives. NEPA requires high-quality data for evaluation of impacts. Please refer to Standard Response 5, Adequacy of the Analysis and Mitigation, for adequacy of the analysis in the Draft EIS. Adverse impacts associated with an alternative do not mean that an alternative is inconsistent with NEPA. Alternatives for operation of a multipurpose project of this magnitude will result in adverse effects. The federal Endangered Species Act is addressed under a Section 7 permitting process, which is separate from this NEPA process. Please refer to Standard Response 2, Related Regulatory

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	are not consistent with NEPA or the federal or state Endangered Species Acts and cannot be the preferred alternative.	Processes.
68-28	The DEIS fails to adequately describe or disclose the context for the proposed changes in CVP operations and revision of the Biological Opinions which violates one of the purposes of a DEIS under NEPA. (40 C.F.R. 1502.1 (b)-(c); see also Columbia Basin Land Protection v. Schlesinger 643 F.2d 585 594 (9th Cir. 1981) (A DEIS must ensure "full disclosure of the environmental consequences of a project.")) Fish and wildlife populations of San Francisco Bay and its watershed are experiencing an ecological crisis that has led to listing of six native fish species under state and/or federal Endangered Species Acts (SWRCB 2010 2017 2018; CDFW 2010). [Footnote 7: In June 2024 the California Fish and Game Commission made California White Sturgeon whose only known spawning population is in the San Francisco Bay watershed a "candidate" for California endangered species act listing as threatened. Candidate species receive full protection under the California Endangered Species Act (CESA) making White Sturgeon the seventh native fish species protected under state and/or federal ESAs.] Declining production of Central Valley Chinook Salmon has led to closure of California's ocean fishery for the past two years and severe constraints on Tribal fisheries and has also contributed to food shortages for federally listed Southern Resident Killer Whales in the Pacific Ocean. The U.S. Environmental Protection Agency ("EPA") recently stated the problem succinctly: "Currently six fish species (Delta smelt longfin smelt green sturgeon Sacramento River winter-run Chinook salmon Central Valley spring-run Chinook salmon Central Valley steelhead) are listed or proposed as threatened or endangered under the Endangered Species Act. The Bay-Delta and its watersheds have also experienced increased frequency of harmful algal blooms (HABs) affecting	Such context is adequately described in Chapter 2, Purpose and Need. A full description of each alternative is provided in Appendix E, Draft Alternatives, and disclosure of environmental consequences of each alternative is provided in the remaining Chapters 4–22 and Appendices G–X of the Draft EIS and their associated appendices and attachments. The federal Endangered Species Act is addressed under Section 7 permitting, which is separate from this NEPA process. Please refer to Standard Response 2, Related Regulatory Processes.

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	aquatic life and human health. EPA reiterates that swift action is needed to address the imperiled state of the Delta and the species communities and economies that depend on this ecosystem for survival." USEPA 2024 enclosure at 1 and 2 (Pages 4-5 of the PDF). The conservation status of these imperiled species continues to deteriorate. For example in its recent evaluation of endangered winter-run Chinook Salmon NOAA-Fisheries' Southwest Fisheries Science Center stated: "Until additional [winter-run Chinook Salmon] populations are established the ESU will remain in the "High" biological extinction risk category. The overall viability of the ESU has continued to decline since the 2015 viability assessment (Johnson and Lindley 2016) with the single spawning population on the mainstem Sacramento River no longer at a low/moderate risk of extinction (Table 5.4)." (SWFSC 2023). Longfin Smelt were recently listed as "endangered" by the U.S. Fish and Wildlife Service (USFWS 2024a). Moreover the State of California recently declared California White Sturgeon as a candidate for listing under the California ESA listing as threatened (CDFW 2024). Candidate species receive full protection under CESA immediate upon listing making White Sturgeon the seventh native fish species protected under state and/or federal ESAs. It is well-understood that water management including particularly operations of the CVP and SWP is a principal driver in the demise of native fish and wildlife species and water quality in the Bay-Delta estuary and its Central Valley watershed (SWRCB 2010 2017 2018; CDFW 2010). Again the U.S. EPA is clear on this point stating:"[Several] State Water Board reports in which the State Water Board compiled and analyzed a significant amount of comprehensive scientific information recognize that substantially more flow is needed in the Delta and Sacramento-San Joaquin watersheds to support aquatic life. Scientific consensus indicates that native fish	

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	population abundance is positively associated with flow volumes (e.g. Jassby et al. 1995 Sommer et al.1997 Mac Nally et al. 2010 Tamburello et al. 2019) and that largescale increases in both flow and habitat restoration are needed to recover and protect these and other native species. Restoration of higher flow volumes may address key drivers of HABs including increased stream temperature and water residence time (Kudela et al. 2023; Berg & Sutula 2015 Lehman et al. 2013)." USEPA 2024 enclosure at 1 and 2 (Pages 4-5 of the PDF). Furthermore it is clear that existing regulations are not adequate to halt the decline of native species and water quality. For example USFWS recently concluded that listing of Longfin Smelt was necessary because: "Despite efforts such as those identified above [including existing requirements for the protection of other state and federal endangered species] the current condition of the estuary and continued threats facing the estuary and Bay-Delta longfin smelt such as reduced freshwater inflow severe declines in population size and disruptions to the DPS's food resources have not been ameliorated." (USFWS 2024a). Specifically the 2019 Biological Opinions are inadequate to protect the endangered species from further harm from combined operations of the SWP and CVP. Indeed by its own terms the NMFS 2019 Biological Opinions has failed to adequately protect endangered species. [Footnote 8: This failure comes despite court-ordered changes to the Biological Opinions that were intended to improve protections.] For example in 2022 Reclamation exceeded even the excessively high incidental take limit of the 2019 NMFS BO regarding winter-run Chinook Salmon egg to fry survival which is only triggered after three years in a row of exceedingly low egg to fry survival. Most recently in 2024 the incidental take limits for salvage were exceeded for both winter-run Chinook Salmon and Central Valley Steelhead. (50 C.F.R. 402.16; see also	

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	Defenders et al. Letter to BOR DWR USFWS CDFW and NMFS on ITL exceedance March 2024 Attachment 5). The DEIS fails to transparently disclose this crucial context and thus denies decision makers and the public information needed to evaluate proposed changes to CVP operations and alternatives. See 40 C.F.R. 1502.14 ("consider a reasonable range of alternatives that will foster informed decision making") (emphasis added). Analyses that indicate "no change" from existing conditions do not necessarily indicate compliance with federal or state ESA requirements. Because of the dire plight of the ESA-listed species operational proposals that do not significantly improve status quo conditions are likely to lead to extinction and are thus inconsistent with state and federal Endangered Species Acts. Reclamation's Proposed Action would jeopardize the continued existence of listed species in violation of state and federal ESA requirements. The baseline for the Proposed Action is measurably worse for imperiled fish species than the conditions that preceded the 2019 Biological Opinion (i.e. the 2008/2009 Biological Opinions) and those conditions were known to be inadequate to protect the Bay estuary and watershed's endangered fish species (See US Department of Interior 2016). Similarly SWP operations authorized under the state's 2020 CESA incidental Take Permit are less protective than those that preceded that update. These project impacts are not adequately mitigated. As described below combined CVP/SWP operations under the Proposed Action would exacerbate the risk of extinction for six native Bay-Delta fish species and one marine mammal that are protected under the ESA compared to baseline conditions that are leading to extinction. As a result the Proposed Action is wholly inadequate for use by the USFWS and NMFS in their consideration of incidental take permits under the ESA. [Footnote 9: We would also like to highlight that despite NMFS and USFWS agreeing on the Proposed Action as	

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	the "coordinated" alternative to base their Biological Opinions on both NMFS and USFWS have used different versions of the Proposed Action in each of their incomplete draft Opinions as of September 9 2024 and the BOR has subsequently released a third version of the Proposed Action "Alternative 2B" in the DEIS at issue here. Therefore there are three versions of the proposed supposedly coordinated operations to be reviewed for environmental compliance both under NEPA and the state and federal ESAs.]	
68-29	Comments on the analyses for different species their scientific basis and the adequacy of the interpretation in the DEIS are below. 1. Chinook Salmon. The DEIS frequently fails to apply the best available science to analysis of impacts of the Proposed Action to Chinook Salmon in general and the listed winter-run and spring-run in particular. The interpretation of modeling results fails to disclose the significance of impacts to the endangered species or fisheries. To the extent that the analyses adequately compare the NAA with alternatives the DEIS demonstrates that Alternative 3 performs better than all other alternatives including the Proposed Action (Alternative 2b and its variants). Furthermore the analyses reveal that incorporating the Voluntary Agreements (VAs) into Alternative 2 does little or nothing to improve protections for winter-run Chinook Salmon or spring-run Chinook salmon and in some cases the VAs would exacerbate negative outcomes that are driving these ESA- listed species to extinction. Several of the DEIS's analyses clearly indicate that the Proposed Action will continue the trend towards extinction for listed salmonids or even exacerbate their decline. For example the "CVPIA SIT winter-run life-cycle model" (DEIS Appendix F Modeling Attachment F at 2) predicts that Alternative 2 variants will result in population growth rates that are as low or lower than the NAA in most cases. (DEIS Table F.2-	Refer to Standard Response 4, Alternatives Formulation, for more information about the rigorous approach Reclamation undertook in the development of a reasonable range of alternatives. Please refer to Standard Response 10, Voluntary Agreements, for information on how Voluntary Agreements are incorporated on Alternative 2. All analyses, including OBAN, were performed in a comparative manner in order to evaluate the effects of an alternative relative to the NAA. Comparisons of egg to fry survival in OBAN to historical values is an inappropriate use of the outputs from CalSim, on which OBAN inputs are based. Throughout the Draft EIS, the magnitude and context of impacts is evaluated and disclosed. Support for Alternative 3 is noted.

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	9). Addition of the VAs to Alternative 2 leads to the worst population declines (Table F.2-10). Alternative 3 is the only set of operational criteria expected to produce population growth over the model's 19-year study period. (DEIS Table F.2-10). In addition the DEIS's Oncorhynchus Bayesian Analysis (OBAN) model finds that all Alternative 2 variants and the NAA have a high probability of extinction for winter-run Chinook Salmon. As the DEIS appendix reports: [Footnote 10: Reference to OBAN (or other models) does not indicate that we believe the model represents the best available science. Here the reference simply indicates that this model provides no evidence that the Proposed Action is likely to prevent further jeopardy to endangered species or that it is a meaningful improvement over the NAA.] "Under all Alternative 2 components and the NAA median abundances dropped to below the quasi-extinction threshold within 10 years and to a value of less than 1.0 within 14 years. Median abundance was less than 9.0 for the remainder of the time series across all Alternative 2 components and the NAA. The pattern in abundance across components was due to low levels of egg to fry survival and delta survival throughout the model. In all components the median egg to fry survival was less than the median historical estimated egg to fry survival (median= 0.212 95% Credible Interval (0.083 0.501)) and the median delta survival (median = 1.23 x 10-2 95% Credible Interval 5.60 x 10-3 3.39 x 10-2)). The historical estimated survival rates were estimated from escapements in 1967-2011 which was a period of winter-run Chinook population decline. Thus median survival rates that are below the historical values would result in modeled abundance declines over the 98-year time series." (DEIS Appendix F Modeling Attachment F.6 Oncorhynchus Bayesian Analysis Model at F.6-21).	

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68-30	Similarly the DEIS's modeling of spring-run Chinook Salmon population dynamics shows that Alternative 2 will result in the same mean population growth rate as the NAA (Appendix F Modeling Attachment F.3 Tables F.3-5 and F.3-6). The status quo is not a good outcome for spring-run Chinook Salmon as this unique population is severely imperiled and its abundance and productivity continue to decline precipitously under current operations. Referring to spring-run Chinook Salmon the NOAA-Fisheries Regional Administrator was recently quoted as saying: "We are running out of options. We want this species to thrive in the wild but right now we are worried about losing them." (CDFW 2023a). Furthermore the DEIS fails to disclose that spring-run Chinook Salmon viability is now even further impaired by catastrophic wildfires that burned through their few remaining watersheds in 2024; the destruction of forests threatens to degrade habitats used for holding spawning incubation and early rearing (see for instance https://www.latimes.com/environment/story/2024-08-06/park-fire-threatens-critical-california-salmon-habitat#:~:text=California's%20spring%2Drun%20Chinook%20salmonthat%20provide%20critical%20spawning%20habitat). It is in this context that the DEIS must interpret its modeling results; they reveal that spring-run Chinook Salmon will continue to decline under the Proposed Action as they are doing under the unacceptable status quo.	This information about the precarious status of spring-run Chinook salmon is generally consistent with the affected environment provided in Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.1.3.2. The potential impacts from the Park wildfire in 2024 have been added to the Affected Environment Section O.1.3.2.
68-31	Below we critique and interpret other analyses in the DEIS that deal with specific stressors and salmonid life-stages. Collectively these results reinforce the finding of the life cycle modeling operations under the Proposed Action will produce biological outcomes for listed salmonids that are worse or only marginally better than the NAA. Temperature Impacts	The monthly timestep used in the temperature analyses is disclosed in the EIS in multiple locations: Attachment L.1, Sacramento River Water Temperature Analysis; Attachment M.2, American River Water Temperature Analysis; and Attachment N.1, Stanislaus River Water Temperature Analysis. Discussion of the monthly timestep as a limitation is found in

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	The DEIS (Appendix AB-L Attachment L.1 Table L.1-1 at L-3) and BA (Table 5-1 at 5-4) assume temperature thresholds for Chinook Salmon that are incorrect according to the best available science. [Footnote 11: The dissolved oxygen threshold presented in BA Table 5.1 is also incorrect as the best available science indicates that 5 mg/L of DO is detrimental for all life stages of Chinook Salmon and Steelhead (SEP 2019 at 110 121 126 139 151). The DEIS should be corrected to reflect this fact. Because effects of alternatives on DO are not analyzed in the DEIS we make no further comment on this error.] In addition the DEIS fails to disclose the time-step for its temperature metrics and modeled results (e.g. whether they represent daily averages daily maxima multi-day averages or multi-day averages of maximum temperatures). The absolute effect of the results in the DEIS are difficult to interpret without such specifics.	Attachment L.1, Section L.1.2.1, Assumptions/Uncertainty; Attachment M.2, Section M.2.2.2, Assumptions/Uncertainty; and Attachment N.1, Section N.1.2.2, Assumptions/Uncertainty. The Draft EIS presents a comparative analysis applied equally to all of the alternatives. The high-quality information used in the Draft EIS, including water temperature indices, were taken from scientific literature and are adequate for NEPA purposes.
68-32	With respect to egg incubation the best available science reveals that temperature dependent egg mortality (TDM) increases rapidly at daily average temperatures above 53.5 degrees F (Martin et al. 2016 2020). The Martin studies demonstrate this temperature threshold using field data laboratory studies and computer models. They collectively and convincingly explain (a) the mechanisms driving TDM in winter-run Chinook Salmon; (b) why earlier laboratory studies consistently overestimated the upper temperature threshold for Central Valley Chinook Salmon eggs and (c) the temperature tolerances for teleost fishes in general. Furthermore Martin et al.'s results are consistent with recent literature reviews specific to Chinook Salmon in the Central Valley (Myrick and Cech 2004; SEP 2019) and well-documented syntheses of range-wide temperature tolerances (US EPA 2003). Thus there is no justification for the assumption that temperatures above 53.5F are suitable for Chinook Salmon or for relying on old	Reclamation presented multiple lines of evidence regarding temperature stressors on salmonids including temperature-dependent mortality, water temperature analysis, and life cycle analyses. Results from both models are presented to evaluate each alternative in Attachment L.2, Egg-to-Fry Survival and Temperature-Dependent Mortality. The temperature range used in the analysis was estimated by refitting the Martin model to account for parameter uncertainty. The water temperature analysis regarding early life stages of salmonids used a variety of temperature criteria from the literature including 42.1F and 55F (spawning initiation), 59.9F (adult pathogen virulence), and 42.6F to 56F (egg incubation and fry emergence).

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	laboratory-based studies (e.g. Slater 1963) as a basis for temperature sensitivity of Chinook Salmon eggs. Indeed SEP (2019 Table 36 at 137) identifies daily average temperatures 53.6F to 55.9F as "stressful" and temperatures greater than or equal to 56F as "detrimental" to incubating Chinook Salmon eggs. [Footnote 12: As defined by the SEP (2019 at p. 103) detrimental conditions are: "[a]ssociated with a significant level of harm at the individual or population level."] The optimal temperature range for Steelhead eggs is even lower than the upper end of the optimal range for Chinook Salmon (Myrick and Cech 2004; SEP 2019).	
68-33	Similarly the DEIS and BA assertions about temperature ranges suitable for juvenile Chinook Salmon rearing migration and smoltification (metamorphosis from freshwater to ocean-going juveniles) are entirely incorrect. Far from being "optimal" 68F (20C) as a 7-day average of daily maxima (7DADM) is the boundary between "stressful" and "detrimental" conditions for Chinook Salmon juveniles in river channel environments where food is typically limiting (Table 1; SEP 2019). [Footnote 13: Juvenile Chinook Salmon optimal temperatures are higher in inundated floodplain habitats because of the ad libitum availability of food (SEP 2019) but the 68F 7DADM threshold for detrimental conditions still applies (Table 1).] [Footnote 14: Despite a wealth of recent "performance based" studies of different Chinook Salmon juvenile responses to temperature there is no convincing evidence that juveniles of the different Chinook Salmon runs differ materially in their temperature tolerances. The authors of several of those studies state:" Performance-based studies such as this one typically evaluate only short-term peak physiologic performance in a controlled setting and free of ecological stress and therefore may not reflect true capacity to tolerate high temperatures in a natural	Regarding the juvenile rearing value in question (68F), Marine and Cech (2004) state: "juveniles reared at 21–24 C experienced significantly decreased growth rates, impaired smoltification indices, and increased predation vulnerability compared with juveniles reared at 13–16 C. Fish reared at 17–20 C experienced similar growth, variable smoltification impairment, and higher predation vulnerability compared with fish reared at 13–16 C." Note: 13C = 55.4F; 16C = 60.8F; 17C = 62.6F, and 20C = 68F. The comment states that the Draft EIS uses 68F for steelhead juvenile rearing. However, the analysis uses 66.2F based on research conducted in the American River (Myrick 1998; Myrick and Cech 2001). The several sources, including USEPA (2003), cited in the tables above show a smoltification limit for steelhead of 55F (12.8C), and this temperature is used in the Water Temperature Analysis for steelhead in the steelhead sections in Appendix O, Fish and Aquatic Resources Technical Appendix. Marine, K. R., and J. J. Cech. 2004. Effects of High Water

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	setting. In identifying temperature thresholds including site-specific targets it is critical to also consider how factors in the ecological setting (e.g. diet competition predators disease duration and habitat quality) impact fish response to temperature.... Further directly equating the results of performance-based site-specific tests to the thresholds in EPA 2003 would be inappropriate; such tests typically do not incorporate ecological factors to the extent of EPA 2003." (Zillig et al. 2020). Their caveat regarding US EPA 2003 would also apply to Myrick and Cech 2004 and SEP 2019 which considered empirical field results and ecological analyses in addition to laboratory studies in identifying key thermal thresholds.] Although the time step of results for the DEIS and BA are not clearly stated we suspect that they report daily average or monthly average temperature results. Because averages are less than maxima even daily average temperatures of 68F represent even higher maximum temperatures. The DEIS's failure to apply the correct numeric temperature threshold (and associated time-step) for harm to juvenile Chinook Salmon biases its analysis of absolute effects of temperature on juvenile Chinook Salmon survival rendering them deeply flawed and unreliable. Table 1: Temperature thresholds for Central Valley salmonids identified in a recent literature review (SEP 2019). The upper three rows apply to fall-run and spring-run Chinook Salmon (which are believed to have the same temperature requirements as other Chinook Salmon runs) in river channel environments where food is usually limited. The lower 7 rows apply to Central Valley Steelhead (O. mykiss). Copied from SEP 2019 (Table 42). [See original comment for a table on Temperature Objectives for Chinook Salmon and O. mykiss Juvenile Rearing Migration and Smoltification]Prolonged exposure to average daily maximum temperatures above 60.8F (16C) is sub-optimal for Central Valley juvenile Chinook Salmon when food is limited	Temperature on Growth, Smoltification, and Predator Avoidance in Juvenile Sacramento River Chinook Salmon. North American Journal of Fisheries Management, 24(1): 198–210. Available: https://doi.org/10.1577/M02-142. Myrick, C.A. 1998. Temperature, Genetic, and Ration Effects on Juvenile Rainbow Trout (Oncorhynchus mykiss) Bioenergetics. University of California, Davis ProQuest Dissertations and Theses. Myrick, C. A., and J. J. Cech. 2001. Temperature Effects on Chinook Salmon and Steelhead: A Review Focusing on California's Central Valley Populations. Bay-Delta Modeling Forum. U.S Environmental Protection Agency. 2003. EPA Region 10 Guidance for Pacific Northwest state and tribal temperature water quality standards. U.S. EPA, Seattle, Wash. 33 pp. EPA 910-B-03-002 (2003). Available: www.epa.gov/r10earth/temperature.htm.

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	(Table 1; US EPA 2003; SEP 2019). Increases in temperature between 60.8oF and 68oF are associated with decreasing performance. Based on numerous review papers US EPA (2003) identified several negative impacts on juvenile Chinook Salmon of temperatures less than 68F (20C) and this is consistent with field studies from the Central Valley that found steady declines in survival above ~60.8F (~16C; Kjelson and Brandes 1989). Recent studies also indicate that negative effects on juvenile Chinook Salmon increase in severity as temperatures approach 68F (20C). For example Nobriga et al. (2021) conclude:"[s]urvival was nearly zero for two smolt release groups exposed to water temperatures closest to 20C and two others exposed to slightly warmer water. Qualitatively this abrupt decline in survival coincides with declining swimming capacity and increasing predation risk. This synthesis reinforces earlier studies that similarly indicated young Chinook Salmon must emigrate through the Delta before water temperature reaches 20C." Similarly Lehman et al. (2017) (at their Figure 3) showed that performance of Chinook Salmon declined at temperatures above 18C. Furthermore Munsch et al. (2019) found that cold water in the lower rivers and estuarine habitats promotes juvenile rearing such that size and duration of freshwater rearing increased measurably for every 1C decrease in April water temperatures. There is no suggestion in the relevant literature that 68F is a suitable temperature for Chinook Salmon or Steelhead smoltification as asserted by the DEIS. In fact USEPA (2003) indicates that smoltification for both species may be impaired at temperatures above 53.6oF (12C). Richter and Kolmes (2005) indicate that Steelhead smoltification may be inhibited at temperatures as low as 11C to 14C (51.8F to 57.2F). (See also USEPA (1999)). Myrick and Cech (2005) cautioned that smolting Steelhead in the Central Valley must experience	

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	temperatures less than 51.8F (11C) to successfully complete this metamorphosis.	
68-34	Finally the DEIS thresholds of 37.9-68F for adult Chinook Salmon migration are also not supported by the best available science. USEPA (2003) identifies constant temperatures in this range (greater than 64.4-68F (>18 - 20C)) as associated with "high" risk of disease outbreaks. Even the DEIS alternative temperature "index value" of 59.9F is too high to reflect suitable conditions. SEP (2019 Table 19 at 108) finds daily average temperatures 57.2F to 66.2F (14C to 19C) are "stressful" to migrating adult Chinook Salmon and Steelhead and temperatures above 66.2F are detrimental. The temperature thresholds applied in the DEIS affect the veracity of analysis for each of the Chinook Salmon runs (and Steelhead). The net result of these erroneous temperature thresholds is to underestimate and misrepresent the impacts of the Proposed Action and alternatives to each Chinook Salmon run. For example Tables L.1-3 through 1-8 and Tables L.1-9 through 1-14 (Appendix AB-L Attachment L.1 Sacramento River Water Temperature Analysis) are likely to underestimate the frequency of impacts to adult Chinook Salmon from high water temperatures because the DEIS's definitions of "optimal" or suitable temperatures are egregiously high.	A temperature range "associated with high risk of disease outbreaks" is different than a temperature range that allows successful migration, as the Draft EIS analyzes. The Draft EIS does analyze a 59.9F pathogen virulence threshold, which is analogous to the "high risk of disease." The EIS summarizes temperature-related effects using multiple lines of evidence. Reclamation relied on ESU-specific information from California watersheds being considered; when this was not available, Reclamation deferred to the primary literature sources, not other regulatory or programmatic syntheses of temperature criteria. For lines of evidence presenting biological outcomes of alternatives, the models use the temperature parameter they were calibrated for, and they are each different (see Attachment L.2 for Martin et al. 2017 and Anderson et al. 2022 for estimated TDM; for juvenile production index methodology, see Attachment L.3 for JPI). The assumptions and caveats and/or citations describing the limitations of these are included in each of the line of evidence attachments. For lines of evidence presenting modeled temperature data and exceedance of temperature criteria, multiple index values were identified from the literature and applied to consider exceedances. Regardless of whether there is disagreement with indices, the Draft EIS presents a comparative analysis of expected temperatures under the action alternatives and the No Action Alternative. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS, NEPA requirements for impact determinations, and the identification and development of mitigation measures.

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		Anderson, J.J., Beer, W.N., Israel, J.A., and Greene, S. 2022. Targeting river operations to the critical thermal window of fish incubation: Model and case study on Sacramento River winter-run Chinook salmon. River Research and Applications 38: 895-905. Martin, B.T., Pike, A., John, S.N., Hamda, N., Roberts, J., Lindley, S.T., and Danner, E.M. 2017. Phenomenological vs. biophysical models of thermal stress in aquatic eggs. Ecology Letters 20: 50-59.
68-35	In another example of how incorrect temperature thresholds obscure the effects of the Proposed Action and its alternatives the DEIS analysis that purports to show how alternatives increase or decrease the number of month-water year type combinations with favorable and unfavorable temperature results (DEIS Appendix O Table O-32) is very likely to be incorrect in absolute terms. The table's defined range for temperatures "favorable" for juvenile growth migration and smoltification (55.4F 68F) is distinctly unfavorable for Chinook Salmon and Steelhead with the high end of the range being well above the upper optimal thresholds for those two species identified. [Footnote 15: not provided] [Footnote 16: As elsewhere in the DEIS this analysis is further confused by the failure to provide temporal units for the temperature thresholds. The table title implies that it reflects monthly average temperatures in or out of its (incorrect) temperature range. Chinook Salmon temperature thresholds are typically expressed as daily averages or 7DADM (USEPA 2003) because these are timesteps that are relevant to the species' biology. Monthly average temperatures have little value for evaluating absolute impacts of project operations as they almost certainly incorporate daily average and daily maximum temperatures (and associated impacts) that are much higher. Even if daily	The 55.4°F to 68°F range used in the analysis was taken from the scientific literature (Myrick and Cech 2002; Marine and Cech 2004) and represents the best available science. These studies are based on fish from the Central Valley of California. The monthly timestep used in the temperature analyses is disclosed in the EIS in multiple locations: Attachment L.1, Sacramento River Water Temperature Analysis; Attachment M.2, American River Water Temperature Analysis; and Attachment N.1, Stanislaus River Water Temperature Analysis. Discussion of the monthly timestep as a limitation is found in Attachment L.1, Section L.1.2.1, Assumptions/Uncertainty; Attachment M.2, Section M.2.2.2, Assumptions/Uncertainty; and Attachment N.1, Section N.1.2.2, Assumptions/Uncertainty. Marine, K. R., and J. J. Cech. 2004. Effects of High Water Temperature on Growth, Smoltification, and Predator Avoidance in Juvenile Sacramento River Chinook Salmon. North American Journal of Fisheries Management, 24(1): 198–210. Available: https://doi.org/10.1577/M02-142. Myrick, C. A. and Cech, J. J. 2002. Growth of American River Fall-

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	average (or maximum) temperatures cannot be calculated using existing models the DEIS must acknowledge the implications of using monthly average outputs to evaluate impacts that occur at a daily (or shorter) timestep.] As a result the DEIS does not disclose how frequently project alternatives cause warm water temperatures that are harmful to juvenile Chinook Salmon and Steelhead.	Run Chinook salmon in California's Central Valley: Temperature and Ration Effects. California Fish and Game, 88(1): 35-44. Available: https://www.noaa.gov/sites/default/files/legacy/document/2020/Oct/07354626790.pdf.
68-36	Furthermore the low end of the range in Table O-32 is much higher than the minimum optimal temperature for juvenile Chinook Salmon (it is also inconsistent with the optimal range identified in Appendix AB-L.1). As a result operations that result in temperatures colder than the DEIS's (incorrect) lower temperature bound would be scored as "unfavorable" in Table O-32 when in fact they have no detrimental effect on juvenile Chinook Salmon. This is likely to be the case for some of the "unfavorable" results alleged in Table O-32 including those for "Below Keswick Dam" and "Red Bluff Diversion Dam" (compare Table O-32 to Appendix AB-L.1 Table L.1-4). Similarly the results relating to temperature impacts for migrating juveniles (Appendix AB-L.1 Table L.1-30) are uninformative and misleading. For example it is highly unlikely that river temperatures at Red Bluff are in excess of 68oF in December of all year types as the table portrays. Instead it is likely that this analysis shows that temperatures will be below 55.4oF in December; however that water temperature is not known to have significant negative effects on juvenile Chinook Salmon.	All water temperature index values and ranges used in the analysis were taken from the scientific literature and represent high-quality information and best available science. For the purpose of completeness, the analysis evaluates occurrence temperatures outside the indicated range during the entire period when a life stage is present regardless of how “highly unlikely” an occurrence outside a range in a specific month of presence might be.
68-37	The temperature standards used to assess project alternatives in the DEIS must be based on the best available science. The errors in analysis and interpretation of temperature impacts caused by the DEIS's use of erroneous temperature indicators must be corrected. In that vein the DEIS must also indicate the temporal units of index temperatures and its modeled temperature	The temperature analyses are based on best available science as described in Attachment L.1, Sacramento River Water Temperature Analysis; Attachment M.2, American River Water Temperature Analysis; and Attachment N.1, Stanislaus River Water Temperature Analysis. Sources for all values and ranges are disclosed in Attachment L.1, Table L.1-1; Attachment M.2, Table M.2-1; and

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	results. The revised DEIS then must be recirculated for public review. To the extent that comparisons between alternatives using the temperature thresholds above still represent the relative impacts of the Proposed Action it is clear that Alternative 3 is the superior alternative. The NAA frequently generates the worst temperature outcomes of the alternatives considered. Most variants of Alternative 2 represent little to no improvement over the inadequate NAA.	Attachment N.1, Table N.1-1. The timestep used in the temperature analyses is disclosed in the EIS in multiple locations: Attachment L.1, Sacramento River Water Temperature Analysis; Attachment M.2, American River Water Temperature Analysis; and Attachment N.1, Stanislaus River Water Temperature Analysis. Support for Alternative 3 is noted.
68-38	Results for TDM [Temperature Dependent Mortality] are key to evaluating performance of alternatives relative to the 2019 Biological Opinion which failed to maintain even its own wholly inadequate requirements regarding egg and fry survival. The sheer number of studies of egg temperature tolerance thresholds (reviewed in Myrick and Cech 2004; Richter and Kolmes 2005; SEP 2019) illustrates the unquestionable importance for Central Valley Chinook Salmon of preventing high levels of TDM. For this reason tables comparing TDM under all alternatives should appear in the main body of the EIS and/or in the Appendix dedicated to fish impacts. The figures related to TDM in DEIS Chapter 12 (Figures 12-28 12-29 and 12-30) are not informative and fail to disclose that Alternative 3 will result in TDM that is less than half of that expected under the NAA (Appendix AB-L attachment L.2 [Footnote 17: not provided] Table L.2-2). TDM in Critical years during which high levels of TDM have occurred in the past and on average across all years is lowest for Alternative 3. [Footnote 18: The DEIS estimates TDM based on two different models the "Anderson Model" and the "Martin Model" based on Martin et al. 2016 2020. As noted above the model developed by Martin et al. is the gold-standard for estimating temperature impacts on incubating Chinook Salmon. There is no reason to present the	Tables comparing TDM under all alternatives are located in Attachment L.2, Egg-to-Fry Survival and Temperature-Dependent Mortality. The Draft EIS incorporates performance metrics from multiple lines of evidence regarding temperature stressors including multiple TDM, water temperature analysis, and life cycle models. Support for Alternative 3 is noted.

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	"Anderson" alternative especially since it produces qualitatively similar results. For the sake of clarity and scientific accuracy the final EIS should omit reference to the "Anderson Model" estimates.] Of the Alternative 2 variants the version without VAs and with TUCPs performed best. Other Alternative 2 variants performed remarkably worse (each is projected to produce >50% TDM in Critical years and >10% TDM on average); there is no evidence that Alternative 2 variants adequately mitigate temperature impacts of the NAA. Alternative 1 displayed the worst performance increasing TDM over the unacceptable status quo in all drier years and causing high levels of TDM even in Wet and Below Normal years when TDM is generally low. Alternative 4 was the second worst scenario among the alternatives.	
68-39	As described above the DEIS fails to use the best available science with respect to adult migration temperature thresholds. [Footnote 19: This impact is not hypothetical. Reclamation's operations of Shasta in April-May 2021 led to 6% pre-spawning mortality of winter-run Chinook Salmon upstream of Red Bluff (CDFW 2021 "Discussion" tab Row 5 available from https://www.calfish.org/ProgramsData/ConservationandManagement/CDFWUpperSacRiverBasinSalmonid Monitoring/tabid/357/Agg2208_SelectTab/4/Default.aspx)] Thus Tables L.1-3 through L.1-8 (Appendix AB attachment L.1) do not provide reliable information about the magnitude of temperature impacts on migrating adult Chinook Salmon. Furthermore the analysis ignores the fact that winter-run Chinook Salmon migration is not evenly distributed across the January-June period. According to the BA over 90% of winter-run have migrated past Red Bluff by the first week of June and only 10% of the annual run migrates past this location in January (BA Appendix AB-C Table C- 1). A revised DEIS should	The analysis is based on a review of the scientific literature, as described in Attachment L.1, Sacramento River Water Temperature Analysis; Attachment M.2, American River Water Temperature Analysis; and Attachment N.1, Stanislaus River Water Temperature Analysis. Sources for all values and ranges are disclosed in Attachment L.1, Table L.1-1; Attachment M.2, Table M.2-1; and Attachment N.1, Table N.1-1. The 59.9°F pathogen virulence threshold is not arbitrary, as it is directly from an EPA-funded review and synthesis of water temperature effects on Chinook salmon (McCullough 1999). All water temperature index value/range analyses are presented by month and water year type to allow the reader to view individual months that may be more or less of interest to them. The indices are applied equally to all of the alternatives for an adequate comparative analysis under NEPA.

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	indicate the relative impact of temperature exceedances on winter-run Chinook Salmon (and other species) in different months as weighted by the portion of the population expected to be exposed to these temperatures. To the extent that this analysis provides relevant information on relative impacts across the different alternatives we note that Alternative 3 outperforms all other alternatives in May of Wet years eliminating temperature impacts at Hamilton City; this alternative also performs best (lower temperatures) in May across all years (Table L.1-8). Projected increases in temperature impacts in June (of any water year type) are unlikely to occur because almost all winter-run Chinook Salmon are upstream of Hamilton City (and even upstream of Red Bluff) by June; thus the results that combine "all" months within year-types at Hamilton City are erroneous and misleading. Similarly although the DEIS arbitrarily uses 59.9F as an indicator of suitable temperatures for Chinook Salmon adults the relative differences between alternatives may provide some useful information. Again temperatures in different months and locations are differentially important to winter-run Chinook Salmon; no temperature impacts are projected under any alternative far upstream at Keswick and temperatures downstream of Red Bluff are not relevant to winter-run Chinook Salmon in June. At Red Bluff Alternative 1 performs best (Table L.1-12). Alternative 3 performs second best in May when most winter-run Chinook Salmon would be exposed to high temperatures expected under the NAA at this location. [Footnote 20: It is not clear what the data/units are for values in the "NAA" column represent given that the Table is said to reflect "Percent (difference in percent relative to NAA) of months This should be clarified in a revised DEIS.] With respect to holding temperatures for winter-run Chinook Salmon adults the temperature range used for analysis appears to match that supported by the best available	McCullough, D.A. 1999. A Review And Synthesis of Effects of Alterations to the Water Temperature Regime on Freshwater Life Stages of Salmonids, with Special Reference to Chinook Salmon. US Environmental Protection Agency, Region 10.

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	science (SEP 2019 Table 26 at p. 120); therefore the DEIS's results for this analysis may reflect absolute as well as relative impacts of the Proposed Action and Alternatives. The analysis indicates that Alternative 3 produces the most suitable temperatures in Critical years and (along with Alternative 1) across all years (Table L.1-16). Of the Alternative 2 variants Alt2wTUCPwoVA produces the best holding temperatures on average but it is only the third best alternative.	
68-40	JPI Calculation The DEIS attempts to predict the annual production of juvenile winter-run Chinook Salmon that migrate past Red Bluff each year a "juvenile production index" ("JPI"). The JPI is used to determine allowable take limits such as winter-run Chinook Salmon loss limits at the CVP and SWP export facilities in the south Delta. However the statistical prediction of JPI developed in the DEIS is not peer-reviewed not credible and not based in the best available science. First the model does not do a good job of predicting the data from which it was developed and it is not tested against data from other years. (DEIS Appendix AB-L attachment L.3 Winter-run Chinook Salmon Juvenile Production Index Model Figure L.3-2). Thus there is no evidence that this model is a reasonably good predictor of egg-to-to fry survival rates which is the key to JPI calculation. Second the model underestimates the importance of high water temperature one of the most important drivers of poor Chinook Salmon egg larval and fry survival. The DEIS reports that the one temperature variable included in the JPI predictive model mean water temperature at Highway 44 during winter-run Chinook Salmon incubation and emergence was not well supported statistically. (DEIS Appendix AB-L). As a result the model downplays or ignores the known effect of temperature impacts on winter-run Chinook Salmon egg-to-fry survival. A wealth of	The impact analysis provided in the EIS was based on a broad set of lines of evidence above and beyond of what is typically compiled for water-based projects similar to the scope and complexity of the Reinitiation of Consultation on the Coordinated Long-Term Operation. In addition to CalSim 3 modeling, a large number of biological models were used to assess impacts to listed and non-listed fish species. Please see Standard Response 5, Adequacy of Analysis and Mitigation.

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	published studies makes the unassailable case that water temperature is a key factor in reproductive success of Chinook Salmon (e.g. USEPA 1999 2003; Myrick and Cech 2004; Richter and Kolmes 2005; Martin et al. 2016 2021). In fact the DEIS uses models of TDM [Temperature Dependent Mortality] as its only means of estimating egg-fry-survival. (Appendix AB-L Attachment L.2 Egg-to-fry Survival and Temperature-Dependent Mortality). The DEIS states: "The Martin et al. (2017) or Anderson et al. (2022) models can be used to predict egg-to-fry survival for winter-run Chinook salmon as a function of temperature-dependent egg mortality background mortality and density-dependent mortality." (DEIS Appendix AB-L Attachment L.2 Egg-to-fry Survival and Temperature- Dependent Mortality at L.2-1). Furthermore the State Water Resources Control Board ("State Water Board" or "SWRCB") states: "Exposure of Chinook salmon and steelhead populations to elevated water temperature is a major factor contributing to their decline (see Section 3.4; Myrick and Cech 2001). Reductions in cold water storage impede reservoirs from meeting their downstream water temperature requirements especially during critically dry years (NMFS 2009a 2014a)." (SWRCB 2017 at p. 4-18). Moreover the draft NMFS BiOp lists water temperature and storage egg Incubation and emergence temperature as a "primary stressor" for the listed Chinook Salmon runs and Central Valley Steelhead (Draft NMFS Biological Opinion Table C p. 4). Elsewhere it reports a "high" weight of evidence that TDM [Temperature Dependent Mortality] is a "high" magnitude stressor for winter-run Chinook Salmon eggs that occurs with "medium" frequency affecting a "large" portion of the population (Draft NMFS BiOp Table KK at p. 71).Failure to include a variable that effectively captures the effect of high water temperature on Chinook Salmon egg larvae and fry success in the final JPI predictive model likely reflects inadequacy of candidate variables chosen	

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	to represent temperature effects rather than a lack of such an effect. Each of the temperature variables assumes a linear effect of temperature on winter-run Chinook Salmon JPI [juvenile production index] but the effect of temperature on Chinook Salmon eggs larvae and fry is non-linear (Myrick and Cech 2004; Martin et al. 2017). Below a critical threshold temperature has no effect on egg survival (water that is too cold for egg development is not a concern for winter-run) and above that threshold increases in temperature and exposure time produce very rapid increases in mortality. Thus the candidate variables (average temperature during key incubation period "Temp_SAC_I" and cumulative degrees per day above 11.67C during incubation period at Highway 44 "CD_above_11.67_I") would not be expected to correlate with JPI in a linear fashion. For example the average temperature indicator ("Temp_Sac_I") assumes that every increment of temperature has the same effect on egg larvae and juvenile success-- this is not true. Similarly the cumulative temperature variable ("CD_above_11.67_I") assumes that repeated small temperature exceedances (e.g. 0.2oC exceedance per day for 30 days) have the same effect on egg success as large exceedances over a short term (e.g. 6C exceedance for one day) this is not the case. Also the "CD_above_11.67_I "variable would begin to increase before the critical temperature threshold had been exceeded for the bulk of the winter-run Chinook Salmon eggs. Because the vast majority of winter-run spawning occurs well- upstream of Highway 44 and water warms as it flows downstream in the summer temperatures equal to and a little above 11.67C at Highway 44 correspond to optimal temperatures upstream where the vast majority of eggs are incubating. This kind of flawed construction of candidate variable explains in part the DEIS's failure to detect significant temperature effects on JPI. But this failure is not an excuse for the DEIS to reject the	

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	overwhelming body of literature showing negative effects of high water temperature on incubating Chinook Salmon eggs and the subsequent size of the juvenile cohort.	
68-41	Moreover the flow variables included in the DEIS's statistical model of JPI [juvenile production index] are not independent of river temperature. [Footnote 21: By contrast within the range of winter-run Chinook Salmon spawning river temperatures are not significantly affected by reservoir release volume; Danner and Daniels (2020) found that reservoir release temperature dominates the effect of river flow rate on river temperatures in the winter-run Chinook Salmon spawning reach.] Winter-run survival is likely to be good during high flow years exactly because there is ample cold water behind Shasta Dam in addition to any other benefits provided by river flow. Shasta releases are liable to be low in years when coldwater pool is limited resulting in high TDM [Temperature Dependent Mortality] and poor JPIs. High summer Sacramento River flows are most likely in years when reservoir releases are not constrained by coldwater pool management. As an example the data set used to create the DEIS's JPI model includes 2014 2015 2021 and 2022 years when the Bureau and DWR requested and received waivers from Delta flow standards (also referred to as Temporary Urgency Change Orders) with the explicit intent of preserving cold water upstream behind Shasta Dam for the benefit of winter-run Chinook Salmon. [Footnote 22: For example see SWRCB orders in 2014 2015 and 2022 specifically referencing preservation of upstream coldwater storage at: http://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/2014/wro2014_0029.pdf; https://www.waterboards.ca.gov/drought/docs/tucp/2015/tucp_order020315.pdf; and https://www.waterboards.ca.gov/waterrights/board_decisions/a	Results from the winter-run JPI line of evidence demonstrates the importance of temperatures and flows on the production of juveniles, and the patterns are similar to temperature's effect on temperature-dependent mortality of eggs. Please see Standard Response 5, Adequacy of Analysis and Mitigation. Multiple lines of evidence are presented to evaluate operations on species. As the comment notes, the JPI has not been peer reviewed, but it is the only tool considered for evaluating operations (storage, blending, releasing from Shasta Division) on juvenile production, which is an independent metric from temperature-dependent mortality. Many lines of evidence are presented to evaluate water temperature effects because, as noted by the commenter, it is a major factor. The Draft EIS describes the temperature stressor caused by storage and blending water on early life stages of Chinook salmon. Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.5.8.1 presents information for early life stages as well as adults, supporting these effects with multiple lines of evidence. Reclamation presents several lines of evidence to allow for more fully considering impacts of operations, unbiased by perception of magnitude of drivers.

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	dopted_orders/orders/2022/wro2022_0095.pdf] Despite those waivers temperature impacts on winter-run Chinook Salmon eggs were extraordinarily high and egg-to-fry survival exceptionally low during most of those years (DEIS BA Appendix AB Chapter 5 Table 5-13 at 5-45 and 5-46). In other words reservoir releases and flows in the incubation habitat of winter-run Chinook Salmon eggs were artificially low in those years in which temperature impacts were expected to be and eventually were high. The relatively strong negative correlation between both discharge and mean flow at Red Bluff and the two temperature variables demonstrates that the JPI model's flow variables represent temperature effects at least in part. (DEIS Appendix L.3 Table L.3-2 at p. L.3-4.)	
68-42	Finally TDM [Temperature Dependent Mortality] does not necessarily correlate with JPI [juvenile production index] in a linear fashion. Instead TDM constrains JPI -- high or low reproductive success (egg-to-fry survival) are possible when TDM is low but only low egg-to-fry survival rates (and relatively low JPIs) are possible when TDM is high. The mechanism is clear: eggs that die due to exposure to high temperature do not contribute to juvenile production. This does not mean that TDM is unimportant (even at moderate levels) it simply means that TDM and the forces that produce it should not be expected to show up in the kind of statistical modeling attempted in the DEIS.	Results for TDM are included as a line of evidence in the Draft EIS's evaluation of the alternatives' effects on spawning and egg/alevin incubation. Results from the winter-run JPI line of evidence demonstrates the importance of temperatures and flows on the production of juveniles, and the patterns are similar to temperature's effect on temperature-dependent mortality of eggs. Please see Standard Response 5, Adequacy of Analysis and Mitigation.
68-43	The DEIS must be revised and recirculated without the current JPI model. Either a new valid predictor of JPI that accurately reflects the known role of river temperature on survival of Chinook Salmon egg larvae and fry must be developed or the revised DEIS must omit such a predictor and rely on estimates of TDM to gage the effect of alternatives on juvenile production. The revised DEIS should analyze the effects of	The JPI line of evidence incorporates the temperature and flow effects on CVP operations on winter-run Chinook salmon juvenile production as one line of evidence related to egg larve and fry winter-run Chinook salmon. An evaluation of flow effects on juvenile migration rearing and emigration survival is included in the Draft EIS, and lines of evidence include fry stranding analysis, survival and travel time (which included Michel 2021), winter-run

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	alternative operations on winter-run Chinook Salmon using a version of the NMFS winter-run Life Cycle Model (https://oceanview.pfeg.noaa.gov/wrlcm/) updated to incorporate the best available science regarding the effects of river flow on winter-run juvenile survival (including Michel 2018; Henderson et al. 2019; Hance et al. 2021; Hassrick et al. 2022).	Chinook salmon juvenile production index model, and water temperature analysis. In the Delta, juvenile migration and emigration survival and entrainment is evaluated using lines of evidence including zone of influence, flow into junction, salvage density and negative binomial, ECO-PTM, STARS, and DPM. Citations listed were considered in or developed later than the model selection phase of the Initial Alternative Report. Some of the citations (e.g. Hassrick et al 2022, Henderson et al 2019) do not have models accessible or operable. The NMFS winter-run LCM was considered during the Initial Alternative Report phase and after attempts could not be run by Reclamation or its consulting team. Only tools that were accessible and operable were used in the Draft EIS. Please see Standard Response 5, Adequacy of Analysis and Mitigation. Hassrick, J. L., A. J. Ammann, R. W. Perry, S. N. John, and M. E. Daniels. Factors Affecting Spatiotemporal Variation in Survival of Endangered Winter-Run Chinook Salmon Out-migrating from the Sacramento River. 2022. North American Journal of Fisheries Management 42(2). Available: https://doi.org/10.1002/nafm.10748. Henderson, M. J., I. S. Iglesias, C. J. Michel, A. J. Ammann, and D. D. Huff. 2019. Estimating Spatial-Temporal Differences in Chinook Salmon Outmigration Survival with Habitat and Predation Related Covariates. Canadian Journal of Fisheries and Aquatic Sciences 76(9):1549–1561. Michel, C. J., J. J. Notch, F. Cordoleani, A. J. Ammann, and E. M. Danner. 2021. Nonlinear Survival of Imperiled Fish Informs Managed Flows in a Highly Modified River. Ecosphere 12 (5):, e03498. doi: https://doi.org/10.1002/ecs2.3498.

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68-44	If despite the flaws described above the DEIS's JPI estimate represents the relative effects of operational alternatives then this model predicts that all Alternative 2 variants will produce lower numbers of juvenile winter-run Chinook Salmon passing Red Bluff than the NAA (See Table 2 below). Furthermore the Alternative 2 variant that includes watershed-wide VAs ("Alt2woTUCPAllVA") performs worse than other Alternative 2 variants in the vast majority of years. If the final EIS maintains use of the DEIS's JPI prediction model then it must disclose the negative impact to winter-run Chinook Salmon population viability of reduced juvenile production expected under the Proposed Action relative to the current unacceptable status quo the NAA. Table 2: Predicted juvenile winter-run Chinook Salmon production indices for variants of Alternative 2 relative to the NAA. Copied from Appendix AB-L Shasta Coldwater Pool Management Attachment L.3 "Winter-run Chinook Salmon Juvenile Production Index Model". [See original comment for a table on JPI observed and mean predicted values under BA scenarios from 2002 to 2022 by water year type.]	Reclamation discloses the potential impacts of Alternative 2 using the JPI comparative analysis in Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.5.8.1. Please refer to Chapter 12, Fish and Aquatic Resources, and Appendix O for the multiple lines of evidence used to evaluate effects on winter-run Chinook salmon. Please also see Standard Response 5, Adequacy of Analysis and Mitigation.
68-45	In-stream flow effect on survival The DEIS fails to acknowledge findings of recent peer-reviewed literature which reveals the positive effect of river flow into the Delta on habitat use in and survival beyond the Delta (Michel 2018; Munsch et al. 2020). Similarly the DEIS fails to disclose the effect of flow on juvenile Chinook Salmon as they migrate downriver from Red Bluff to the Delta despite recent peer-reviewed research that shows that flow is the dominant variable affecting in-stream migration success (Henderson et al. 2019; Sturrock et al. 2019; Friedman 2019; Notch et al. 2020; Hassrick et al. 2022). The DEIS must be updated to incorporate the findings of these recent studies and others that represent the best available science on the effect of river flow upstream and	The EIS includes two models to assess impacts of river flow on juvenile Chinook salmon survival. A flow threshold model assesses potential effects of changes in flow in the upper Sacramento River on juvenile Chinook salmon as a result of flow-survival relationships. The flow thresholds from Michel et al. (2021) were applied to Sacramento River at Wilkins Slough. The XT model (Anderson et al. 2005), which the SacPAS Fish Model uses, assumes fish are similar between cohorts but the environment they experience is different. Flow varies spatially and temporally, and there is a trade-off between the distance (X) a fish travels and the time spent (T) for a fish in a reach when calculating survival. Please see Attachment J.5, Sacramento River Juvenile Stranding Analysis, and Attachment J.4, XT Model, for details on the methods

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	into and through the Delta on survival of each run of Central Valley Chinook Salmon.	and analyses and Sections O.4.8.1, O.6.8.1, O.7.8.1, and O.5.8.1 in Appendix O, Fish and Aquatic Resources Technical Appendix, for a summary of the results. Anderson, J.J., E. Gurarie, and R. W. Zabel. 2005. Mean Free-Path Length Theory of Predator-Prey Interactions: Application to Juvenile Salmon Migration. Ecological Modelling 186(2):196-211. doi: DOI 10.1016/j.ecolmodel.2005.01.014. PubMed PMID: ISI:000230636400004. Michel, C. J., J. J. Notch, F. Cordoleani, A. J. Ammann, and E. M. Danner. 2021. Nonlinear Survival of Imperiled Fish Informs Managed Flows in a Highly Modified River. Ecosphere 12 (5):, e03498. doi: https://doi.org/10.1002/ecs2.3498.
68-46	Through-Delta Survival Impacts The DEIS states: "The survival of juveniles in the Sacramento River downstream of Red Bluff Diversion Dam is addressed primarily under the outmigration cues stressor while the survival of juveniles in the Delta is addressed primarily by entrainment risk." (BA Appendix AB Chapter 5 Winter-Run Chinook Salmon at 5-56). This is misleading. Whereas entrainment of listed Chinook Salmon at the CVP and SWP pumps is an important indicator of the impact of water exports it is far from the only impact of CVP/SWP operation on through-Delta survival. Citing the U.S. Department of Interior the State Water Board notes: "More important than direct entrainment effects however may be the indirect effects caused by export operations increasing the amount of time salmon spend in channelized habitats where predation is high (USDOI 2010 29)." (SWRCB 2017 at p. 3-47). In fact the DEIS employs several models to estimate through-Delta survival of Chinook Salmon that incorporate flow including the STARS model and Delta Passage Model (see	Several analyses in the Draft EIS discuss impacts on juvenile in-river and through-Delta survival. In addition to the models discussed by the commenter (Attachments I.5, I.6, I.7, F.2, F.3, and F.5), the Flow Threshold Salmon Survival Model and XT Model (Attachment J.4, XT Model, and Attachment J.5, Sacramento River Juvenile Stranding Analysis) evaluate juvenile in-river emigration and survival.

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	below) particle tracking models the CVPIA SIT models for winter-run Chinook Salmon and spring-run Chinook Salmon the Interactive Object-oriented Simulation (IOS) Model etc.	
68-47	STARS Model The DEIS employs the Survival Travel Time and Routing Simulation ("STARS") model to evaluate the effect of flows in Delta channels on the routing and ultimate success of migrating Chinook Salmon juveniles. The results of Perry et al. (2018) upon which the STARS model is based have been largely corroborated for other runs of Chinook Salmon migrating in different seasons (Hance et al. 2021). The STARS model should be updated to incorporate the more recent results from Hance et al. Also the DEIS should acknowledge that the STARS model is relevant to routing and survival of Chinook Salmon smolt only not fry that rear in the Delta before migrating to the ocean. Munsch et al. (2020) document the effect of flow on occupancy and density of wild-spawned Chinook Salmon fry in shallow tidal rearing habitats in the Delta. The DEIS must be revised to analyze the effect of different operational alternatives on juvenile Chinook Salmon survival in-river to the Delta. In addition the DEIS should investigate how each operational alternative affects use of shallow tidal habitats by emigrating fry Chinook Salmon; this is especially relevant given that mitigation for combined project operations has emphasized restoration of this type of "habitat."	The Survival Travel Time and Routing Simulation ("STARS") model adequately evaluates predictions of routing and survival probabilities in the Delta (Attachment I.5, Survival, Travel Time, and Routing Simulation Model). Hance et al. 2021 was not available at the time of model selection. The Draft EIS evaluates the effects of the alternatives on in-river and Delta juvenile salmonid survival using multiple lines of evidence including rearing habitat analysis, juvenile stranding analysis, XT survival model, flow-survival threshold model, life cycle models, juvenile production index model, and water temperature analysis to evaluate effects of operations on juvenile rearing and emigration survival. In the Bay-Delta, juvenile rearing and migration survival effects of operations are evaluated considering the hydrodynamic zone of influence of exports, changes in flow into junctions, salvage density model, negative binomial loss model, CWT salvage model, STARS, ECO-PTM, and Delta Passage Model. The Flow Threshold Salmon Survival Model and XT Model (Attachments J.4 and J.5) evaluate juvenile in-river emigration and survival. The IOS model (Attachment F.5) evaluates fry survival and juvenile river migration survival for winter-run Chinook salmon. Please see Standard Response 5, Adequacy of Analysis and Mitigation. Hance, D. J., R. W. Perry, A. C. Pope, A. J. Ammann, J. L. Hassrick, and G. Hansen. 2021. From Drought to Deluge: Spatiotemporal Variation in Migration Routing, Survival, Travel Time, and Floodplain Use of an Endangered Migratory Fish. Canadian Journal

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		of Fisheries and Aquatic Sciences 79(3):410-428.
68-48	Using the STARS model the DEIS compares through-Delta survival of Chinook Salmon smolt from December-April under each of the project alternatives. (DEIS Appendix AB-I Attachment I.5 Table I.5-3). This time-period is most relevant to winter-run Chinook Salmon smolt migration. It is not clear why the model was not applied in each month that Chinook Salmon smolt migrate so that readers could easily understand impacts to other runs including the listed spring-run Chinook Salmon and economically ecologically and culturally important fall-run Chinook Salmon. The DEIS must be revised so that the STARS model is used to investigate the success of migrating smolt of each Central Valley Chinook Salmon run.	The STARS model is only applied to winter-run Chinook salmon. Other daily timestep model linking inflow, exports, and resulting hydrodynamics is presented for spring-run Chinook salmon including ECO-PTM and the Delta Passage Model. Also, the Delta Passage Model was used for fall-run Chinook salmon. Please see Standard Response 2, Related Regulatory Processes.
68-49	In each month studied the DEIS projects that the greatest modeled increase in survival of winter-run smolt will occur under operations specified in Alternative 3. Effects of other alternatives vary from month to month and the DEIS does not summarize them. However it is clear that Alternative 1 performs worse than the other runs (with through-Delta survival declining 7.6% in December and 2.6% in January versus NAA). Alternative 4 is nearly identical to the NAA. The Alternative 2 variants are barely different from NAA in most cases with each variant expected to result in survival less than or equal to the NAA in at least one month. Table I.5-4 presents a different view of the same output from the STARS model this time binning the data by categories of Sacramento and San Joaquin inflow to the Delta. Not surprisingly Alternative 3 is again the superior operational approach with through-Delta survival exceeding that of other operational alternatives in nearly every "inflow group" combination (DEIS Appendix AB-I Attachment I.5 Figure I.5-4). Figure 1.5-10 clearly displays the substantial effect of increasing river flow on through-Delta survival under all	The Biological Assessment evaluates the Proposed Action. At this time, the Proposed Action is Alternative 2. Please see Standard Response 2, Related Regulatory Processes. The EIS is part of the NEPA process. Results of the analysis for each alternative are presented in the Draft EIS relative to the No Action Alternative. Please refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.5.8.2 for a comparative analysis of impacts to winter-run Chinook salmon through-Delta survival from Alternative 2 and Section O.6.8.2 for a comparative analysis of impacts to winter-run Chinook salmon through-Delta survival from Alternative 3. Support for Alternative 3 is noted.

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	alternatives. The BA's "takeaways" do not disclose these results focusing instead on the range of Delta survivals estimated for the NAA and the Alternative 2 variants alone. The DEIS must be revised to disclose that Alternative 3 is expected to result in higher Delta survival than any of the Alternative 2 variants and that the latter are only marginally different and sometimes worse than the NAA.	
68-50	Delta Passage Model The DEIS also applies the Delta Passage Model (DPM) to study through-Delta survival. As elsewhere in the DEIS and BA where different models are used to analyze the same outcomes the DEIS must identify the purpose of applying different models and the specific benefits and shortcomings of the models applied. Otherwise application of different models to the same phenomenon generates confusion and obscures the best available science.	Attachment I.6, Delta Passage Model: A Simulation Model of Chinook Salmon Survival, Routing, and Travel Time in the Sacramento–San Joaquin Delta, provides a full description of the model, including Section I.6.2.11, Assumptions/Uncertainty. The Draft EIS presents a summary of multiple lines of evidence for potential stressors affected by operational alternatives. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.
68-51	Like the STARS model DPM relies on data from tagged smolt to estimate routing and survival of smolt through the Delta; neither model addresses survival probabilities of smaller fish that migrate into and attempt to rear in the Delta. Because they are weaker swimmers than smolt and because they reside in the Delta longer Chinook Salmon fry and parr are likely to be more susceptible to differences in Delta hydrodynamics caused by operational alternatives for the CVP/SWP. The DEIS should be revised to acknowledge that survival of the very large portion of juvenile Chinook Salmon that enter the Delta as fry or parr is not modeled by either the STARS model or DPM.	Section I.6.2.11, Assumptions/Uncertainty, in Attachment I.6, Delta Passage Model, states this assumption: "Although studies have shown considerable variation in emigrant size, with Central Valley Chinook salmon migrating as fry, parr, or smolts (Brandes and McLain 2001; Williams 2001), the DPM relies predominantly on data from acoustic-tagging studies of large (>140 mm) smolts, and therefore should be applied very cautiously to pre-smolt migrants. Salmon juveniles less than 70 mm are more likely to exhibit rearing behavior in the Delta (Moyle 2002) and thus likely will be represented poorly by the DPM." Attachment I.5, Survival, Travel Time, and Routing Simulation Model, does not claim to model fry or parr Chinook salmon. Please see Standard Response 5, Adequacy of the Analysis and

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		Mitigation. Brandes, P. L., and J. S. McLain. 2001. Juvenile Chinook Salmon Abundance, Distribution, and Survival in the Sacramento-San Joaquin Estuary. In R. L. Brown (ed.), Fish Bulletin 179(2): Contributions California Department of Water Resources Environmental Setting Background Information to the Biology of the Central Valley Salmonids, pp. 39–136. Sacramento, CA: California Department of Fish and Game. Moyle, P. B. 2002. Inland Fishes of California. Revised and Expanded. University of California Press, Berkeley, CA. Williams, J. G. 2001. Chinook Salmon in the Lower American River, California's Largest Urban Stream. Contributions to the Biology of Central Valley Salmonids. R. L. Brown (ed.). California Department of Fish and Game Fish Bulletin 179(2):1–38.
68-52	Figures depicting survival under the alternatives analyzed (e.g. Appendix AB-I Attachment I.6 Delta Passage Model: A Simulation Model of Chinook Salmon Survival Routing and Travel Time in the Sacramento San Joaquin Delta Figures I.6-12 & 6-14) obscure actual differences between the alternatives by depicting variance that has nothing to do with the alternatives. River flow conditions that effect through-Delta survival of Chinook Salmon (and other fish) are affected by underlying annual hydrology. Within a water year-type the wettest years may be many-fold wetter than the driest years. This variance in underlying conditions will affect river flows in each alternative but much of the resulting variance in annual hydrology within water year types has nothing to do with the alternatives themselves. Each alternative will experience the same	Reclamation chose to present the data in a figure this way to allow the reader to see all of the data. The two figures cited by the commenter (Figures I.6-12 and I.6-14) are accompanied by tables and text describing the results.

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	underlying (unimpaired) hydrology in each year. Thus plotting the variance (box and whiskers) of survival outcomes for each alternative expands the y-axis and tends to make the alternatives look similar or even indistinguishable and it implies that the relative differences between alternatives in any given year is uncertain because they are "variable". But this is not the case. Studying the differences between alternatives would focus the analyses on the variation that results from the alternatives themselves. The DEIS must be revised to visualize differences between alternatives by plotting the average differences and variation in differences rather than average outcome and variation in those outcomes for each alternative.	
68-53	Because the DEIS uses STARS only to evaluate winter-run Chinook Salmon smolt survival through the Delta we are left with the DPM results to evaluate survival for the other runs. Table I.6-6 (Appendix AB-I Attachment I.6) corroborates the STARS model projections for winter-run Chinook Salmon smolt under each alternative relative to the NAA. Alternative 3 displays substantially higher survival for smolt of each run than any of the other alternatives; winter-run smolt survival is projected to increase by up to 7.73 percent relative to the NAA and improvements are substantial in every year type. Depending on year-type survival of listed spring-run Chinook Salmon smolt is expected to increase by 5.16-9.31 percent under Alternative 3 operations versus the NAA. Each of the Alternative 2 variants results in worse survival for spring-run Chinook Salmon smolts than the NAA in at least one water year type. Alternative 1 results in declines in winter-run Chinook Salmon smolt survival compared to the NAA in all water year types and in all but Critical years for spring-run Chinook Salmon smolt. Alternative 3 is also projected to result in substantial increases in survival of fall-run and late-fall run smolts relative	The EIS discloses potential adverse impacts on Central Valley species in Appendix O, Fish and Aquatic Resources Technical Appendix; Chapter 12, Fish and Aquatic Resources; and the Executive Summary. Please see Standard Response 7, Response to General Comments, regarding adverse impacts on aquatic resources. Support for Alternative 3 is noted.

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	to the NAA. In fact survival for these runs under Alternative 3 is superior to all other alternatives in the vast majority of years. By contrast Alternative 1 results in survival worse than the NAA in all water year types for late-fall run Chinook Salmon. Three of the Alternative 2 variants (wTUCPwoVA; woTUCPwoVA; woTUCP; DeltaVA) result in fall-run smolt survival that is worse than the NAA in most years. The DEIS must disclose the likely negative effects on Central Valley and marine Chinook Salmon fisheries of the reduced fall-run and late-fall run smolt survival in some water year types under certain operational alternatives.	
68-54	2. Delta Smelt. The DEIS applies the USFWS Delta Smelt Life Cycle Model (Delta Smelt LCM) to analyze CVP operational alternatives. This model represents the best available science. However as applied in the DEIS the Delta Smelt LCM does not consider supplemental fall outflow (the "Fall X2" action) to be a benefit to Delta Smelt despite the fact that many papers (including research that informs the Delta Smelt LCM) indicate that fall outflow has a significant positive effect on Delta Smelt abundance probably via its effect on larval recruitment (USFWS 2008; Rose et al. 2013ab; Polansky et al. 2021; CSAMP 2024). Other research demonstrates that increased fall Delta outflow corresponds to improved habitat for Delta Smelt including increased availability of Pseudodiaptomus forbesi the principal prey for sub-adult Delta Smelt (Hassrick et al. 2023; Kimmerer et al. 2018) and reduced temperatures in October (Bashevkin and Mahardja 2022).The DEIS fails to apply the peer-reviewed Delta Smelt life cycle by Rose et al. (2013ab) which uses an individual based-mechanistic approach to analyze Delta Smelt population response to management alternatives. However another recent study (Compass 2024) used the Rose et al. (2013a,b) model and showed positive population growth for Delta Smelt when fall outflow was set to month-specific locations < 80Km following	As part of the CalSim3 simulations that informed the secondary biological modeling (such as the Delta Smelt LCM), a Fall X2 action was incorporated for Alternative 2 to maintain a 30-day average of X2 ≤ 80 km for September through October in above normal and wet years. This information is detailed in Appendix D, Mitigation Measures, as part of the Delta Smelt Summer and Fall Habitat Avoidance and Minimization Measures. CalSim3 simulation X2 position by water year type and by month are presented in Table O-201 in Appendix O, Fish and Aquatic Resources Technical Appendix, and demonstrates that for Alternative 2, simulated X2 position for the months of September and October are at approximately 80 km. As a result of recent scientific findings, including the 2024 draft USFWS Biological Opinion, Reclamation has modified Alternative 4 to remove the Fall X2 requirement. In addition, Reclamation has conducted a Summer X2 sensitivity analysis that includes above normal wet years, export reductions, releases from storage, and fall X2 located at 85 km. A June action that uses a one-month block of water equivalent to what had been used for Fall X2, Delta Outflow no greater than 10,000 cfs (split between CVP and SWP in accordance with COA) and using both export reductions and

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	Wet and Above Normal year-types. The Compass (2024) results also indicated that Delta Smelt populations would have declined more rapidly than observed over the 1994-2014 period if fall outflow had been set to month-specific locations of > 80 km in those same year-types (Compass 2024 Table 8 at p. 25). Because research continues to indicate that supplemental fall outflow may have a beneficial effect on Delta Smelt the DEIS should consider the sensitivity of the Delta Smelt population to differences in fall outflow among the modeled operational alternatives.	storage withdrawals to meet outflow requirements. Please refer to Standard Response 11, Summer Fall Habitat Action, for additional information regarding a summer and fall habitat action. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the use of other models.
68-55	The Delta Smelt LCM analysis clearly demonstrates that Alternative 3 substantially outperforms all other alternatives with respect to estimated future population growth rates (DEIS Figure 1; Attachment F.4 Table F.4-5 and Figure F.4-9). In fact Alternative 3 is the only alternative that produces positive Delta Smelt population growth rates on average. Negative average population growth rates shown in all other alternatives are consistent with inviable populations and extinction (McElhaney et al. 2002). Alternative 2 variants produce negative growth rates that are on average nearly indistinguishable from or worse than the NAA and empirical growth rates that have led to the near disappearance of this once abundant endemic fish species. Furthermore all Alternative 2 variants perform worse than NAA or empirical results in Wet and Above Normal Years. The DEIS provides some insight into this result explaining: "Meanwhile NAA and the PA components may have produced lower [lambda] [population growth rate] than the empirical data during wetter years because of the lower June-August Delta Outflow values and more negative OMR values for some months. NAA and the PA components did not produce higher [lambda] despite OMR restrictions that should reduce entrainment of Delta smelt. This may be due to the apparent	Reclamation consults with NMFS and USFWS on any action that may affect federally listed species, or their designated habitat and they determine if the action is likely to jeopardize the continued existence of the species or adversely modify its designated habitat. Lifecycle modeling represents impacts from several ecological stressors to the species. Population growth rates are shown Figure 12-4. The No Action Alternative, Alternative 2, and Alternative 4 include Delta smelt supplementation that is anticipated to benefit the population. The analyses for the Delta Smelt LCM in the EIS are comparative; they report effects of each alternative relative to the No Action Alternative. This analysis is adequate under NEPA. Support for Alternative 3 is noted.

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	trade-off between OMR flow and summer Delta outflow that somehow occurred between PA components and the empirical data." (DEIS Appendix F Attachment F.4 Delta Smelt Life Cycle Model with Entrainment at F.4-21). This demonstrates that Alternative 2 is not consistent with requirements of the ESA (especially given that Alternative 3 and non-alternative scenarios ("EXP1" and "EXP3") demonstrate that operations that result in positive population growth are possible). Alternative 1 performs far worse than the NAA (Figure 1 below; see also DEIS Attachment F.4 at Table F.4-5). [See original comment for a bar graph on the Mean population growth rates aggregated across the years]Figure 1: Graphic showing mean Delta Smelt population growth rates projected under each project alternative across years as compared to empirical estimates of Delta Smelt population growth from 1995-2015. Population growth rates of 1.0 represent a stable population (no growth or decline on average); growth rates less than 1.0 indicate long-term decline in population abundance over time. Persistent negative growth rates eventually lead to population extirpation. Other DEIS analyses are consistent with the finding that the Proposed Action will not improve conditions for Delta Smelt relative to the unacceptable NAA and that conditions under the Proposed Action may be worse than the NAA at times. For example another Delta Smelt population model shows that the No Action Alternative is worse than the baseline that Alternative 2 variants are roughly equivalent to or worse than the NAA and that Alternative 3 vastly outperforms the other alternatives (Appendix F Attachment F.1 Tables F.1-5 and F.1-6). Similarly the DEIS analysis of summer and fall Delta outflow and habitat concludes:" HSI [habitat suitability index] values across the Alternative 2 components were similar to those of the NAA at all levels of spatial organization (Delta summer and fall habitat subregions together individual subregions; Table K.1-7 Table	

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	K.1-8). For the Delta and summer and fall habitat subregions percent differences were slightly negative; for each subregion percent changes generally ranged between -3 to 2 except in the Confluence during the critical water year and in some of the Suisun Bay subregions during the wet below normal and critical water year types (Table K.1-7 Table K.1-8)." (DEIS Appendix K Attachment K.1at p. K.1-42). The DEIS must acknowledge and emphasize the clear implications of its Delta Smelt Life Cycle Model analysis. This species will go extinct under the No Action Alternative and may go extinct more rapidly under the Proposed Action. Meanwhile alternative operational scenarios exist that could potentially prevent extinction and enable recovery.	
68-56	3. Longfin Smelt. As with other listed fish species in San Francisco Bay Delta and its watershed operations that do not improve conditions relative to the status quo for this estuary's Longfin Smelt population are inconsistent with the requirements of the ESA. The USFWS recently observed that Bay-Delta Longfin Smelt DPS "...has plausibly been declining for over 50 years and that decline is presently at circa 34 orders of magnitude below initial observations." (USFWS 2024b at p. 36). In its final listing decision USFWS found that despite numerous efforts regarding conservation and regulation of the San Francisco Bay estuary and its resources including the 2019 Biological Opinions 2020 CESA ITP and existing water quality requirements "the current condition of the estuary and continued threats facing the estuary and Bay-Delta longfin smelt such as reduced freshwater inflow severe declines in population size and disruptions to the DPS's food resources have not been ameliorated" (USFWS 2024a; see also Federal Register Vol. 87 No. 194 [Friday October 7 2022] at pp. 60957-60974). Furthermore USFWS's analysis revealed that: "[f]orecasts	Please refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, regarding impacts on longfin smelt.

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	of population size using vital rates estimated by the model indicate that it is likely that Longfin Smelt population sizes will dip below recoverable levels within a decade if these recent levels of reproduction and survival continue" and "[b]ased on the meta-analysis the mean quasi-extinction value for the population is 33% (25% 41%) over 20 years and rises to 50% (42% 58%) in 30 years (USFWS 2024b at p. 195 and p. 115) (emphasis added). Despite the extremely precarious state of the Longfin Smelt population the proposed combined operations of the CVP and SWP analyzed in the DEIS would not only fail to improve conditions for the Bay-Delta Longfin Smelt population often they would make those conditions worse.	
68-57	Delta Outflow model The DEIS employs flawed modeling to estimate the impacts of the Proposed Action and fails to disclose the harm to Longfin Smelt revealed by its modeled results. The DEIS employs a novel statistical approach which has not been peer-reviewed to combine multiple models of Longfin Smelt population dynamics [Footnote 23: These models are not likely to produce credible estimates of absolute abundance or abundance index values for this population. First the modeling relies on incorrect assumptions about the nature of the Longfin Smelt-flow abundance relationship. Specifically the models incorporate different Longfin Smelt flow-abundance relationships during multi-year periods that it identifies as "ecological regimes" citing Nobriga and Rosenfield (2016) as the source of these different categories. In fact Nobriga and Rosenfield provide no support for the "ecological regimes" used in the DEIS' modeling approach and neither does Thomson et al. (2010 at 1439-140 and Figure 6 at 1442). Second the modeling employs non-traditional approaches. For example the DEIS generates multiple models whose "distributions were combined as a weighted average across models" in a process	Please refer to Standard Response 5, Adequacy of Analysis and Mitigation. Reclamation provided the longfin smelt-outflow analysis (Attachment J.1, Longfin Smelt Outflow) to the DSP peer review panel who provided input about the statistical methods and results. The approach to the analysis was deemed “statistically sounds and attempts to quantify uncertainty using several techniques. … The overall fit is encouraging as a description of historical trends…” The No Action Alternative is the appropriate comparison for alternatives, and comparison between alternatives is not described. This line of evidence is documented in the Draft EIS to show that longfin smelt abundance is similar between Alternative 2 phases and the No Action Alternative and varies slightly (±5%) depending on water year type and specific phase (Appendix O, Section O.6.12.1). Abundance between Alternative 3 and the No Action Alternative is estimated to be higher regardless of water year type (Appendix O.6.13.1).

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	called "stacking". The DEIS explains (at Appendix AB-J Attachment J.1 at J.1-2):"Compared to more traditional model averaging approaches stacking differs in terms of how model weights are assigned. Instead of calculating model weights based on the relative predictive ability for each individual model where the best model for prediction would be given the highest weight the model weights estimated through stacking minimize the LOO mean squared error of the resulting averaged posterior predictive distribution across models. In other words stacking was used to estimate the optimal linear combination of model weights for averaging predictive distributions across the model set (Yao et al. 2018). Hence the model with the largest stacking weight does not necessarily have the highest predictive score compared to other models in the set." (emphasis added). Thus the DEIS's predictions of Longfin Smelt response to different operational alternatives is based on a weighted average of multiple models where the weights applied do not correspond to the predictive ability of the relevant model. Furthermore the final "stacked" model includes models where the flow variable is measured from December-May Delta outflow (as per CDFW 2010; see also Nobriga and Rosenfield 2016) and other models where outflow is measured from March-May. This means that flow during the months of March April and May are differentially represented in the final model the DEIS provides no explanation of or justification for this emphasis on March-May flows. Third the models rely on randomization procedures used to generate "probability distributions" for the modeled results. (DEIS Appendix 6B at 6B-395 thru 6B-403). These randomizations confound variability from multiple sources including those that have nothing to do with the effect of project alternatives. These "probability distributions" for model predictions are then inappropriately compared to the differences in means for several water year types across	The commenter's support for Alternative 3 is noted.

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	different alternatives; these water year-types include such as variation in abundance over the entire Longfin Smelt data series. The resulting analysis is used to imply that differences between alternatives are small compared to the variability in population estimates this is highly misleading. These overwrought statistical machinations obscure very simple facts (1) Delta outflow is the only known variable affecting changes in Longfin Smelt abundance from year to year that is affected by combined CVP/SWP operations (USFWS 2024b and sources cited therein) and (2) the effect of Delta outflow on the Longfin Smelt population is most likely due to its relationship with recruitment of young-of-year fish a relationship that has not changed in five decades of sampling data (Nobriga and Rosenfield 2016).] into a single predictive model. This model indicates that the Longfin Smelt population is likely to decline versus the unacceptable NAA in all years for Alternative 1 and almost all years for Alternative 4 (DEIS Appendix AB-J Winter and Spring Pulses and Delta Outflow Attachment J.1 Table J.1-3). Three of the four Alternative 2 variants are estimated to result in Longfin Smelt abundance less than or equal to the NAA in the vast majority of years. Only Alternative 3 is expected to produce substantial increases in the Longfin Smelt population overall and it accomplishes this in every water year type. Figure 2 below illustrates the mean difference between each alternative and the NAA by water year type. [See original comment for a bar graph on Modeled Change from NAA in Longfin Smelt abundance Across CVP LTO Alternatives] Figure 2: The mean percentage difference between estimated annual Longfin Smelt Fall Midwater Trawl abundance indices and the NAA in each water-year type. Positive values indicate that an alternative is expected to produce more Longfin Smelt in a given water year type than the NAA on average. Source data from DEIS Appendix AB-J attachment J.1 provided by the U.S.	

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	Bureau of Reclamation. Moreover a proper comparison of alternatives (i.e. comparing the differences in predicted annual Longfin Smelt abundance indices among alternatives) shows that the relative performance of different alternatives is very consistent. The fact that the Longfin Smelt population displays high variance (and that the 3-4 order of magnitude decline over time adds to this variance) does not mean that there is any uncertainty regarding the relative performance of Alternative 3 as compared to NAA. Notwithstanding the DEIS's statistically inappropriate efforts to minimize the different effects of the alternatives by comparing them to the variance within alternatives (e.g. as in DEIS Appendix AB-J attachment J Figure J.1-2) Alternative 3 is superior to the NAA in every year modeled (Figure 3). The other alternatives are barely different from the NAA during drier years (Figure 2) and when the estimated population is low (Figure 3) and their performance decreases relative to NAA as conditions become wetter and/or as the estimated annual population index increases. Under the NAA and all alternatives other than Alternative 3 the Bay-Delta Longfin Smelt population is likely to continue to decline to extirpation in the near future. Such an outcome is inconsistent with the requirements of both state and federal Endangered Species Acts.[See original comment for a dot plot on Modeled Change from NAA in Longfin Smelt Abundance Across CVP LTO Alternatives] Figure 3: The percentage difference between the estimated annual Longfin Smelt Fall Midwater Trawl abundance index and the NAA in each year as a function of the modeled log(FMWT index) for the NAA (i.e. each year is represented by points for each alternative arranged vertically). Positive values indicate that an alternative is expected to produce more Longfin Smelt in a given year than the NAA. The positive effect of Alternative 3 operations increases in absolute and relative terms as the estimated FMWT abundance index increases.	

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	Performance of other alternatives tend to decrease relative to the NAA as the estimated FMWT abundance index increases. Furthermore these results likely underestimate the true impact on Longfin Smelt of combined proposed project operations particularly for alternatives that allow for TUCOs because the modeling assumes that requirements of the Bay-Delta Water Quality Control Plan and D-1641 and federal biological opinions will be enforced in all years. This has not been the case historically (See e.g. Reis et al. 2019). The DEIS must disclose that the NAA is likely to lead to extinction of the Bay-Delta Longfin Smelt population in the near future. The results of the Longfin Smelt-Delta Outflow analysis must be depicted in a way that informs readers of the likely catastrophic outcomes of the Proposed Action and Alternatives 1 and 4 which all perform similarly to the NAA. The DEIS must disclose the sizeable potential benefits of Alternative 3 operations relative to the NAA. These disclosures should be made in transparent text and visually through comparison of the differences in predicted Longfin Smelt abundance in each year that arise from differences among alternatives. Natural variance in projected Longfin Smelt abundance that has nothing to do with differences among alternatives (e.g. variance across years within a water-year type) is irrelevant to evaluation of the Proposed Action.	
68-58	Entrainment Mortality model – juvenile The DEIS's projected response of Longfin Smelt abundance to changes in Delta Outflow does not account for the massive increases in entrainment mortality of Longfin Smelt juveniles predicted to result from implementation of the Proposed Action (Table 3). Again Alternative 3 is the environmentally superior alternative in all water year types. Salvage under the Proposed Action is expected to increase substantially in the vast majority	Support for Alternative 3 has been noted. Reclamation provided the longfin smelt-outflow analysis (Attachment J.1, Longfin Smelt Outflow) to the DSP peer review panel who provided input about the statistical methods and results. The approach to the analysis was deemed "statistically sounds and attempts to quantify uncertainty using several techniques… The overall fit is encouraging as a description of

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	of years under every variant of Alternative 2. In fact salvage (and related mortality) increase so much in wetter years that the Proposed Action would invert the established pattern in which Longfin Smelt were at greatest risk of entrainment in Dry and Critical years (Grimaldo et al. 2009; Rosenfield 2010); rather entrainment-related mortality is now predicted to be greatest in wetter years. This continues a shift from the historical condition (under the 2008/2009 biological opinions) that began with huge increases in expected Longfin Smelt juvenile entrainment (up to 576% higher salvage in Wet years) under the 2019 biological opinion and 2020 ITP (see for example CDWR 2019 Table 4.4-13 and Figure 4.4-56 at 4-185. The anticipated increases in entrainment-related mortality of Longfin Smelt may change entrainment from a potential episodic impact on the population (Rosenfield 2010) to a chronic threat to Longfin Smelt population viability. Table 3: Predicted salvage of juvenile Longfin Smelt under the NAA and operational alternatives considered in the DEIS by water year type. Copied from Appendix AB-I attachment I.4. [See original comment for a table on May predicted Longfin Smelt salvage by water year type (WYT) for modeled scenarios] The DEIS must be revised to disclose the potential harm to Longfin Smelt viability caused by the high rates of Longfin Smelt mortality from entrainment that are expected under the NAA relative to historical conditions. Furthermore the DEIS must disclose that mortality due to this mechanism is likely to increase several-fold under the Proposed Action.	historical trends…" The No Action Alternative is the appropriate comparison for alternatives, and comparison between alternatives is not described. This line of evidence is documented in the Draft EIS to show that longfin smelt abundance is similar between Alternative 2 phases and the No Action Alternative and varies slightly (±5%) depending on water year type and specific phase (Appendix O, Section O.6.12.1). Abundance under Alternative 3 relative to the No Action Alternative is estimated to be higher regardless of water year type (Appendix O.6.13.1). Additionally, Attachment I.4, Longfin Smelt-OMR Relationship, details several assumptions and points of uncertainty regarding the model. The model is meant to compare juvenile longfin smelt salvage across different alternatives and is not a predictive model.
68-59	Entrainment Mortality model – larvae The DEIS fails to adequately analyze entrainment of larval Longfin Smelt or to disclose the impact of entrainment-related larval mortality on the Longfin Smelt population as a whole. The state of California acknowledges that larval Longfin Smelt are	Please refer to Standard Response 5, Adequacy of Analysis and Mitigation. Entrainment impacts on longfin smelt are included in Section O.1.9.1 under the Affected Environment.

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	more vulnerable to entrainment- related mortality than juveniles (CDWR 2019 at 6-96). Yet it fails to adequately address the major increases in larval entrainment expected under the NAA with respect to the previous baseline (2008/2009 biological opinions) or under the Proposed Action. Instead the DEIS relies on findings of Kimmerer and Gross (2022) to assert that larval entrainment will average 1.5% of the population (DEIS BA Chapter 10 at p. 10-51). No rationale is provided which would explain why chronic loss of 1.5% of this one life stage via this one mechanism does not represent a significant impact to the population. Kimmerer and Gross (2022) underestimate the likely magnitude of larval entrainment in several ways. First that paper studied larval Longfin Smelt exposure to entrainment based on data from 2009-2020. But the rules that governed Delta flows exports and entrainment risk during that period (the 2008/2009 operational baseline) have now changed in ways that are expected to increase entrainment- related mortality of larval Longfin Smelt (CDWR 2019 Table 4.4-8a at 4-173 shows estimated increases in entrainment of particles that serve as proxies for larval fish). Second they assumed that larval Longfin Smelt were only susceptible to entrainment for approximately 7-13 days post hatching but recent data reveal that many larval Longfin Smelt remain in low salinity habitats which are often within the area affected by water exports for 100-150 days (Lewis et al. 2019 at p. 9 and at pp. 48-83 of the PDF). Third Kimmerer and Gross (2002) estimated direct entrainment only during January-March but the DEIS and BA show that Longfin Smelt larvae are present in March-June (Biological Assessment Appendix AB Chapter 10 Figure 10-3) although the BA's estimate of larval Longfin Smelt relative abundance after March is understated. Larvae remain in the upper estuary through at least May (SWRCB 2010 Table 2 at p. 45; CDFW 2010) and likely into June (CDFW 2010; Rosenfield 2010; Lewis et al. 2019 at p. 9	Additionally, Refer to Appendix O.3 for the analysis of the No Action Alternative as it pertains to Aquatic Resources. More specifically, see Section O.3.6 for potential impacts to longfin smelt entrainment from the No Action Alternative, through the component Tracy Fish Collection Facility and John E. Skinner Delta Fish Protective Facility. Attachment I.8 Particle Tracking Fate Modeling of Larval Smelt Entrainment provides further detail on assumptions underlying the analysis. Please see section I.8.2.3 PTM Particle Behavior and section I.8.3 Assumptions/Uncertainty.

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	of the PDF). Thus to compare estimated changes in Longfin Smelt larval entrainment mortality in the DEIS one must look at particle entrainment estimates for March-June.	
68-60	In general we disagree that Longfin Smelt larval entrainment risk is completely captured by studying neutrally buoyant particles as Longfin Smelt larvae do exhibit behavior with respect to depth (Kimmerer personal communication). Nevertheless the only means of estimating the distribution of Longfin Smelt larvae with respect to the alternatives are modeling studies of neutrally buoyant particles injected where Longfin Smelt are believed to spawn (Sacramento River (Appendix AB-I Attachment I.8 Particle Tracking Fate Modeling of Larval Smelt Entrainment Table I.8-42) West Delta Table (I.8-45) and Suisun Bay (Table I.8-46)). These tables consistently show that the number of particles entrained (or for fish killed) in the export facilities decreases substantially (up to 100%) in every inflow-combination bin [Footnote 24: The DEIS's reliance on qualitative bins of Sacramento*San Joaquin inflow is generally uninformative as there is no indication how often these bins occur over the modelled time period or how their frequency is expected to differ across alternatives (which modify flow levels in the two rivers). The DEIS should categorize years by a measure of unimpaired flow which will allow for apples-to-apples comparisons of outcomes based on the frequency of year types that is consistent among alternatives.] under Alternative 3; no other alternative shows this magnitude or consistency of reduced entrainment. Alternative 1 typically showed the greatest increases in particle entrainment. Entrainment under the Alternative 2 variant that includes all VAs is expected to increase in more year-type bins than it decreases and the increases are generally of higher magnitude than the decreases. These increases are on top of massive increases in	Entrainment impacts on longfin smelt are included in Section O.1.9.1 under the Affected Environment. Additionally, Refer to Appendix, Section O.3 for the analysis of the No Action Alternative as it pertains to Aquatic Resources. More specifically, see Section O.3.6 for potential impacts to longfin smelt entrainment from the No Action Alternative, through the component Tracy Fish Collection. Attachment I.8 Particle Tracking Fate Modeling of Larval Smelt Entrainment provides further detail on assumptions underlying the analysis. Please see section I.8.2.3 PTM Particle Behavior and section I.8.3 Assumptions/Uncertainty. The appropriate NEPA basis of comparison is the No Action. Multiple lines of evidence including literature, observations, and models are used to evaluate Longfin smelt entrainment risk and identified net negative OMR flows increase entrainment risk (Appendix AB – Chapter 10 Longfin Smelt). No life cycle model exists for putting different sources of mortality of different lifestages into context for the population. The occurrence of different Sacrament-San Joaquin flow bins (sample sizes) is present in Attachment I.3, Delta Export Zone of Influence. Rationale for the support of Alternative 3 is noted.

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	particle entrainment predicted to occur under the NAA versus the previous baseline (2008/2009 Biological opinions). According to modeling by DWR particle entrainment rates increased by over 200-300% in some water year types during April and May under the state's proposed operations in 2019 which is today's baseline as compared to the previous baseline (CDWR 2019 Table 4.4-8a at p. 4-173).The DEIS must disclose the potential effect of larval entrainment under the NAA (which is not adequately represented by Kimmerer and Gross (2022)). It must also disclose how predicted increases in larval entrainment under some hydrological conditions are expected to impact components of viability (i.e. abundance and productivity) for the Bay-Delta's endangered Longfin Smelt population.	
68-61	4. White Sturgeon. In response to a petition from some of our organizations (Baykeeper et al. 2023) the California Fish and Game Commission recently declared California White Sturgeon to be a candidate for listing under the state Endangered Species Act (CESA). This means that this population receives full protection under CESA until CDFW completes a status review. White Sturgeon harvest is now prohibited. A parallel federal petition is pending. It is thus appropriate for the DEIS to analyze potential impacts of proposed combined project operations on White Sturgeon and to minimize and fully mitigate those impacts that are expected to result from those operations. The only known spawning population of White Sturgeon in California is found in the San Francisco Bay watershed. Most spawning occurs in the Sacramento River although NMFS (17388 Federal Register/Vol. 70 No. 65 citing Beamesderfer et al. 2004) CDFW (2015) and Heublein et al. (2017) indicate that White Sturgeon may spawn in the Feather River. Spawning has also been detected in recent years in the San Joaquin River mainstem though reproductive success has not been confirmed	Regarding the white sturgeon-outflow analysis, Reclamation relied on Fish (2010), which uses a log-linear relationship. Because a rigorous manipulative experiment to determine exact causality and shape of the relationship is not possible, all relationships are based on existing data. The historical record (see Figure 3 in Fish 2010, where the log of 37,000 cfs is 4.57 on the x-axis) indicates that there have been several years of white sturgeon recruitment with flows lower than 37,000 cfs, some of which were quite high (e.g., 1984, 1993, and 1997). Therefore, Reclamation used a log-linear relationship for this analysis instead of a threshold approach. Potential effects of Alternatives 1, 3, and 4 (as well as the No Action Alternative and Alternative 2) on green sturgeon were analyzed and reported in Draft EIS Attachment J.2, Sturgeon Year Class Index and Delta Outflow. The current status and affected environment of white sturgeon are described in Appendix O, Sections O.1.3.2, O.1.6.2, O.1.8.2, and O.1.9.1. Impacts on white sturgeon are described in Appendix O,

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	(Jackson et al. 2016). The California White Sturgeon population is declining and imperiled. CDFW states "Annual recruitment of white sturgeon in California appears to have decreased since the early 1980s." (2015 at p. 224). Similarly Blackburn et al. observed that "Few age-0 and age-1 White Sturgeon have been sampled since 1998 and only two strong year-classes (2006 and 2011) have been documented in the last 19 years [through 2016]"; they concluded "[c]ontinued poor recruitment has the potential to put the population at risk." (2019 at pp. 897-898). In 2022 and 2023 large numbers of White Sturgeon were killed by a harmful algal bloom in San Francisco Bay which further degraded the viability of this imperiled fish (CDFW 2023b). One of the main threats to California White Sturgeon is the diversion of fresh water from major Central Valley rivers where they spawn incubate and rear as larvae (or did so historically) and diversion from the Delta which is habitat for juveniles sub-adults and adults. Above certain flow thresholds recruitment of juvenile White Sturgeon is positively correlated with high river flows and Delta outflow during spring and early summer months (Israel et al. 2009; CDFW 2015 2023b; SWRCB 2017; see also AFRP 2001; Moyle 2002; Willis et al. 2022). Below the flow threshold recruitment of White Sturgeon is very low or non-existent. As UC Davis Professor Dr. Andrew Rypel recently explained: "Most of our native fishes rely on those high- flow years for recruitment and white sturgeon are the extreme example of that. They only recruit on the highest of flow years." (https://mavensnotebook.com/2024/07/11/feature-a-bigger-older- fish-gasping-for-more-water-white-sturgeon-slipping-away/). The connection between White Sturgeon reproductive success and high river flows is also known from other watersheds (Parsley and Beckman 1994). Successful cohort formation for California White Sturgeon which corresponds to years of high spring-summer river flows into and out of the	Sections O.4.15, O.5.15, O.6.15, and O.7.15, as well as Table O-282 within Section O.8. The current status and affected environment of green sturgeon, southern DPS are described in Appendix O, Sections O.1.3.2, O.1.8.2, and O.1.9.1. Impacts on green sturgeon, southern DPS are described in Chapter 12, within the Bay-Delta and Sacramento River sections, and Appendix O, Sections O.4.11, O.5.11, O.6.11, and O.7.11, as well as Table O-282 within Section O.8. White sturgeon's candidacy as an endangered species under CESA is noted in the affected environment in Section O.1.3.2. Reclamation and the CVP are not subject to requirements under CESA. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. Support for Alternative 3 has been noted. Fish, M. A. 2010. A White Sturgeon Year-Class Index for the San Francisco Estuary and Its Relation to Delta Outflow. IEP Newsletter 23(2):80–84. Spring.

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	Delta (Moyle 2002; Fish 2010; CDFW 2015 citing Kohlhorst et al. 1991 and Schaffter and Kohlhorst 1999; SWRCB 2017). Chronically low river flows and reductions in freshwater inflow to San Francisco Bay (also referred to as Delta outflow) resulting from water diversion and storage operations have been implicated in the decline of California White Sturgeon (CDFW 2015; Jackson et al. 2016; SWRCB 2017; Baykeeper et al. 2023).The State Water Board analyzed the relationship between recruitment of juvenile White Sturgeon and average freshwater Delta outflow in March-July (SWRCB 2017). That analysis found that recruitment of juvenile White Sturgeon was much less likely to occur when March-July average flows were below certain thresholds (see Figures 3.6-2 and 3.6-3 of SWRCB 2017 at pp. 3-65) and that monthly average Delta outflows > 37000 cfs during this period were necessary to protect the public trust benefits of California White Sturgeon. From 1980-1999 average March- July Delta outflows >37000 cfs occurred 30 percent of the time (6 out of 20 years). Since 1999 flows of this magnitude have occurred only 17.4 percent of the time (4 out of 23 years). Reis et al. (2019 Table 5 at 12) show that the frequency of wet and above average hydrology (as they measured it) experienced by White Sturgeon in the Bay's watershed is reduced by water diversions and storage including operations of the CVP and SWP. Furthermore Baykeeper et al. (2023) showed that recruitment of YOY White Sturgeon was very low or zero when Sacramento River flows ("SAC" + "YOLO" variables in Dayflow) average < 30000 cfs between April and July. The DEIS's analysis of White Sturgeon response to alternative operations of the CVP Appendix AB-J Winter and Spring Pulses and Delta Outflow Attachment J.2 is flawed. Specifically the DEIS's method for calculating Delta Outflow impacts of the Proposed Action on White Sturgeon (DEIS Appendix 6B at 6B-408) assumes that the relationship between production of White Sturgeon juveniles	

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	and Delta outflow is log-linear across the range of inflows. However because it is highly unlikely that White Sturgeon reproduce successfully in drier year types projected effects of alternative operations in those year types are erroneous and reveal flaws in the analysis that would tend to understate the true impact of the Proposed Action. Because the DEIS applies a log-linear regression across the range of flows it estimates that water project operations will affect production of juvenile White Sturgeon across the range of flows. Ignoring the non-linear nature of the flow-juvenile production relationship also means that the DEIS's regression relationship is lower magnitude ("flatter") than the actual relationship thus it likely underestimates the effect of high flows on juvenile production. As a result the DEIS's analysis likely underestimates the Proposed Action's negative effects on White Sturgeon production in wetter years relative to the baseline. The same problem is likely to apply to the DEIS's analysis of Green Sturgeon (DEIS Appendix AB Chapter 8). Despite these flaws in estimation of the Proposed Action's effects on the Bay's imperiled White Sturgeon population it is likely that the analysis reflects the relative impact of proposed operations with respect to the No Action Alternative. Except for Alternative 3 all project alternatives (and Proposed Action variants) perform worse than the NAA in Wet years when the bulk of White Sturgeon juvenile production is expected to occur (Table J.2-5). A relatively small amount of White Sturgeon recruitment is expected in some "Above Normal" water years. Although the variant of the Proposed Action that includes all VAs is expected to perform slightly better than the NAA under these conditions the overall expected change under this variant is still negative with respect to the NAA when the effects in Wet Years and Above Normal years are considered together (This is especially true because "Wet" years are expected to occur more frequently than "Above	

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	Normal" years). Again no recruitment of Age 0 juvenile White Sturgeon is expected in years that are drier than "Above Normal" but even if it did Table J.2-5 demonstrates that all alternatives except for Alternative 3 are worse for White Sturgeon than the NAA on average. [Footnote 25: The same general pattern applies to the DEIS's analysis of Green Sturgeon Alternative 2 variants perform worse than the NAA (Appendix AB Chapter 8 Green Sturgeon Table 8-10). Alternatives 1 3 and 4 were not analyzed in the Green Sturgeon appendix.] By contrast Alternative 3 is expected to produce significant proportional increases in White Sturgeon production as compared to the NAA. Because of the population modeling errors described above the DEIS probably underestimates the differences (positive and negative) between the alternatives and the NAA. The DEIS must be revised to disclose the precarious and deteriorating conservation status of White Sturgeon under the NAA and the likely negative effects of the Proposed Action on both White Sturgeon and the threatened Green Sturgeon DPS. Furthermore the DEIS's methodology should be revised to account for the non-linear nature of the flow-recruitment relationship for White Sturgeon and Green Sturgeon where the effect of flow changes materializes only in the wetter end of the hydrological spectrum.	
68-62	B. The Proposed Action is Fundamentally Flawed Because it includes The Proposed Voluntary Agreements. The Proposed Action is deficient in relying on the proposed Voluntary Agreements ("VAs") because in addition to the Proposed Action's adverse impacts to listed species discussed in the previous section the VAs are not reasonably certain to occur the purported magnitude and benefits of VA-associated flows are incorrectly described and even if implemented the VAs would be likely to be short-term in duration. Because of these	Refer to Standard Response 10, Voluntary Agreements, regarding concerns related to the voluntary agreements and how they are represented in Alternative 2.

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	flaws reliance on the VA proposal is unlawful and the VAs should not be included as a component of the alternatives in the DEIS.	
68-63	1. The Voluntary Agreements are not reasonably certain to occur. The Proposed Action in the DEIS assumes a set of fully developed and executed VAs that have been analyzed and accepted by the State Water Board. These assumptions are highly questionable. In fact the VAs are not reasonably certain to occur. See e.g. Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv. 524 F.3d 917 936 & n.17 (9th Cir. 2008). The VA proposal has been in development for more than a decade and proponents have still not produced a complete proposal as of September 2024. See Voluntary Agreement Timeline Attachment 4. Given this track record there is no reason to assume that the VA effort will ever produce a complete package. Even if a complete package is eventually produced it could be years in the future. Missing elements include but are not limited to a final funding agreement enforcement agreements a detailed proposal for tribal engagement in decision-making a detailed operations plan for the Delta SMART biological goals and objectives and technical details such as "which reservoirs may be reoperated which fields will be fallowed when reservoirs can refill and when groundwater substitution will occur have not been fully specified." See SWRCB 2023 at p. G3a- 1. Further it is not certain that the State Water Board will approve the VA proposal. The Board's most recent description of its plan for updating Bay-Delta water quality standards (SWRCB 2023) describes "Proposed Plan Amendments" that do not include the VAs the VAs are described as an alternative to the Proposed Plan Amendments. Furthermore the proposed VAs are any final VA proposal. The proposed Bay-Delta VA is more complicated than any previous	Refer to Standard Response 10, Voluntary Agreements, regarding voluntary agreements representation in Alternative 2.

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	effort to manage a discretionary block of environmental water anywhere in the nation. The attached Building Blocks white paper documents significant challenges that have faced 18 other efforts to do so most of which are located in California. [Footnote 26: Building Blocks Tools and Lessons for Designing a Block of Water for the Environment. Barry Nelson Defenders of Wildlife. June 2022.] Compared to all of the other similar projects across the nation the VA proposal is broader in geographic scope broader in terms of the species and beneficial uses it would address and broader in terms of the complexity of the water management systems involved. Yet all previous environmental block of water efforts in California despite the fact that they were far less complex than the Bay-Delta VA proposal have encountered major implementation challenges. In some cases those challenges have dramatically reduced or even eliminated entirely anticipated environmental benefits. The problems faced by previous environmental blocks of water have included a failure to purchase anticipated environmental water accounting issues related to the program's environmental baseline inadequate funding unanticipated impacts caused by changes in project operations and more. All of these problems apply to the Bay-Delta VA proposal clearly demonstrating that the anticipated VA environmental benefits are not reasonably certain to occur.	
68-64	Beyond the challenges identified in the Building Blocks report the VA proposal also contains numerous additional flaws that reduce the likelihood of anticipated environmental flows and benefits: -The VA accounting proposal clearly allows future increases in demand or the development of new storage or conveyance facilities to reduce environmental water over time. As currently proposed the VAs would provide no protection for current	The proposed modifications to the long-term operation of the CVP and SWP are in part to harmonize requirements imposed on the SWP by their ITP, as appropriate. Changes to the Proposed Action resulting in effects not previously analyzed is one of the four reinitiation triggers of the ESA. Refer to Standard Response 4, Alternatives Formulation, regarding selection of the preferred alternative.

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	environmental flows that are greater than current regulatory minimums. Future water diversions could capture these unregulated flows effectively reducing environmental flows and harming listed species. (See Alternative 6a in SWRCB Draft Staff Report pp. 7.2-15 and 7.2-16). Given current proposals for large scale new diversions related to the Delta tunnel Sites reservoir and other proposed new storage facilities it is highly likely that these additional diversions which are allowed under the VAs will significantly reduce environmental flows during the term of the final Biological Opinions. - Given the current focus on wet season diversions to rechange groundwater basins related to the implementation of the Sustainable Groundwater Management Act the above flaw in the VA accounting proposal which does not protect existing environmental flows could allow anticipated environmental water to be reduced significantly during the term of the final Biological Opinions. - The flows promised in the American River VA could be provided in as few as 3 of the 8 years of the VA's initial term. In no case would VA environmental flows be provided in more than 6 of the 8 years. (See Global Agreement to the Healthy Rivers and Landscapes Program in the Bay-Delta March 29 2024 Draft Appendix 1 Sec. 1.1.1). - Alternative 2a includes the use of Temporary Urgency Change Petitions (TUCPs) and Temporary Urgency Change Orders during future droughts. See p. E-67. Repeated approval of these TUCPs has allowed Board CESA and related ESA flow requirements to be waived in 6 of the past 10 years. This is particularly important given the impacts on Delta Smelt winter run and spring run Chinook salmon white sturgeon and other listed species as well as fall run Chinook salmon during droughts. TUCPs in the future could reduce environmental flows to a level below that assumed in the DEIS. As a result the total	The Governance Structure proposed for Alternative 2B contains the flexibility to include additional entities as necessary. For example, the Draft EIS describes that the SHOT may convene relevant technical teams to support Shasta or system-wide policy decisions. WAPA is included in the Sacramento River Temperature and Flow Technical Group (SRG). As shown in Figure E-20 in Appendix E, Draft Alternatives, to the Draft EIS, this group has a direct relationship for elevation and decision-making with the SHOT, which has a direct relationship for elevation and decision-making with the Directors Group. The commenter's input regarding the function of the governance groups is noted and included in the record for consideration by decisionmakers. Refer to Section E.5.16 of Appendix E, Draft Alternatives, to the Draft EIS for a description of the purposes of CVP/SWP governance. All the alternatives, including the No Action Alternative, include the continued implementation of the 2000 Trinity ROD flows. Alternatives 2 and 2B were developed in coordination with the resource agencies, including USFWS, NMFS, CDFW and DWR. Please refer to Chapter 3, Alternatives, and Appendix E, Draft Alternatives, for detailed information of all of the alternatives, including Alternatives 2 and 2B. Refer also to Standard Response 10, Voluntary Agreements, regarding voluntary agreements representation in Alternatives 2 and 2B. Reclamation believes that Alternative 2B meets the screening

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	environmental flows in the VA package and the DEIS's Proposed Action including existing regulatory flow requirements are unlikely to occur. - The VA proposal has no adequate enforcement mechanism in the likely event that this effort fails to produce anticipated environmental water. For example the VAs do not require annual much less real-time or seasonal accounting of flows so there is no way to ensure that the pledged water arrives as promised or when it is needed by imperiled fish and wildlife. - The VA proposal relies heavily on long-term modelling not real-time real-world conditions to account for environmental water. Given the experiences with the Environmental Water Account a modelling approach is inadequate to ensure that environmental water is provided as anticipated. - The current VA proposal would not begin a comprehensive evaluation of the implementation of the VA program until year 6. As a result even if the VAs were to fail comprehensively that failure might not be adequately detected reported summarized and analyzed until year 6 or later. For all of these reasons even if the State Water Board were to approve the VAs the amount of environmental water that is described in the VA proposal and which is uncritically repeated in the DEIS is not reasonably certain to occur. The fundamental problems above are not adequately analyzed in the DEIS. Even if the VA proposal were eventually to be finalized approved and implemented the uncertainties regarding the final VA proposal and the implementation challenges that have faced all other similar "environmental block of water" efforts clearly demonstrate that the final "on the ground" benefits and/or impacts of the VAs cannot be adequately evaluated at this time.	criteria, including feasibility. Please refer to Standard Response 9, Climate Change, regarding consideration of climate change in the analysis provided in the EIS. Reclamation invited 19 Tribes to be a cooperating agency for development of the Draft EIS. None accepted the invitation. Support for Alternative 3 is noted. Refer to Standard Response 10, Voluntary Agreements, regarding voluntary agreements represented in Alternative 2 and Alternative 2B. All the alternatives, including the No Action Alternative, include the continued implementation of the 2000 Trinity ROD flows. As a result of recent scientific findings, including the 2024 draft USFWS Biological Opinion, Reclamation has modified Alternative 4 to remove the Fall X2 requirement. In addition, Reclamation has conducted a Summer X2 sensitivity analysis that includes above normal wet years, export reductions, releases from storage, and Fall X2 location at 85 km. A June action that uses a one-month block of water equivalent to what had been used for Fall X2, Delta Outflow no greater than 10,000 cfs (split between CVP and SWP in accordance with COA) and using both export reductions and storage withdrawals to meet outflow requirements. The No Action Alternative and Alternative 2 do include the Fall X2 provision as described in the 2019 USFWS Biological Opinion. Please refer to Standard Response 11, Summer Fall Habitat Action, for additional information regarding a summer and fall habitat action. The EIS describes how Alternative 2 was developed and does not indicate that there is pre-commitment to any one outcome or which alternative will be selected and documented in the Record of Decision. Moreover, an important distinction is that Alternative 2 is a consensus proposal to be submitted for consultation and analysis pursuant to NEPA, not an alternative that the agencies agreed in advance would be implemented.

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		Members of the public and other cooperating agencies have had opportunities to participate in the EIS and alternatives process. Refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of alternatives, and Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding public outreach during the NEPA process. Modeling for Alternative 2 has been updated in the Final EIS to include the assumptions and actions described under Alternative 2B (the Preferred Alternative). Impacts of each phase of Alternative 2 are addressed in comparison to the No Action Alternative in Chapters 4 through 21 of the Draft EIS and their corresponding appendices. Section E.5 in Appendix E, Draft Alternatives, states that the phases of Alternative 2 could be used under its implementation and that all four phases are considered in the assessment of Alternative 2 to demonstrate the range of potential impacts. Please refer to Standard Response 10, Voluntary Agreements, regarding voluntary agreements. Regarding consistency in the coordinated operation of the CVP and SWP, as described in Section 2.1 in Chapter 2, Purpose and Need, of the EIS, one of the drivers of the request to reinitiate consultation is to voluntarily harmonize CVP operating criteria, as appropriate, with requirements for the SWP under CESA. Refer to Standard Response 2, Related Regulatory Processes, regarding coordinated NEPA review and ESA studies and processes. Reclamation complies with applicable federal laws and regulations.

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		Reclamation appreciates the SWC offer for collaboration and assistance. As a result of recent scientific findings, including the 2024 draft USFWS Biological Opinion, Reclamation has modified Alternative 4 to remove the Fall X2 requirement. In addition, Reclamation has conducted a Summer X2 sensitivity analysis that includes above normal wet years, export reductions, releases from storage, and fall X2 location at 85 km. A June action that uses a one-month block of water equivalent to what had been used for Fall X2, Delta Outflow no greater than 10,000 cfs (split between CVP and SWP in accordance with COA) and using both export reductions and storage withdrawals to meet outflow requirements. The No Action Alternative and Alternative 2 do include the Fall X2 provision as described in the 2019 USFWS Biological Opinion. Please refer to Standard Response 11, Summer Fall Habitat Action, for additional information regarding a Summer and fall habitat action. Alternative 2 has been updated in coordination with NMFS in a manner consistent with this comment. Regarding the 2018 Bay-Delta Plan, Reclamation complies with applicable federal laws and regulations. The text will be clarified in the EIS regarding the State Water Board participation. NEPA regulations limit the number of pages and favors the use of appendices for technical information. Please refer to Standard Response 1, Reponses to General Comments and Comments about Public Outreach, regarding page limits and structure of the Draft EIS. Given page constraints under NEPA regulations, Chapter 3, Alternatives, is a summary of Appendix E, which provides a more detailed description. Providing

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		a more detailed description does not amount to inconsistencies between Chapter 3 and Appendix E. Tabular information about TDM is provided in Attachment L.2, Egg-to-Fry Survival and Temperature Dependent Mortality. Identification of the bins is fully described by end-of-April and end-of-September storage, and the actions Reclamation will take are also described. Furthermore, the Shasta Framework recognizes the constraints of hydrology and Reclamation's ability to affect water temperatures. Refer to Standard Response 10, Voluntary Agreements, regarding concerns related to the voluntary agreements and how they are represented in Alternative 2. Section E.5 in Appendix E, Draft Alternatives, states that the phases of Alternative 2 could be used under its implementation and that all four phases are considered in the assessment of Alternative 2 to demonstrate the range of potential impacts. As described in Chapter 2, Purpose and Need, Section 2.1 of the EIS, one of the drivers of the request to reinitiate consultation is to voluntarily harmonize CVP operating criteria, as appropriate, with requirements for the SWP under CESA. Refer to Standard Response 2, Related Regulatory Processes, regarding coordinated NEPA review and ESA studies and processes. Reclamation complies with applicable federal laws and regulations. Refer to Standard Response 7, Aquatic Resources, regarding general concern for adverse effects on aquatic resources that could potentially result from the alternatives.
68-65	2. The description in the DEIS of the Voluntary Agreement proposal for Delta flows is misleading. The DEIS includes a table describing the claimed new environmental water to be provided by the CVP and SWP. (See Appendix AB p. 3-68 Table 3-12). That table also summarizes the "Total VA Outflow by All VA	Refer to Standard Response 10, Voluntary Agreements, regarding general concerns about voluntary agreements.

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	Parties." However the State Water Board's analysis indicates that the VAs are likely to result in lower Delta outflows in Wet years than would have occurred under that agency's baseline which incorporates the 2008/2009 Biological Opinion RPAs rather than the invalid 2019 BiOp. (See SWRCB 2023 Chapter 9 Table 9.5-41. As discussed more below the [sic]). The VAs could decrease environmental flows during critical dry years particularly relative to the current the 2024 Interim Operations Plan which is being implemented at the direction of the federal court. This could be the case even if the VAs were to provide all of the water they currently promise and as discussed above this is far from certain. Thus the portrayal in the DEIS of potential flow improvements under the VA proposal is misleading.	
68-66	3. The DEIS appears to incorrectly assume that all anticipated Voluntary Agreement environmental flows would benefit listed species. The DEIS appears to assume that flows provided by VA early implementation will be managed to improve spring outflow to benefit listed species. (See Appendix AB p. 3-67). Yet the VA proposal appears to "count" as a VA flow contribution environmental water that is not diverted by the CVP and SWP Delta pumps as a result of causes that are unrelated to environmental protection such as regular or unscheduled maintenance pump/canal/storage failures or capacity limitations or lack of demand. Even if these unplanned changes in operations provide an environmental benefit (and there is no requirement or guarantee that they will) flows bypassed under these circumstances already represent a significant portion of current Delta outflows (Reis et al. 2019) and therefore may not be additive to the baseline. The assumption implicit in the DEIS that all of the anticipated VA water even if it is all actually provided would be managed to achieve maximum benefits for listed species is not reasonable.	Refer to Standard Response 10, Voluntary Agreements, regarding general concern about voluntary agreements.

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68-67	4. The approach included in the DEIS means the VA flows are likely to be in place for only two years. Alternative 2c includes an "early implementation" proposal for the VAs including two years of export reductions by the CVP and SWP. (See Appendix AB p. 3-68 Table 3-12). The DEIS further states that after this early implementation period "Reclamation and DWR will operate consistent with the VAs only if (a) the State Water Board incorporates the VAs as proposed by the VA parties into the WQCP and (b) the VA parties execute the agreements contemplated by the VAs or Reclamation and DWR will operate as described by the Proposed Action but without any of the actions contemplated for 'early implementation' or the VAs if (i) the State Water Board does not incorporate the VAs as proposed by the VA parties into the WQCP or (ii) the VA parties do not execute the agreements contemplated by the VAs." (See Appendix AB p. 3- 69.) As discussed above the DEIS overlooks the fact that the VA process has already been underway for 13 years yet it still has not resulted in a complete proposal. Further the VA process has failed to meet at least 8 self-imposed deadlines during this period. See VA Timeline Fact Sheet Attachment 4. Additionally both NMFS and EPA have concluded in letters to the State Water Board discussed elsewhere that the VAs are not adequate to protect beneficial uses. Given this record it is likely that the VA process will continue to struggle - intentionally or not - to produce a complete package. It is also possible that even if a complete VA package is completed the State Water Board may not approve it. In the event that the Board has not approved the VAs as a part of an update to the Bay-Delta Water Quality Control Plan the initial two-year CVP and SWP Delta export reductions would end. In this case the early implementation component of the Proposed Action would expire without a clear and comprehensive replacement. This scenario suggests that it is possible perhaps likely that the early	Refer to Standard Response 10, Voluntary Agreements, regarding voluntary agreements representation in Alternative 2. The NEPA analysis discloses the effects of the alternatives on a broad range of resources, including endangered species. USFWS and NMFS prepared biological opinions that address the impacts of the proposed action on listed species.

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	implementation actions in Alternative 2c would expire after two years and that the full implementation of VAs anticipated by Alternative 2d would never happen. This could lead to yet another multi-year reconsultation period during which time listed species would suffer from the lack of comprehensive scientifically based and legally sufficient long-term Biological Opinions. This could unnecessarily allow listed species to continue to decline possibly to extinction. The DEIS does not adequately analyze this extinction risk.	
68-68	5. The DEIS does not adequately describe and analyze the VA's status elements potential benefits or potential impacts. The VAs are as discussed elsewhere in this document incomplete after more than a decade of discussions. Further the VA documents that have been released are deeply flawed and potentially damaging. For example as discussed above the VA accounting approach could set the stage for large new diversions that would reduce current environmental flows. In addition many current VA proposals are ambiguous or confusing. The DEIS discussion of alternatives including the discussions of Alternatives 2c and 2d (See DEIS Appendix E p. E-67) fails to adequately describe the VAs including the concerns discussed in this document regarding flaws unreliability and potential impacts as well as the incomplete ambiguous and confusing nature of the components of the VAs that have been released to date. Therefore separate from our concern that the VAs are not reasonably likely to occur the document fails to adequately describe and analyze the VA package as it exists today. It is also important to note that the VA process is currently being legally challenged. On August 23 2023 the U.S. Environmental Protection Agency accepted for investigation a Title VI complaint filed by Buena Vista Rancheria Shingle Springs Band of Miwok Indians Winnemem Wintu Tribe Little Manila Rising	Refer to Standard Response 10, Voluntary Agreements, regarding voluntary agreements representation in Alternative 2.

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	and Restore the Delta (known as the Delta Tribal Environmental Coalition or DTEC)) against the State Water Board for alleged discrimination in the management of California water. At the center of this complaint are the VAs because they were produced in an inequitable and discriminatory processes that excluded Native American Tribes communities of color and the general public from participating in water quality governance. In the Title VI complaint DTEC has publicly called for the suspension of the VAs in the current Bay-Delta Plan update and for a robust public participation policy to ensure a publicly accessible and inclusive process for formulation of any state-sponsored alternative to a regulatory update to the Bay-Delta Plan.	
68-69	IV. The DEIS Fails to Include a Plan for Droughts that Does Not Violate Minimum Water Quality Objectives. The DEIS's treatment of drought management is highly problematic. To begin with the DEIS fails to clarify whether how and under what criteria shortage provisions will be imposed on Sacramento River Settlement Contractors as is needed to comply with the CVPIA's [Central Valley Project Improvement Act] rebalancing of project purpose to include environmental protection and restoration. Furthermore the DEIS fails to identify specific actions that Reclamation will commit to mitigate the highly foreseeable and largely avoidable conditions of drought and avoid the reliance on temporary urgency changes that have characterized drought management in the past fifteen years with devastating consequences for protected species. Instead the DEIS offers up the Drought Toolkit. The voluntary largely qualitative nature of the Drought Toolkit and the lack of authorization or funding for its implementation makes it difficult to assume that it is reasonably likely to occur and therefore reliance on the Drought Toolkit in the DEIS is	The cyclical nature of California hydrology and the resulting effect on federally listed species warrant special consideration for operation during droughts. Although each drought is unique, contingency planning can facilitate an adequate response. California experiences variable climate, and periods of droughts are a recurring feature. Water stored in CVP and SWP reservoirs and groundwater basins mitigate droughts. Multi-year droughts occur when two or more successive years are dry and reservoirs and groundwater reserves are depleted. During these periods, Reclamation in coordination with DWR would develop a Drought and Dry Year Planning Toolkit that focuses on actions to implement as intervention measures during hydrologic years with drought and dry conditions. The Drought Toolkit would be developed within 18 months of executing a Record of Decision. The Drought Toolkit includes actions that can either mitigate or avoid impacts throughout the Central Valley. As discussed in Chapter 3, Alternatives, the Drought Toolkit is a common component of the LTO of the CVP.

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	unlawful. In contrast to the 2019 Biological Opinions which scarcely mentioned droughts and drought operations of the CVP and SWP the DEIS explicitly contemplates drought operations in the analysis of various operations under the alternatives it analyzes. The DEIS frames some of its discussion of drought in the broader context of overall operations and some of its discussion of drought specifically in terms of drought operations. The DEIS proposes under Alternative 2 that future drought operations will differ from previous drought operations through changes in governance. This is most extensively shown in discussion of governance for Shasta Reservoir operations and in discussion of Alternative 2 Sacramento River/Shasta operations. (DEIS Appendix E pp. E-127 and E-67 ff).The DEIS also evaluates prospective changes to Delta operations during droughts by modeling a series of sensitivity analyses of Alternative 2 without "Temporary Urgency Change Petitions" (TUCPs) [Footnote 27: Please note that Temporary Urgency Change Petitions ("TUCPs") once approved and finalized by the State Water Resources Control Board ("State Water Board") become Temporary Urgency Change Orders ("TUCOs"). In these comments TUCPs and TUCOs are referenced and should be considered interchangeable.] for Delta operations. (See first mention of TUCPs in DEIS without even description of the acronym p. 0-24). Yet while there is extensive reporting of model output with and without TUCPs the DEIS does not introduce narrative context of the practice or the issue of TUCPs in the analysis of Alternative 2 leaving the reader to divine or wonder what the importance of the modeling analyses may be. Equally frustrating the DEIS does not describe whether the preferred alternative will or will not rely during droughts on temporary urgency changes to Bay-Delta water quality requirements or what the decision-making process will entail or rely on both as a default and as it happens.	Reclamation would meet and confer with the USFWS, NMFS, DWR, CDFW, and Sacramento River Settlement Contractors on voluntary measures to be considered for implementation if drought conditions continue into the following year, including measures that may be beyond Reclamation and DWR's discretion. If dry conditions continue, Reclamation will regularly meet with this group (and potentially other agencies and organizations) to evaluate current hydrologic conditions and the potential for continued dry conditions that may necessitate the need for development of a drought contingency plan (which may include actions from the Drought Toolkit) for the water year. Situation-specific adjustments to Delta water quality standards would be accomplished by Reclamation and DWR submitting a Temporary Urgency Change Petition (TUCP) to the State Water Resources Control Broad. The purpose is to temporarily modify requirements imposed by Revised Water Right Decision 1641 to meet flow and water quality objectives established in the Bay-Delta Water Quality Control Plan. Alternative 2 proposes a drought toolbox of actions, which includes Temporary Urgency Change Petitions, to respond to current or anticipated drought and dry year conditions (Appendix E, Draft Alternatives, page E-124). Under Alternative 2, during dry conditions, Reclamation could seek a TUCP to preserve storage upstream to provide additional benefits to listed species. Operations under TUCPs are analyzed in the preferred alternative for implementation without further NEPA compliance, provided impacts are within the range analyzed.

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	The analyses of Shasta operations and TUCPs during droughts are necessarily interrelated. In the last decade the Sacramento River downstream of Shasta/Keswick reservoirs and Delta water quality have been the parts of the CVP and SWP system that most gravely broke during droughts causing disastrous effects on fisheries. On a practical level the Board granted TUCPs for Delta operations largely to enable BOR to "conserve" storage in Shasta Reservoir even if that storage did not wind up being actually used for the ostensible purpose of maintaining the coldwater pool. [Footnote 28: The DEIS uses the term "preserve storage" rather than "conserve storage."]	
68-70	A. Shasta Reservoir Operations. 1. Governance. The DEIS's approaches to governance in the Proposed Action are problematic. Alternative 2 proposes "three main coordination forums" for operations of Shasta Reservoir. These include the Shasta Operations Team ("SHOT") "consisting of Agency subdirectors and managers [who] will serve as the management and policy group for decisions related to Shasta Reservoir operations. The team will develop a charter to describe membership and process." (DEIS Appendix E p. E- 128). The SHOT coordinates with the systemwide managers forum the Water Operations Management Team ("WOMT"). Id. Underneath the SHOT is the Sacramento River Temperature and Flow Technical Group ("SRG") a technical team. The SRG consists of representatives from BOR DWR USFWS CDFW NMFS Central Valley Office NMFS Southwest Fisheries Science Center the SWRCB Western Area Power Administration the Yurok Tribe the Hoopa Tribe and the SRS Contractors. (DEIS Appendix E p. E-129). The third "coordination forum" for Shasta operations consists of the "Meet and Confer Group." This group consists of SRS Contractors BOR and NMFS with others by invitation. Its purpose is to meet during dry years "to determine if there is any	The ROD will reflect the decision by the agencies for actions that reduce water supply costs. Reclamation will implement the actions described by the ROD.

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	role for the SRS Contractors in connection with Reclamation's operational decision-making for Shasta Reservoir annual operations in those years. Any mutually agreeable operations resulting from meet and confer discussions must be consistent with the terms of the SRS Contracts and may also be subject to other regulatory approvals." Id. The Meet and Confer Group is established as a result of the "Sacramento River Settlement Contractors Resolution" which is afford its own subsection under that title. (DEIS Appendix E p. E-84). Key elements of the resolution include consistency with the SRS Contracts payment for water deliveries voluntarily foregone and consideration of changes in timing (not volume) of water deliveries. One of the main problems with the proposed governance framework is the apparent limited decision space in which the "coordination forums" may operate. As suggested by the definition of the Meet and Confer Group any reductions in deliveries to the SRS Contractors beyond those specified in their contracts is limited to voluntary actions and those would likely require payment. See id. [Footnote 29: It is also important to note that Alternative 3 proposes a different governance framework that prioritizes inclusion of Native American Tribes and delegates the ultimate decision-making authority for water operational decisions with the fisheries agencies NMFS and USFWS "if the issue is not resolved in the management team process." (See DEIS Appendix E p. E-169).] It is unreasonable to assume therefore that any necessary actions to protect listed species that have any water supply cost will emerge from this process.	
68-71	2. Shasta Storage Framework and "bins" of different storage conditions. Reclamation must disclose how Alternative 2 will ensure that adequate cold water is stored behind Shasta Dam in the winter and spring to provide suitable incubation conditions for listed salmonids and in the fall to create a reasonable	Alternative 2 (Multi-Agency Consensus Alternative) represents actions and tradeoffs made to reach consensus among Reclamation, DWR, USFWS, CDFW, and NMFS. An important distinction is that Alternative 2 is a consensus proposal to be submitted for consultation and analysis pursuant to NEPA, not an

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	likelihood that coldwater storage will be adequate in the following calendar year. The DEIS proposes for Alternative 2 a "Water Temperature and Storage Framework" for Shasta operations that places water years in different "bins" or classifications of water years. Bins are defined by predicted end-of-April (EOA) Shasta storage. (DEIS Appendix E p. E-72). The DEIS states that: - 80 percent of years are "Bin 1" water years in which "hydrologic conditions are generally good and water resources are available to meet demands." (DEIS Appendix E p. E-73). - 11.5 percent of years are "Bin 2" water years in which "hydrologic conditions are more limited than in Bin 1 and adequate water resources are not available to meet all demands." (DEIS Appendix E p. E-76). - 8.5 percent of years are "Bin 3" water years in which "critically dry conditions exist the system is stressed and water resources are not available to meet all demands." (DEIS Appendix E p. E-79). Within each Bin there are two "categories: standard (Bin A) and drought protection (Bin B)." (DEIS Appendix E p. E-72). "The A Bins are years when the expected demand from the reservoir is lower meaning it's likely to result in better drought protection should the following year be dry. The B-bins are intended to increase the priority of storage conservation to address the risk that the ensuing year could be a drought." Id. [See original comment for a table on the Breakdown of Alternative 2 Proposed Shasta Reservoir Bins By Expected End of April (EOA) and End of September (EOS) Shasta Storage] The DEIS does not disclose how Reclamation will achieve its Bin 1 frequency target. The assignment of 80 percent of all water years to "Bin 1" without committing to take actions that will actually ensure such a high frequency of such Bin 1 years is a	alternative that the agencies agreed in advance would be implemented. Refer to Standard Response 10, Voluntary Agreements, regarding voluntary agreements representation in Alternative 2. At this time, Reclamation believes that Alternative 2 meets the screening criteria, including the purpose and need. If Reclamation determines that modifications are needed to the alternative selected in the Record of Decision, Reclamation will then determine whether additional environmental compliance is needed. Refer to Standard Response 4, Alternatives Formulation, regarding the development of alternatives and the reasonable range of alternatives evaluated in the EIS. Acknowledging inter-annual variability of CA hydrology, Shasta action was developed as a framework and actions are based on hydrologic conditions in a specific year, rather than being based on a certain frequency of occurrence of driest years. This framework was developed using CalSim II, which had an 82-year simulation period (1921–2003); Final EIS models use CalSim 3, which has a 100-year simulation period (1921–2021) and captures all the wet periods within that sequence. Within the Shasta Framework, Reclamation acts in all years, expected the wettest periods including "Bin 1 B" water years. Actions increase in dryer water years.

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	strong demonstration of BOR's ongoing denial of the need to proactively address drought in the first Dry or Critically Dry year. Absent the appropriate precautionary actions such assignment fails to understand and respond to the fact that a second sequential Dry or Critically Dry year places the combined CVP and SWP in crisis. The assignment of 80 percent of years to Bin 1 without accompanying significant changes to allocation policy perpetuates a system of crisis management rather than promoting crisis avoidance. It perpetuates an allocation of excessive (but predictable) risk to fisheries and the aquatic ecosystem to enable imprudent and over the long-term excessive allocations of water. Finally without a set of specific actions that will protect coldwater pool such that Bin 1 conditions are achieved in 80% of years it is not reasonably likely that such conditions will actually occur with the intended frequency. This failure to ensure the frequency of Bin 1 conditions renders speculative the DEIS's analysis of the Proposed Action's effect on river temperatures and reservoir discharge during the spawning incubation and rearing season of listed salmonids. A more precautionary approach is warranted particularly in light of the historical fact that Dry or Critically Dry years frequently come back-to-back or in pairs.	
68-72	It is good that the DEIS assigns EOA [End of April] and EOS [End of September] storage numbers to each of the bins and "categories." However the numbers are weighted too heavily to increase water supply and they will not protect listed species. Consider the contrasting approach applying principles that require achievement of water storage requirements in Shasta Reservoir before allocation of water supplies in Alternative 3. By contrast Alternative 3 requires achievement of water storage requirements in Shasta Reservoir before allocation of water supplies. (DEIS Appendix E p. E- 163).	NEPA requires a range of reasonable alternatives to fully inform decisions. Reclamation believes that is healthy and appropriate to include alternatives with different approaches to Shasta Reservoir water temperature management. Refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of alternatives to ensure a range of reasonable alternatives.

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68-73	The DEIS's description of Alternative 2 contains inconsistent unexplained and at times conflicting explanations of whether how and when BOR might impose involuntary delivery shortages on SRS [Sacramento River Settlement] Contractors. As noted above the Central Valley Project Improvement Act of 1992 rebalanced the project purposes of the CVP to include environmental protection and restoration. It is unlikely that either endangered species can be protected or the CVP's specific environmental mandates (such as anadromous fish doubling or refuge water supplies) be achieved without changes to the SRS Contracts under drought conditions. It is notable that the DEIS mentions contractual (25 percent) shortages to SRS Contractors only in the context of Bin 3 water years or only 8.5 percent of all years (DEIS Appendix E p. E-80). Aside from the discussion of Governance and specifically the Meet and Confer Group it is unclear whether and if so how BOR would address deliveries to SRS Contractors outside the voluntary framework of this "coordination forum" and its contemplated voluntary reductions payments in lieu of deliveries and so forth. (See DEIS Appendix E p. E-129 as discussed above). Clarification of these criteria would benefit not only species protection efforts but the SRS Contractors themselves in minimizing their supply uncertainties given defined hydrological conditions.	Please refer to Chapter 2, Purpose and Need, for the purpose and need of this multipurpose project. Refer to Standard Response 4, Alternatives Formulation, for the rigorous approach Reclamation undertook in the formulation of alternatives to ensure a range of reasonable alternatives. Reclamation will be operating consistent with applicable law, contracts, and agreements. Additional specificity on how SRSC deliveries were modeled in each alternative is found in Appendix F, Modeling (page F.1-1-28 and Table F.1-2.1). Appendix H, Water Supply Technical Appendix, shows contract deliveries by alternative for average and dry and critical water years. The CVP and SWP deliveries to contractors and water made available for diversion in Trinity, Sacramento, Clear Creek, and American Rivers watersheds under Alternative 2 are detailed in Table H-10 through Table H-13.
68-74	The DEIS prominently features discussion of fidelity to the SRS [Sacramento River Settlement] Contracts as discussed above. (DEIS Appendix E p. E-84 E-124). However the DEIS also describes Bin 3B as follows: "During Bin 3B years defined as having an EOA [End of April] storage below 3.0 MAF and a projected EOS [End of September] storage less than 2.0 MAF available water supply for diversion under the SRS Contractors is limited to between 75% and 50% of total contract quantities or approximately 1.5 - 1.1 MAF." (DEIS Appendix E p. E-80).	Reclamation believes the DEIS is adequate and legally sufficient. NEPA requires a range of reasonable alternatives to fully inform decisions. Reclamation believes that it is healthy and appropriate to include alternatives with different approaches to Shasta Reservoir water temperature management. Refer to Standard Response 4 Alternatives Formulation for the rigorous approach Reclamation undertook in the formulation of alternatives to ensure a range of reasonable alternatives. Also refer to Chapter 2 Purpose and Need for the purpose and need of this multipurpose project

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	Since the SRS Contracts limit deficiencies to 25 percent in defined "critical" years this suggests some kind of action by BOR to involuntarily limit deliveries to SRS contractors beyond the level defined in the contracts. [Footnote 30: See Defenders of Wildlife letter to the Bureau of Reclamation and U.S. Fish and Wildlife Service "Proposal to Reduce Refuge Water Deliveries as Proposed Action in CVP LTO Consultation Would Hurt Numerous Species and Violate Federal Law" April 24 2023. Defenders never received a response. Therefore we remain concerned the Proposed Action will also in turn involuntarily short mandatory water deliveries to wildlife refuges as required by Congress in the CVPIA.] The DEIS continues: "This reduced volume of available water will be applied to all SRS Contractors collectively and individual contractor reductions may vary based on agreements and transfers between different SRS Contractors. In these years previously described SRS Contractor voluntary actions under their resolution may not be possible due to the very limited supply." (DEIS Appendix E pp. E-80 to E-81). That seems clear. But the DEIS follows with discussion of a scenario in which there is not agreement on allocations to SRS Contractors in which the decision point and the ultimate decision maker are anything but clear: "In situations where appropriate fall and winter flows were discussed and tradeoffs were evaluated but there was not agreement on the implemented flow regime from the SRS Contractors SRS Contractors propose alternative methods to meet obligations to senior water right holders under the SRS Contracts with the SHOT should the following year be a 3B year. Should a similar disagreement occur during a Bin 3B year after the Bin has been designated flows in disagreement will not affect the determination on volume of available water. Under these conditions the likelihood of storage below 2.0 MAF will	Under Alternative 2, Reclamation will coordinate with USFWS to maintain summer deliveries of Level 2 supplies to Sacramento Valley CVPIA refuges to provide essential dry year habitat for Giant Garter Snake, Western Pond Turtle, Tricolored blackbirds and migratory waterfowl in a manner consistent with refuge contracts and agreed upon operational priorities. If conditions remain dry through the fall Reclamation and USFWS will coordinate on how to address instream flow objectives, lake levels and refuge needs. Reclamation will continue to utilize level 4 to supplement supplies for refuges in drier years when storage and coldwater pool are limited. Refer to Standard Response 10, Voluntary Agreements, regarding voluntary agreements representation in Alternative 2. Reclamation does not believe that a supplemental EIS is needed at this time. The EIS is specific to the conditions for determining Bins and the actions that will be taken. Modeling shows the anticipated outcomes from those actions. Reclamation cannot control hydrology nor the sequence of hydrology; therefore, a specific frequency of occurrence cannot be assured. Reclamation can take action based on then current conditions. The EIS identifies Bins based on end of April storage and end of September storage. These bins have numerical targets that provide clear criteria. Appendix F – Modeling Technical Appendix shows how delivery reductions to SRSCs would be implemented. Alternative 2 establishes the SHOT to resolve disagreements on operations. Each party retains their respective rights and responsibilities.

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	increase." (DEIS Appendix E p. E-81). A revised and recirculated DEIS needs to make unequivocally clear: - how BOR will ensure that reservoir storage conditions consistent with Bin 1 will be achieved in at least 80% of years - whether BOR will impose involuntary water delivery shortages on SRS Contractors pursuant to the CVPIA and endangered species needs; - if so under what conditions BOR will impose water delivery shortages on SRS Contractors; and - what the decision-making process for the imposition water delivery shortages on SRS Contractors will be. The extremely limited conditions under which the DEIS contemplates shortages to SRS Contractors is a fundamental flaw in program designed to protect listed species. The level of deliveries to SRS Contractors is unsustainable. It causes a crisis in the overall CVP and SWP system each time there are two or more sequential Dry or Critically Dry years. A more sustainable model is allocations to senior agricultural diverters on the Mokelumne River who take a 35 percent reduction in water deliveries in every "dry" (and not just critically dry) year. Again clarification of these reduction procedures would benefit not only species protection and CVPIA implementation but the SRS Contractors themselves by minimizing their future water supply uncertainties.	Reclamation did not develop the Shasta Framework absent the SRSCs. Reclamation and SRSCs have a long track record of coordinating during extreme droughts. It is reasonable to assume such coordination will continue. The reliability of the action is supported by history and the participation by SRSCs in developing the Shasta Framework to manage future reductions that are planned for in advance.
68-75	B. Delta Operations and the Serial Use of Temporary Urgency Change Petitions (TUCPs). 1. Background. Over the past decade BOR and DWR repeatedly consistently and successfully sought to waive or weaken numerous water quality objectives including minimum required Delta outflow which are the basis of an incorporated into requirements of both the 2008/2009 and the 2019 biological opinions. BOR and DWR also failed repeatedly to meet	The quoted text in Chapter 3, Alternatives, Section 3.5.10 appears to have a typographical error and has been clarified. “Similar to Alternative 2, however” has been stricken. The application for Temporary Urgency Change Petitions is further described in Chapter 3, Appendix E, Draft Alternatives, and Appendix F, Modeling. Alternative 2 considers the impacts of historical TUCPs terms being applied in the future. Alternative 3 does not include TUCPs.

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	upstream water temperature requirements of both the Biological Opinions and the Basin Plan. These failures to meet ESA requirements occurred despite the fact that existing ESA requirements and the water quality and temperature objectives they incorporate are widely acknowledged to be insufficiently protective (see CDFW 2010; (See e.g. SWRCB 2010 2017 2018). In addition to inadequate Sacramento River Temperature Management Plans (required under water rights decision 90-5 and 91-1) and associated management of Shasta Reservoir Temporary Urgency Change Petitions (TUCPs) for Delta operations have been the principal artifice of this serial weakening of environmental protections during sequential Dry and Critically Dry years and also Wet years. TUCPs submitted by DWR and BOR were approved by the SWRCB in six out of ten years in the last decade: 2014 2015 2016 2021 2022 and 2023. These changes to water project operations were not previously analyzed as part of the environmental documentation for the Biological Opinions or in the SWRCB's 1995 Bay-Delta Water Quality Control Plan and Water Right Decision 1641. (See e.g. Water Rights Order 2014-0029 (September 24 2014); [Footnote 31: Available online at: http://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/2014/wro2014_0029.pdf] Water Rights order dated February 3 2015; [Footnote 32: Available online at: https://www.waterboards.ca.gov/drought/docs/tucp/2015/tucp_order020315.pdf] April 6 2015 Revised Order; [Footnote 33: Available online at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/tucp/2015/tucp_order040615.pdf] July 3 2015 order conditionally approving petition for temporary urgency change [Footnote 34: Available online at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/tucp/2015/tucp_order070315.pdf]). For	

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	instance in 2015 the waivers of water quality standards reduced Delta outflows and increased water deliveries by approximately 800000 acre-feet. These waivers of required operations contributed to devastating impacts to winter-run Chinook Salmon spring-run Chinook Salmon fall-run Chinook Salmon Delta Smelt Longfin Smelt and other native fish species including: - Greater than 95 percent mortality of endangered winter-run Chinook Salmon eggs and juveniles above Red Bluff Diversion Dam in 2014 and 2015 including temperature dependent mortality of 77 percent in 2014 and 85 percent in 2015 due to lethal and chronically adverse water temperatures below Keswick Dam. - Greater than 95 percent mortality of fall-run Chinook Salmon eggs and juveniles that spawned in the mainstem Sacramento River above Red Bluff Diversion Dam in 2014. - Total closures of California fall-run Chinook fisheries in 2023 and 2024 for lack of abundance of returning adult spawners due to high TDM [Temperature Dependent Mortality] rate impacts on the eggs and juveniles of 2020 2021 and 2023 year-classes. - Record low abundance indices for Delta Smelt in the 2014 and 2021-23 Fall Midwater Trawl and 2015 and 2021 Spring Kodiak Trawl surveys. - Near record low abundance of Longfin Smelt in the 2014 Fall Midwater Trawl survey and a new record low abundance in the 2015 Fall Midwater Trawl survey. - Negative impacts on the survival of juvenile Delta Smelt in June through August of 2021 on the recruitment and post-larval survival of Delta Smelt in 2022 and on the recruitment of Delta Smelt in 2023. - Negative impacts on the spawning and recruitment of Longfin Smelt in June and July of 2021 and on abundance of Longfin Smelt in 2022 and 2023.	

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	- Lower survival and recruitment of several other estuarine species in 2021 2022 and 2023. - Increases in the abundance of nonnative species like Black Bass in the Delta; and - Increases in the abundance of toxic cyanobacteria in the genus Microcystis that result in harmful algal blooms in the Delta (see Lehman et al. 2022 and SWRCB 2021). (See e.g. Water Rights Order 2014-0029; Water Rights order dated February 3 2015; April 6 2015 Revised Order; July 3 2015 order conditionally approving petition for temporary urgency change; Protest to TUCP filed by the NRDC dated February 13 2015; [Footnote 35: Available online at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/comments_tucp2015/docs/nrdc_obegi02 1315.pdf] March 24 2015 Petition for Temporary Urgency Change Attachment A; [Footnote 36: Available online at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/tucp/2015/apr2015_req032415.pdf] Feb 15 2022 Order Denying in Part and Granting in Part Petitions for Reconsideration of the Executive Director's Approvals of the June 1 2021 Order Conditionally Approving a Petition for Temporary Urgency Changes To License and Permit Terms and Conditions Requiring Compliance with Delta Water Quality Objectives In Response To Drought Conditions and the June 10 2021 Sacramento River Temperature Management Plan; [Footnote 37: Available at: https://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/2022/wro2022_0095.pdf] March 18 2022 Temporary Urgency Change Petition for April 1 2022 through June 30 2022; [Footnote 38: Available at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/applications/transfers_tu_notices/2022/2022031 8_tucp.pdf] and February 13 2023 Temporary Urgency Change	

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	Petition for February 1 2023 through March 31 2023. [Footnote 39: Available at: https://www.waterboards.ca.gov/drought/tucp/docs/2023/20230213_tucp.pdf]) 2. Application of TUCPs in Droughts under Alternative 2. As mentioned above the DEIS is unclear about the role (if any) of TUCPs [Temporary Urgency Change Petition] for Delta operations in droughts or sequential dry years. The DEIS under the heading "3.5.10 Drought" states the TUCPs would have no role under Alternative 3: "Similar to Alternative 2 however Alternative 3 prohibits the use of a TUCP." (DEIS p. 3-66). Leaving aside the unclear syntax this appears to suggest that Alternative 3 which prohibits the use of TUCPs is different from Alternative 2 in this respect and thus that there would be some role for TUCPs under Alternative 2. This language should be clarified.	
68-76	In a similar vein the discussion of drought actions under Bin 2B states: "Reclamation will consider water supply (CVP allocation) reductions and through coordination with the SHOT [Shasta Operations Team] will identify moderate system-wide tradeoffs and potential transfer modifications and with the goal of meeting both of these goals. Moderate system wide tradeoffs generally include but are not limited to rebalancing between other CVP reservoirs with moderate impacts to other parts of the system transfer timing modifications situation-specific adjustments to Delta water quality standards under D-1641 to address developing drought conditions and other actions from the drought toolkit." (DEIS Appendix E p. E- 77). And the discussion of drought actions under Bin 3B similarly states: "Reclamation through Chinook salmon coordination with the SHOT will identify moderate and heavy system-wide tradeoffs with the goal of conserving storage and meeting minimal	Please refer to Chapter 3, Alternatives, and Appendix E, Draft Alternatives, for detailed information of all of the Alternatives. Refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook for the formulation of alternatives to ensure a range of reasonable alternatives. Refer to Standard Response 6, Hydrologic Modeling and Surface Water, regarding drought analysis. Situation-specific adjustments to Delta water quality standards would be accomplished by Reclamation and DWR submitting a Temporary Urgency Change Petition (TUCP) to the State Water Resources Control Board. The purpose is to temporarily modify requirements imposed by Revised Water Right Decision 1641 to meet flow and water quality objectives established in the Bay-Delta Water Quality Control Plan. Alternative 2 proposes a drought toolbox of actions, which includes Temporary Urgency Change

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	temperature objectives. Moderate system wide tradeoffs generally include but are not limited to rebalancing between other CVP reservoirs with moderate impacts to other parts of the system transfer timing modifications situation-specific adjustments to Delta water quality standards under D-1641 to address developing drought conditions and other actions from the drought toolkit." (DEIS Appendix E p. E-80). If there is a mechanism other than TUCPs [Temporary Urgency Change Petition] that could accomplish such "situation-specific adjustments to Delta water quality standards" the DEIS fails to describe them. In discussing Alternative 1 the DEIS states: "Reclamation and DWR would not apply for TUCPs to preserve storage in upstream reservoirs beyond water required to maintain public health and safety." (DEIS p. 3-42). It is unclear then what the purpose of a TUCP would be or how BOR would parse the purposes of a TUCP. It is also unclear whether this limitation would apply to Alternative 2. Among other things the distinction between a TUCP to "preserve storage in upstream reservoirs" and a TUCP to benefit water supply is rarely self-evident. As discussed earlier previous TUCPs to preserve storage have used the preserved storage to maintain or increase deliveries instead of maintaining adequate temperature conditions among other things.	Petitions, to respond to current or anticipated drought and dry year conditions (E-124). Under Alternative 2, during dry conditions, Reclamation could seek a TUCP to preserve storage upstream storage to provide additional benefits to listed species.
68-77	Rather than reducing deliveries to the SRS contractors most of the alternatives in the DEIS (other than Alternative 3) contemplate harmful actions such as reducing the minimum flow from Keswick Reservoir in winter below the 3250 cfs minimum. (DEIS p. 3-44). This would dewater fall-run Chinook Salmon redds and degrade habitat for winter-run Chinook Salmon juveniles that remain in the upper reaches of the Sacramento River downstream of Keswick Dam. The DEIS also contemplates reducing summer flows in the Sacramento River	A redd dewatering analysis was conducted in the Draft EIS to evaluate the risk of fall-run Chinook salmon redd dewatering in the Sacramento River below Keswick Dam. Refer to Attachment L.4, Sacramento River Redd Dewatering Analysis. The analysis also evaluated flow-related effects to winter-run Chinook salmon habitat availability (Attachment O.3, Sacramento River Weighted Usable Area Analysis) and a winter-run Chinook salmon fry standing analysis (Attachment L.5, Sacramento River Juvenile Stranding Analysis).

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	at Wilkins Slough from the required 5000 cfs to allow BOR to meet SRS Contracts (See e.g. DEIS Appendix E on Bin 3 years p. E-79: "As a default Reclamation will target a minimum flow of 3400 cfs [at Wilkins Slough] under these conditions."). Such reductions would degrade the migration corridor for Chinook Salmon and other species that under existing (non-drought) conditions is almost always already impaired by high water temperatures and lack of adequate flow during summer months.	
68-78	The overarching problem with TUCPs [Temporary Urgency Change Petition] and the other rob-Peter-to-pay-Paul options that the DEIS proposes to "preserve storage" in Shasta or other reservoirs is not simply that they have limited storage benefit. It is that they are founded on recovering storage depleted by unsustainable water deliveries generally in the first Dry or Critically Dry year. TUCPs are also ineffective because they are a band aid on a wound that was created at least a year previously. Conserving (or "preserving") storage with TUCPs does not fail because it doesn't save enough water. It is a failed strategy because it acts too late after the time when increased storage could have made a difference. Droughts are a normal part of the California climate and consecutive dry years can be planned for as readily as single ones. California law identifies TUCPs as limited to urgencies that cannot otherwise be avoided through the exercise of due diligence. See Wat. Code 1435 subd. (c). Unfortunately the DEIS fails to adequately exercise due diligence by identifying the specific measures to mitigate the highly foreseeable and largely avoidable conditions of drought and the bad management decisions that have been made in the past in response to drought. The DEIS's treatment of the Drought Toolkit is a case in point.	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding comments on the modeling assumptions used for the Draft EIS. Refer to Standard Response 9, Climate Change, regarding how climate change data was included in the modeling assumptions for the Draft EIS. Refer to Standard Response 6, Hydrologic Modeling and Surface Water Resources, regarding modeling assumptions and output analysis of droughts. The cyclical nature of California hydrology and the resulting effect on federally listed species warrants special consideration for operation during droughts. Although each drought is unique, contingency planning can facilitate an adequate response. California experiences variable climate, and periods of droughts are a recurring feature. Water stored in CVP and SWP reservoirs and groundwater basins mitigate droughts.
68-79	C. Drought Toolkit.	The cyclical nature of California hydrology and the resulting effect

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	Part of the proposed mitigation for impacts of the CVP and SWP during drought conditions is the voluntary "Drought Toolkit" which would provide a coordination process to implement drought relief actions. However the measures in the Toolkit are described generally and are not compared side-by-side from one alternative to another. It is also unclear whether the Drought Toolkit is a menu of potential actions or a prescribed protocol for actions in response to drought or some combination. DEIS Section E.3.9 ("Drought") states that the "Drought Toolkit" was a requirement of the 2020 Record of Decision for the 2019 BOs. It further states that BOR and DWR completed the latest version of the drought toolkit in 2022. However the section does not describe the contents of the drought toolkit. (DEIS Appendix E p. E-58). Some aspects of the Drought Toolkit seem to be part of Alternatives 1 and 4; but even there is no comprehensive inventory of required measures only a general reference. For example regarding Alternative 1 the DEIS states: " Reclamation and DWR would implement elements of a drought toolkit (DEIS Appendix E p. E-66). The DEIS says "a drought toolkit." It does not say which "elements" such a toolkit contains which elements BOR and DWR would select or how BOR and DWR would select such elements. Moreover the description of any existing Drought Toolkit would still not address the relationship between such measures and Alternative 2. Regarding Alternative 2 the DEIS states: "Reclamation is proposing to change the balance between risks of flood control releases for Shasta Reservoir and place a higher priority on maintaining storage for drought protection. The strategy is framed around a framework adapted from the multi-year drought sequence experienced in Victoria Australia." (DEIS Appendix D p. D-8). However this priority repeated in several places in the DEIS (see also DEIS Appendix E p. E-71) is stated only in general terms as a policy not as a series of specific	on federally listed species warrants special consideration for operation during droughts. Although each drought is unique, contingency planning can facilitate an adequate response. California experiences variable climate, and periods of droughts are a recurring feature. Water stored in CVP and SWP reservoirs and groundwater basins mitigate droughts. Multi-year droughts occur when two or more successive years are dry and reservoirs and groundwater reserves are depleted. During these periods, Reclamation in coordination with DWR would develop a Drought and Dry Year Planning Toolkit which focuses on actions to implement as intervention measures during hydrologic years with drought and dry conditions. The Drought Toolkit would be developed within 18 months of executing a Record of Decision. The Drought Toolkit includes actions that can either mitigate or avoid impacts throughout the Central Valley. As discussed in Chapter 3, Alternatives, the Drought Toolkit is a common component of the LTO of the CVP. Reclamation would meet and confer with the USFWS, NMFS, DWR, CDFW, and Sacramento River Settlement Contractors on voluntary measures to be considered for implementation if drought conditions continue into the following year, including measures that may be beyond Reclamation and DWR's discretion. If dry conditions continue, Reclamation will regularly meet with this group (and potentially other agencies and organizations) to evaluate current hydrologic conditions and the potential for continued dry conditions that may necessitate the need for development of a drought contingency plan (which may include actions from the Drought Toolkit) for the water year.

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	measures. Moreover it does not address the relative priority of maintaining storage in relation to water supply. DEIS Table D-5 "Summary of Alternative 2 Avoidance and Minimization Measures for Fish and Aquatic Resources" states regarding drought: "Avoidance Measure: Drought Operations Priority Framework." Geography & Listed Species Impacted: Sacramento River (salmonids and sturgeon); Bay-Delta (salmonids sturgeon and smelt)""Impact: "Reclamation will develop a Drought Emergency Plan that establishes system priorities and seeks to provide Winter-run Chinook salmon spawning water temperatures." The measure may increase or decrease the water temperatures by decreasing Sacramento River flows into the Delta; however increasing Shasta Reservoir storage may provide for more suitable water temperatures in the following year. The measure may also impact outmigration by decreasing Sacramento River flows into the Delta."(DEIS Appendix D Table D-5 pp. D-20 D-24 D-25). Here again the measure described seems to suggest in the absence of other mechanisms that BOR and DWR will request TUCPs in "decreasing Sacramento River flows into the Delta." Id. The voluntary largely qualitative nature of the Drought Toolkit and the lack of authorization or funding for its implementation makes it difficult to assume that it is reasonably likely to occur and therefore reliance on the Drought Toolkit in the DEIS is unlawful.	
68-80	Droughts are a normal part of the California climate. About forty percent of the last one hundred water years have been part of drought sequences. BOR and DWR must plan for consecutive dry years. This requires laying down to water supply some of the bets that have previously placed inordinate and devasting risk on listed species. However as contemplated in the DEIS involuntary shortages to SRS [Sacramento River Settlement] Contractors are exclusively limited to a triage	The cyclical nature of California hydrology and the resulting effect on federally listed species warrants special consideration for operation during droughts. Although each drought is unique, contingency planning can facilitate an adequate response. California experiences variable climate, and periods of droughts are a recurring feature. Water stored in CVP and SWP reservoirs and groundwater basins mitigate droughts. Multi-year droughts occur when two or more successive years are dry and reservoirs

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	situation. Until unsustainable levels of water deliveries are met head-on the CVP and SWP will always be one year away from a potential fisheries disaster. The listed species covered in the forthcoming BOs cannot survive many if any more such disasters. The Drought Toolkit contemplated in the DEIS fails the requirements of NEPA for disclosure and analysis. It also appears to be likely to result in the same mismanagement and resort to TUCPs [Temporary Urgency Change Petition] as experienced in recent years. Indeed the Newsom Administration recently revised emergency drought executive orders so as to continue maximizing water exports while loosening drought restrictions for both rural and urban communities receiving CVP and SWP water. TUCPs for river and Delta management would undermine and alter the function of the drought toolkit if they continue to be used at all times as part of Delta management.	and groundwater reserves are depleted. During these periods, Reclamation in coordination with DWR would develop a Drought and Dry Year Planning Toolkit that focuses on actions to implement as intervention measures during hydrologic years with drought and dry conditions. The Drought Toolkit would be developed within 18 months of executing a Record of Decision, The Drought Toolkit includes actions that can either mitigate or avoid impacts throughout the Central Valley. As discussed in Chapter 3, Alternatives, the Drought Toolkit is a common component of the LTO of the CVP. Reclamation would meet and confer with the USFWS, NMFS, DWR, CDFW, and Sacramento River Settlement Contractors on voluntary measures to be considered for implementation if drought conditions continue into the following year, including measures that may be beyond Reclamation and DWR's discretion. If dry conditions continue, Reclamation will regularly meet with this group (and potentially other agencies and organizations) to evaluate current hydrologic conditions and the potential for continued dry conditions that may necessitate the need for development of a drought contingency plan (which may include actions from the Drought Toolkit) for the water year.
68-81	V. The Proposed Action Does Not Match the State's Proposed Project. The Proposed Action in Reclamation's DEIS does not currently match the State's Proposed Project in the Draft Environmental Impact Report ("DEIR") published in May 2024. We are concerned that this will lead to several inconsistencies in implementing the coordinated project operations and also deny the public an informed opportunity to review coordinated project operations that fully disclose environmental impacts. (40 C.F.R. 1502.1 (b)-(c); see also Columbia Basin Land Protection v. Schlesinger 643 F.2d 585 594 (9th Cir. 1981) (A DEIS must	Refer to Standard Response 2, Related Regulatory Processes, regarding requirements applicable to the State Water Project. This EIS evaluates the alternatives for changes to the long-term operations of the CVP, including CVP reservoirs, such as Shasta Reservoir, and other CVP and SWP facilities that could be affected by operational changes. The State's ITP EIR evaluates a proposed project for changes in SWP Delta, Suisun Marsh, and Suisun Bay facility operations that could be needed because of proposed changes to the CVP long-term operations downstream of the

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	ensure "full disclosure of the environmental consequences of a project.")) The DEIS states "A Sub-Alternative '2B' is derived from Alternative 2 but includes components developed by CDFW and DWR during DWR's current Incidental Take Permit application process for the SWP. Alternative 2b is anticipated to result in changes on Delta exports from more restrictive QWEST criteria. Alternative 2B also includes an extension of the CCF operation period to December 1 through March 31 from mid-December through mid-March effectively increasing the operation of the SWP by one month. These components were not available in time to be included in quantitative modeling. Reclamation has identified Alternative 2B as the preferred alternative. Alternative 2B best meets the Purpose and Need including the goals of E.O.13990 because NMFS and USFWS reached consensus on an alternative for Reclamation to submit for consultation. Alternative 2B incorporates the Delta criteria proposed in DWR's ITP for the Delta facilities of the SWP to harmonize operations of the CVP and SWP." (DEIS Executive Summary pp. 0-3 and 0- 4). [Footnote 40: Once again we remind Reclamation that NMFS and USFWS have used an old version of Alternative 2 for analysis under their Biological Opinions and therefore "Alternative 2B" is not used or agreed upon by the fisheries agencies.]"Alternative 2B" is different in important ways from DWR's Proposed Project. The Proposed Project includes and assumes implementation of all Voluntary Agreements as well as potential application of TUCPs. [Footnote 41: For more detail please see NGO comment letter re DWR's SWP LTO DEIR July 2024 (attached).] The combination of both of these actions is not analyzed or addressed by Reclamation in the DEIS in any of the Alternative 2 variants. The DEIS purports to analyze long-term operations of the CVP and the SWP yet each project has a different preferred alternative and in each case that preferred alternative fails to comply with federal and	Feather River/Sacramento River confluence. While coordination between Reclamation, DWR, and other cooperating agencies has occurred in development of the EIS and EIR, the EIS alternatives and scope of analysis are not identical to the State's ITP EIR because Reclamation is disclosing the potential environmental effects of its broader proposed CVP long-term operations changes on the resources that could be affected. Reclamation and DWR also regularly coordinate on CVP and SWP operations including through the Coordinated Operation Agreement. Alternative 2 is analyzed in phases to accommodate voluntary flow contributions and state board decisions, which are outside Reclamation's direct control. Those phases include operations with a Temporary Urgency Change Petition (TUCP); the full Voluntary Agreement (VA) alternative to the Bay-Delta Plan update; early implementation of Delta export reductions; and no additional winter and spring Delta outflow. The phases of the Preferred Alternative (Alternative 2) include: • Alternative 2 with Temporary Urgency Change Permits (Alt2v1wTUCP) • Alternative 2 without Voluntary Agreements (Alt2v1woTUCP) • Alternative 2 with Early Implementation of Delta Voluntary Agreements (Alt2v2woTUCP) • Implementation of all Voluntary Agreements (Alt2v3woTUCP) A combination of both TUCPs and VAs was not a single model run; however, the four phases do allow the reader to understand the

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	state law. Reclamation must revise and recirculate the DEIS to address how the state and federal preferred alternatives will be coordinated and as stated above revise the preferred alternative to meet the requirements of the ESA.	range of impacts associated with the action.
68-82	VI. The DEIS Fails to Properly Analyze the Effects of Climate Change. California state law required statewide Greenhouse Gas (GHG) emissions to be reduced to 1990 levels by 2020 (this goal was met) and 2015 Executive Order EO-B30-15 sets a goal of reducing GHG emissions 40% below 1990 levels by 2030 (DEIS Appendix M p. M-6). Section 10 and Appendix M of the DEIS describe the GHG emissions of the alternatives yet fails to disclose if the 1990 emissions of the SWP and CVP were different than the baseline. Table M-2 shows CVP energy use is similar or greater than NAA under all alternatives except Alternative 3 which would have a 39% reduction in energy use. SWP energy use is greater than NAA under all alternatives except Alternative 3 which would have a 47% reduction in energy use. This reduction in energy use would result in reduced emissions--Alternative 3 is the only alternative that significantly reduces the GHG emissions of the CVP and SWP. Figure 10-6 (reproduced below) specifically shows that Alternative 3 would result in a reduction of almost half a million metric tons of CO2-equivalent per year. This is a 14% reduction; the other alternatives would increase emissions. [See original comment for an Emissions Change Compared to No Action Alternative bar graph]	Refer to Standard Response 9, Climate Change, regarding the consideration of climate change in the analysis provided in the EIS. Support for Alternative 3 is noted.
68-83	VII. Alternative 3 Should Be the Preferred Alternative and therefore the Proposed Action. Reclamation should adopt Alternative 3 as the Proposed Action. and compare it to other alternatives. Alternative 3 is the only alternative that adequately protects endangered species as required by law. Because the DEIS does not contain a reasonable range of alternatives that	Reclamation believes it has an adequate range of reasonable alternatives. Please refer to the Standard Response 4, Alternatives Formulation, for the rigorous approach Reclamation undertook regarding the formulation of a range of reasonable alternatives. Standard Response 5, Adequacy of Analysis and Mitigation, for additional information regarding the way impact determinations

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	are designed to achieve that threshold Reclamation should adopt Alternative 3 as the Proposed Action and compare it to other alternatives that might similarly and feasibly provide an adequate level of protection Reclamation should develop additional adequate alternatives and compare them to Alternative 3.In performing this revised alternatives analysis Reclamation should assume implementation of the Sustainable Groundwater Management Act ("SGMA") and evaluate a broad array of water conservation mitigation measures. This would provide a more accurate analysis of the actual water supply impacts of implementing Alternative 3 which are wildly overstated in the DEIS.	were made and the use of the best available science as part of the impact assessment. The Draft EIS assumes implementation of SGMA. Support for Alternative 3 is noted.
68-84	A. Alternative 3 Should Be the Preferred Alternative Because It Is the Only Alternative That Meets the Legal Requirements of the ESA and NEPA. NEPA regulations state that "[t]he environmentally preferable alternative will best promote the national environmental policy expressed in section 101 of NEPA by maximizing environmental benefits." (40 C.F.R. 1502.14). The only alternative that adequately protects endangered species as required under the state and federal ESAs - indeed the only alternative that provides significant measurable benefits to endangered species at all is Alternative 3 which is therefore the "environmentally preferrable alternative." Id. This alternative was designed to prioritize listed species' needs with appropriate attention to achieving temperature requirements and the magnitude and timing of Delta outflow necessary to support viable populations. It performs these tasks far better than the other alternatives and the NAA. For more detail please see Section III of these comments specifically the detailed discussions of the impacts of the Proposed Action to listed species compared to Alternative 3. It should also be noted that	The federal Endangered Species Act is addressed under a Section 7 permitting process, which is separate from this NEPA process. Please refer to Standard Response 2, Related Regulatory Processes, regarding ESA processes. Please refer to Standard Response 4, Alternative Formulation, for the rigorous approach Reclamation undertook in the formulation of alternatives that have different approaches and priorities to the many environmental resources addressed by this multipurpose project. Reclamation strongly believes that this rigorous approach has led to an adequate range of reasonable alternatives. Please refer to Chapters 4-22 for all the different environmental resources analyzed in the DEIS. Support for Alternative 3 is noted.

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	Alternative 3 is the only alternative that significantly reduces the greenhouse gas emissions of the CVP and SWP.	
68-85	B. Even With the Inclusion of Alternative 3 the DEIS Still Fails to Analyze a Reasonable Range of Alternatives. NEPA requires that Reclamation consider a reasonable range of alternatives. (See 42 U.S.C. 4332; 40 C.F.R. 1502.14 1508.25(b); see also Kootenai Tribe of Idaho v. Veneman 313 F.3d 10941122-1123 (9th Cir. 2002) (and cases cited therein)). As we have established in previous comments and litigation and in more detail above the coordinated operations of the CVP and SWP under the 2020 Record of Decision are jeopardizing ESA-listed species. Evaluation of alternatives cannot exclude alternatives that result in significant reductions in water deliveries to water diversions by and water allocations for the contractors of the SWP and CVP or include alternatives which would violate the ESA by allowing for the continued decline and eventual extinction of listed species. In light of these facts and in order to evaluate a reasonable range of alternatives thus requires modeling and analysis of one or more alternatives that prevent the extinction and support the recovery of listed species and which include actions such as reductions in water diversions by senior water rights settlement/exchange contractors greater than the reductions provided for in the existing contracts. The DEIS has made a start through the development of Alternative 3 and we are grateful that the Bureau worked with a number of the undersigned organizations to inform this Alternative. However in the DEIS Alternative 3 is the only alternative in the DEIS whose implementation would lawfully mitigate the harmful impacts of Project Operations under the ("NAA"). NEPA requires the Bureau to "rigorously explore and objectively evaluate" a range of alternatives to proposed federal actions. This requirement is intended to prevent an EIS from becoming "a	Reclamation believes it has an adequate range of reasonable alternatives. Please refer to Standard Response 4, Alternatives Formulation, for the rigorous approach Reclamation undertook regarding the formulation of a range of reasonable alternatives. Refer also to Appendix E for a description of the process used to focus and refine each of the alternatives carried forward for detailed analysis, and to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the alternatives evaluation in the EIS. Refer to Standard Response 2, Related Regulatory Processes, regarding Section 7 consultation in accordance with the Endangered Species Act (ESA) and the coordinated NEPA and ESA processes (40 C.F.R. Section 1502.24(a)). Support for Alternative 3 is noted.

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	foreordained formality." City of New York v. Dep't of Transp. 715 F.2d 732 743 (2nd Cir. 1983); see also Davis v. Mineta 302 F.3d 1104 (10th Cir. 2002). Without additional consideration and analysis in the DEIS for Alternative 3 the DEIS's ambiguous and deeply flawed Proposed Action risks becoming a "foreordained formality." Id. The range of alternatives is considered the heart of the environmental impact statement (CITE). The DEIS is deeply flawed because it does not include a range of reasonable alternatives in violation of NEPA. As established in other sections of this comment letter (see Section II and Section V) the Proposed Action and Alternatives 1 and 4 perform largely the same as or worse than the NAA. The NAA is the implementation of the 2020 Record of Decision which is itself legally and biologically inadequate. Furthermore as established above the Proposed Action is missing critical information and its information and analyses are flawed which impacts the legitimacy of its results and conclusions. The revised and recirculated DEIS should include additional alternatives similar to Alternative 3 in that they are primarily designed to protect endangered species and remedy the harmful effects of water storage diversion and export associated with operations of the CVP and SWP.	
68-86	C. The DEIS Must Incorporate SGMA Into its Analysis of Groundwater Impacts. As the DEIS notes the model used to project groundwater pumping changes does not include the Sustainable Groundwater Management Act ("SGMA"). (See Cal. Water Code 10720 (2020)). On page 6-5 the DEIS states: "The C2VSimFG model does not directly simulate limitations to groundwater levels and pumping that may be imposed as part of SGMA. The model assumes that groundwater will be used to supplement water supply if surface water supplies are decreased in order to meet demands. Conversely if surface	The SGMA prescribes that GSAs develop GSPs to bring medium- and high-priority basins into sustainable operation. Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium- and high-priority basins with overdraft conditions or 2042 for medium- and high-priority basins without overdraft. Each GSP that is either currently being developed or has been developed is specific to each groundwater basin/subbasin. The C2VSim groundwater model does not include specific actions for each GSP relative to parameters such as maximum groundwater pumping or minimum operational

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	water supplies are increased the C2VSimFG model will decrease groundwater pumping. The model therefore may over predict increases in groundwater pumping decreases in groundwater levels increases in loss of surface water to groundwater and subsidence. If groundwater supply is unable to be increased beyond a certain level (based on the GSP for the area) then the current demand level may not be able to be supported. "This omission matters because the DEIS proceeds to evaluate impacts and mitigation measures based on the model's output. It is particularly problematic for Alternative 3 which would reduce surface water deliveries substantially.	groundwater levels. GSAs will make individual management decisions regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The C2VSim model represents effects to groundwater resources that may be more substantial than when GSP provisions are fully enacted. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives. Each of the alternatives simulated in the EIS are simulated with the same assumptions regarding SGMA. Therefore, the comparison of each alternative to the No Action Alternative is comparable to each other to determine relative changes in groundwater resources. Also refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.
68-87	Estuarine species need significantly more Delta outflow as discussed in detail in Section III of these comments. It is likely that any alternative that meets the needs of listed species for adequate flow into through and out of the Delta will necessarily result in significantly lower water deliveries. Table H-54 shows that Alternatives 1 and 4 maintain or increase deliveries while Alternative 2 results in delivery reductions that are only 6-11 percent. On the other hand Alternative 3 the only one that meets many of the listed species' needs for improved environmental conditions does so in large part by reallocating	CalSim3 models of the No Action Alternative and Action Alternatives for the LTO EIS are intended to be used in a comparative manner, and the assumptions used in each scenario should be taken into account. Comparing results from the LTO EIS Alt3 model to results from the SWRCB's SacWAM model without accounting for the differences in model assumptions, representations of the systems, inputs, and processes does not constitute an appropriate use of the models. Please refer to Appendix F, Modeling, Introduction, F.14 for model limitations and appropriate use of model results. While CVP south of Delta service

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	water diversions to necessary flow augmentations thereby substantially affecting water deliveries. Reduced deliveries to CVP and SWP contractors projected under Alternative 3 are not representative of all water users and do not reflect all of the SWP and CVP contractors' water supplies. For example Table F.2.4-12 shows a 1.1 MAF reduction in south of Delta agricultural contract deliveries under Alternative 3. This is similar to the 0.9 MAF reduction in Delta supply to the San Joaquin Valley expected under the SWRCB's 65% of unimpaired flow scenario (SWRCB 2023 at 6-54). That scenario represented a 31 percent reduction of Delta supplies but only represented a 5 percent reduction of total San Joaquin Valley supply. In addition the DEIS at F.1-1-2 states "CVP south of Delta service contractor demands are reflected as full contract obligation." Given that many south of Delta water contractors do not typically receive their full demands the characterization of impacts to south of Delta water supply is overstated.	contractor demands are reflected as full contract obligations, contract allocations and deliveries do not necessarily meet full contractor demands in all years. Contract allocations and water deliveries are modeled dynamically and may be reduced by water supplies and/or other controlling mechanisms within CalSim3.
68-88	The DEIS incorrectly assumes that water delivery reductions projected to result from Alternative 3 cannot be mitigated. The "Potential Mitigation Measures" column of Table H-54 in the DEIS was not populated because: "These reductions in water supply deliveries and water made available for diversion would not be able to be replaced reliably from other sources such as water transfers or groundwater pumping. Water transfers are included in the No Action Alternative and would not be available to further offset the reduced water supply deliveries generated by Alternatives 2 and 3. Reliance on groundwater pumping to offset these reductions would not be feasible given the potential for numerous environmental effects generated by additional groundwater pumping in an area with declining groundwater levels and the limits on the availability of groundwater supplies with the implementation of the	SGMA prescribes that GSAs develop GSPs to bring medium- and high-priority basins into sustainable operation. Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium and high priority basins with overdraft conditions or 2042 for medium and high priority basins without overdraft. Each GSP that is either currently being developed or has been developed is specific to each groundwater basin/subbasin. The C2VSim groundwater model does not include specific actions for each GSP relative to parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decision regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The

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	Sustainable Groundwater Management Act (see Appendix I Groundwater Technical Appendix for more information). Given the environmental and technological limits on the implementation of other potential options to offset this impact no feasible mitigation has been identified to reduce the severity of these reductions." (DEIS Appendix H p. H- 56) (emphasis added). In other words the DEIS based on the model assumes that reductions in deliveries would be replaced by groundwater pumping (DEIS 17-3 Appendix I pp. 188-202). The DEIS ignores that fact that SGMA is the minimization and mitigation measure for potential groundwater impacts under proposed CVP/SWP operations or its alternatives. Effective Groundwater Sustainability Plans (GSPs) will identify and promote strategies to refill groundwater aquifers when feasible and restrict pumping to ensure aquifer levels can be maintained in California's evolving climate. Only by overlooking the status of SGMA implementation can the DEIS conclude "No avoidance and minimization measures or additional mitigation measures have been identified for groundwater." (DEIS p. 6-19). GSPs have already been completed and deficient GSPs have been identified and are in the process of being revised or subject to state control. The DEIS fails to disclose these facts and their obvious implications. Reclamation must revise the DEIS to properly include the future implementation of and compliance with GSPs and other requirements of the Sustainable Groundwater Management Act specifically revising the modeling results and subsequent analysis of impacts related to Alternative 3.	C2VSim model represents effects to groundwater resources that may be more substantial than when GSP provisions are fully enacted. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives. Each of the alternatives simulated in the EIS are simulated with the same assumptions regarding SGMA. Therefore, the comparison of each alternative to the No Action Alternative is comparable to each other to determine relative changes in groundwater resources. C2VSim is the best available groundwater modeling tool given the geographic scale of the analysis and the complexity of linking to the CalSim 3 model analysis. Also refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.
68-89	D. The DEIS Must Seriously Evaluate Water Conservation and Other Mitigation Measures Available to Offset Water Supply Impacts of Alternative 3. The DEIS's failure to disclose the role of SGMA in preventing groundwater impacts is matched by its	Please see Standard Response 4, Alternatives Formulation, regarding alternatives development, and range and feasibility of the alternatives evaluated in the EIS.

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	failure to acknowledge the huge potential for water conservation to mitigate impacts of reduced surface water supplies in California. Numerous studies in recent years have identified millions of acre-feet of potential reductions in water use in California. As the Water Board notes "On the basis of a review of previous efficiency studies Pacific Institute and Natural Resources Defense Council (2014) estimated that agricultural water use could be reduced by 5.6 million to 6.6 MAF/yr or by about 17 to 22 percent while maintaining productivity and total irrigated acreage." (SWRCB 2023 p. 6-95). In addition to SGMA measures identified in these reports should be considered feasible mitigation for Alternative 3. NEPA requires the Bureau to take a "hard look" at mitigation measures. Coal. for Canyon Pres. v. Slater 33 F. Supp. 2d 1276 1280 (D. Mont. 1999) (An agency's "perfunctory description of mitigating measures is inconsistent with the 'hard look' it is required to render under NEPA.") Reclamation must revise the DEIS to properly include the future implementation of water conservation measures and other water management actions specifically revising the modeling results and subsequent analysis of impacts of Alternative 3.	Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. Reclamation proposed Mitigation Measure AG-1: Diversify Water Portfolios, which encourages water agencies to diversify their water portfolios. Diversification could include the sustainable conjunctive use of groundwater and surface water, water transfers, water conservation and efficiency upgrades, and increased use of recycled water or water produced through desalination where available. See Appendix D, Mitigation Measures. The mitigation measure relies on entities other than Reclamation to implement the measures. Because Reclamation does not have authority to implement this measure, Reclamation cannot ensure that it will be implemented. If it is implemented, it will reduce impacts on agricultural land.
68-90	E. There are Clerical Errors and Unclear Descriptions of Alternative 3 that Require Correction. Section E.6.1.3 of the DEIS describes water temperature management under Alternative 3 and Section 7 covers Alternative 4. These sections have the following possible typographical errors in section numbering that should be reviewed and revised: - The DEIS refers to "Delta outflow requirements described in Section E.7.1.1 Water Temperature Management from December through May (DEIS p. E-163). It is likely this should refer to section E.6.4.2. Section E.7.1.1. contains no description of Delta outflow requirements.	The text has been revised to correct the clerical error and now refers to EIS Chapter 3, Alternatives, Section 3.5.1.2, Winter and Spring Pulses and Delta Outflow. The same revision has been made for a similar clerical error in Appendix E, Draft Alternatives. The reference to Section E.7.1.1 has been revised to Section E.6.1.2, Winter and Spring Pulses and Delta Outflow. The text has been revised to correct the clerical error and now refers to Sections E.6.1.1 and E.6.1.2.

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	- The DEIS on p. E-163 also states that "Reclamation would not make water available for delivery until operational plans show the targets in 7.1.1 and 7.1.2 are likely to be met or exceeded." However Sections 7.1.1 and 7.1.2 contain targets that appear to be inconsistent with targets in Section E.6.1.3. For example Section 7.1.1 contains a 2.0 MAF EOS target while Section E.6.1.3 contains a 2.2 MAF target. Section 7.1.2 contains fall-winter instream flows under Alternative 4 and EOS targets between 2.4 and 3.2 TAF that control Keswick releases; however Section 6 specifies Alternative 3's approach of releasing 45-55% of unimpaired inflows in order to achieve Delta outflow criteria.- F.2-1-1 must be corrected it displays an error where a reference source was not found for a figure number. These references to Section 7 in Section 6 should be corrected. We would also recommend that Reclamation compare the summary of Alternative 3 callouts on F.1-1-53 and the callout tables in Section F.1-2. The Section E.6 summary appears to be incorrect and incomplete compared to the callout summary in Section F.1-1.7 and should be revised for accuracy. In addition Section E.6 fails to mention the lower pass-through of unimpaired flow when storage requirements are not likely to be met (described on F.1-1-53). The DEIS states in several places (e.g. E-63 E-167 F.1-1-18 F.1-2-7) that all the alternatives except NAA assume that San Luis Reservoir 130 TAF to 1102 TAF of increased CVP capacity. However the October to April exceedance graphs on pages F.2-1-288 to F.2-1-294 show the Alternative 3 line reaching peak storage at the same capacity as NAA. This apparent inconsistency between the Alternative 3 description (including increased San Luis Reservoir storage) and the modeling (not including the increased storage) must be corrected when the DEIS is revised and recirculated.	

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68-91	For example the paragraph describing impacts of the Proposed Action on Delta Smelt (DEIS at 12-53) is unintelligible: Alternative 2 is expected to have little to negligible impacts to larvae resulting from increased and decreased entrainment of larvae (Neutrally buoyant particle fate by inflow bin entrained at exports: 45% hi-hi 90% hi-lo; neutrally buoyant particle fate by OMR bins entrained at exports 56% at -2000 cfs 79% at -5000 cfs). For rearing habitat there are expected minor adverse to minor beneficial impacts on juveniles (Habitat Suitability Index (HSI) without temperature threshold of non-critically dry water year types and critically dry water year type: 0.513 0.65 and 0.402 0.424 and HSI with temperature threshold: 0.203 0.525 and 0.129 0.137). For population abundance there are expected adverse to beneficial impacts on the population growth rate (LCME: Geometric mean of predicted population growth rate of wet and above normal water year types and below normal dry and critically dry water year types: 1.24 (Wet and Above Normal) 1.28 (Wet and Above Normal) 0.74 (Below Normal Dry and Critically Dry) 0.74 0.77 (Below Normal Dry and Critically Dry) Figure 12-4). Alternative 2 includes Old and Middle River Flow Management which adjusts exports to minimize entrainment of fish and protection of critical habitat. Providing such an unprioritized list of the range of effects of each alternatives in different water year types on different life stages of different fish with no context is not informative. This and the description of the effect of other Alternatives on Delta Smelt bury the lead: The NAA and all alternatives except Alternative 3 are expected to result in continued rapid declines of Delta Smelt but Alternative 3 is expected to result in mean population growth of this highly imperiled species (Figure 12-4). The DEIS must be revised so that each of the alternatives are compared clearly concisely and accurately and the ultimate result of such effects are acknowledged.	Regarding the description of the impacts and range of impacts of the Proposed Action on Delta Smelt please refer to Standard Response 5, Adequacy of the Analysis and Mitigation, section Cumulative Analysis. Please refer to Standard Response 7, Aquatic Resources, section Response to General Comments Regarding Adverse Impacts on Aquatic Resources, regarding the effects of the different alternatives on the population growth rate of Delta smelt. Figure 12-4 shows Alternative 3 as having positive population growth with Lambda 1.2 on average. Figure 12-4 also shows Lambda less than 1 for all other alternatives. The preceding paragraphs describe the variability. Definition of the geometric mean has been added to Chapter 12 of the Final EIS for further clarification. Please see Table O-282 in Section O.8, Summary of Impacts, for a broad summary of impacts for each alternative. NEPA regulations limit the number of pages and favor the use of appendices for technical information that supports the analysis. Please see Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding NEPA page limits and Standard Response 7 about the structure of the aquatics analysis.

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68-92	VIII. DEIS Alternatives 1 and 4 are Properly Rejected. A. Alternative 1 Demonstrates the Need for an updated Bay-Delta Plan and Substantive ESA Protections. DEIS Alternative 1 also referred to as the Water Quality Control Plan Alternative operates the CVP and SWP to meet the current Bay-Delta Water Quality Control Plan (i.e. D-1641 and WRO 90-5). However it does not contain any operational restrictions from the 2008 2009 or 2019 Biological Opinions. Biological Opinions. (DEIS Appendix E pp. E-59-E-60). According to BOR this allows for evaluation of the effectiveness of "non-flow measures." Id. at p. E-60.Not surprisingly given that (a) the Delta ecosystem is in crisis see e.g. SWRCB 2010 2017 2018 2023; USEPA 2024; CDFW 2010; USFWS 2024a and (b) the current regulatory minimum flows required by the Bay-Delta Water Quality Control Plan are woefully inadequate to protect fish and wildlife especially endangered fish see e.g. CDFW 2010; SWRCB 2010 2018 2023; USEPA 2024 the results of adopting Alternative 1 would be catastrophic for endangered fish and would not comply with the Endangered Species Act. Alternative 1 would eliminate or reduce a host of standards and requirements that are necessary (though insufficient) to reverse the downward trend toward extirpation and extinction for the listed fish species of San Francisco Bay the Delta and their watershed. Initially the same problems with temperature and other modelling described above (see e.g. III.A.1 re Chinook Salmon Temperature analysis) apply to the analysis of Alternative 1. However given the additional negative impacts this alternative would cause as compared to the NAA the Proposed Project and Alternative 3 even the flawed analysis contained in the DEIS demonstrates that Alternative 1 is quantitatively and qualitatively worse than the other alternatives and the NAA. Moreover the results are clear: mean population growth for Delta Smelt is far worse under Alternative 1 than the NAA (Figure 1 supra; Attachment	Alternatives 1 and 4 have not been rejected and are fully evaluated in the Draft EIS, though neither has been identified as the Preferred Alternative. Reclamation operates and would operate LTO in compliance with federal laws such as the ESA.

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	F.4 Table F.4-5); change in Longfin Smelt abundance is markedly worse under Alternative 1 than under the NAA (Figure 2 supra Source data from DEIS Appendix AB-J attachment J.1 provided by BOR); and Longfin Smelt salvage is predicted to be substantially higher under Alternative 1 than under the NAA and would be materially higher than the Proposed Project alternatives (Table 3 supra; Appendix AB- I attachment I.4). Similarly TDM [Temperature Dependent Mortality] of winter-run Chinook Salmon eggs would be markedly higher under Alternative 1 than under the NAA (Appendix AB-L attachment L.2 Table L.2-2) and life- cycle modeling indicates that abundance of this unique salmon population will drop precipitously (Appendix F Attachment F.5 Table F.5-12)In short Alternative 1 demonstrates: (a) a new substantially more protective Bay-Delta Water Quality Control Plan is urgently needed; (b) non-flow measures do not protect restore or support endangered fish populations; and (c) ESA protections are necessary and vital to avoid continued loss and harm to the Bay-Delta's endangered fish. Alternative 1 is correctly rejected as it does not comply with the ESA.	
68-93	B. Alternative 4 is Both Under-analyzed and Properly Rejected. DEIS Alternative 4 where it is analyzed is relatively similar to Alternative 2 generally worse than the NAA and far less protective than Alternative 3. (See e.g. Figure 1 supra; Figure 2 supra; Figure 3 supra and Table 3). Additionally as in the rest of the analyses in the DEIS the problems with temperature and other modelling described above (see e.g. III.A.1 re Chinook Salmon temperature analysis) apply to the analysis of Alternative 4 where it was performed. However given the relative negative impacts this alternative would cause as compared to the NAA and Alternative 3 even the flawed	Alternative 4 has not been rejected and is fully evaluated in the Draft EIS, though it is not the Preferred Alternative. In accordance with NEPA, all the alternatives in the Draft EIS have been analyzed to the same level of detail. Please refer to Chapters 4–21 and corresponding appendices for the analysis of potential impacts associated with the alternatives.

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	analyses contained in the DEIS demonstrate that Alternative 4 is insufficient to protect endangered species.	
68-94	IX. The DEIS Lacks Proper Analysis of Severe Impacts to Indian Trust Assets and Cultural Resources. Indian Trust Assets ("ITAs") and cultural resources are invaluable to the Native American tribes in California. The DEIS discussion and analysis of the impacts to ITAs and cultural resources requires further development. Chapter 7: Indian Trust Assets fails to adequately analyze the ITAs that are within the study area. Chapter 8: Cultural Resources fails to adequately discuss Native American history in California and the BOR must adhere to all federal policies and guidelines meant to protect cultural resources. Ultimately the No Action Alternative and action alternatives fail to propose mitigation measures in the analysis of each topic. The analysis of both Indian Trust Assets and cultural resources relies on the No Action Alternative. These comments have highlighted the improper reliance on the 2020 Record of Decision and 2019 Biological Opinions and therefore the analysis of impacts under the No Action Alternative needs to be reevaluated. Given the status of current operations further analysis is required for the No Action Alternative and its potential impacts to ITAs and cultural resources in order to comply with federal law. The analysis for the action alternatives should also be reexamined as they are based on changes from the No Action Alternative.	The ITAs within the study area that are affected by changes in water quality, erosion, and salmon populations that would be affected by project operations have been addressed and analyzed in the EIS. The No Action Alternative effects on ITAs were analyzed under the 2019 Long-term operations NEPA documents under Alternative 1. These documents and thus their analyses were incorporated by reference into the DEIS.
68-95	A. The DEIS Must Adequately Analyze the Impacts to Indian Trust Assets. The DEIS states "the U.S. Government's trust responsibility for Indian resources requires BOR and other agencies to take measures to protect and maintain trust resources. These responsibilities include taking reasonable actions to preserve and restore tribal resources." (DEIS Indian Trust Assets p. 7.1; Appendix J p. J-4) (emphasis added). ITAs	There may be Indian Trust Assets (ITAs) located within the vicinity shared by the commenter, which is north of the Delta, but those ITAs are not impacted by the alternatives. Additionally, municipalities are responsible for water quality once CVP water has been transferred to the municipality. The remaining ITAs within the study area that are affected by

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	can include land minerals federally reserved hunting and fishing rights federally reserved water rights and in-stream flows associated with trust land. (DEIS Indian Trust Assets p. 7.1).1. Federal reserved rights Federal reserved rights as established by Winters v. United States 207 U.S. 564 (1908) applies to certain federal lands including tribal reservations. Several tribes in California have established federally reserved water rights. Under Winters federally reserved rights are not based upon actual uses and therefore cannot be lost through non-use. Once quantified it is possible for the place of use and nature of use to be changed. (Winters v. U.S.1908). The DEIS incorrectly makes the claim that "[t]here are no ITAs in the rivers in the Central Valley that would be affected by the project." (DEIS Appendix J p. J-8). The DEIS further states that impacts on existing ITAs would be considered adverse if the action interfered with a federally reserved right or degrades the water quality there is a federally reserved right. (DEIS Appendix J p. J-7) An example of one tribe that has ITAs in the Central Valley is the Cachil [Footnote 42: Band of Wintun Indians of the Colusa Indian Community ("Cachil [Footnote 43: Band"). The Cachil [Footnote 44: Band's traditional homelands are within the Sacramento River Basin and was formally recognized in 1941. [Footnote 45: U.S. Dep't of the Interior Office of Indian Affairs. "Constitution and By-laws for the Cachil Dehe Band of Wintun Indians of the Colusa Indian Community" (Nov. 23. 1941) https://tile.loc.gov/storage-services/service/ll/llscd/42038591/42038591.pdf; See also U.S. Dep't of the Interior Office of Indian Affairs. "Corporate Charter of the Cachil Dehe Band of Wintun Indians of the Colusa Indian Community" (Nov. 23. 1941) https://maint.loc.gov/law/help/american-indian-consts/PDF/42038471.pdf.] In the adopted Constitution and By-Laws the tribe's jurisdiction is noted as extending to all lands	changes in water quality, erosion, and salmon populations that would be affected by project operations have been addressed and analyzed in the EIS.

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	then within the confines of the Colusa Rancheria and Reservation and to land that would be added. [Footnote 46: U.S. Dep't of the Interior Office of Indian Affairs. "Constitution and By-laws for the Cachil Dehe Band of Wintun Indians of the Colusa Indian Community" (Nov. 23. 1941) https://tile.loc.gov/storage-services/service/ll/llscd/42038591/42038591.pdf.] The original 80-acre Reservation was located along the Sacramento River and subsequently another 410 acres were added. [Footnote 47: Colusa Indian Community Council. "Heritage." (2013) https://www.colusa-nsn.gov/government/heritage.; See also J. Paul Getty Trust & Getty Research Institute. Getty Thesaurus of Geographic Names. "Colusa Rancheria (Indian reservation (Native American reservation))." (2004). https://www.getty.edu/vow/TGNFullDisplay?find=Washington&place=national+capital&nation=&english=Y&subjectid=9226953.] The tribe also draws drinking water from groundwater which is also protected under Winters. Additionally the Kletsel Dehe Wintun Nation that live on the Cortina Reservation also use groundwater as a water supply. (Yates 1989) Accordingly the Cachil Dehe Band and Kletsel Dehe Wintun Nation should have ITAs identified within the study area of the Proposed Action. The changes in operations of the CVP and SWP would directly impact the Sacramento River and may change groundwater resources in the Central Valley. (DEIS Groundwater p. 6-1) Therefore it can be assumed that the Proposed Action has potential to impact ITAs that exist in the Central Valley. Appendix J Table J-2 Impact Summary shows that under all alternatives including the No Action Alternative there are "no anticipated changes expected" for "potential chances in quality of water used by a federally recognized tribe." (DEIS Appendix J pp. J-12-14). However this analysis is based on the incorrect conclusion that there are not ITAs in the	

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	Central Valley. There are at least two federally recognized tribes obtaining their water via groundwater and BOR has a federal responsibility to protect and preserve those water sources. The BOR must adopt an alternative which analyzes and provides mitigation measures for the impacts to water quality of federally reserved water in the Central Valley.	
68-96	2. Tribally reserved fishing rights Tribally reserved fishing rights are established for tribes in the Klamath River Basin. This is significant because the CVP and SWP are connected to the Klamath River via the Trinity River diversion. The tribally reserved fishing rights are significant for the tribes in the Klamath River Basin because salmon are an important cultural resource. Many of California's tribes have ceremonies and traditions centered around salmon and it is an important cultural resource. Ensuring healthy salmon populations is vital for protecting and preserving tribal cultural resources. The Preferred Alternative would have adverse effects on spawning and incubating Southern Oregon/Northern California Coast Coho Salmon. (DEIS Appendix J-9) It is well known that salmon populations are suffering. Returns have been so low that the salmon fishing season has been closed for the second year in a row. Mismanagement of water resources more frequent drought less predictable precipitation patterns loss of adequate habitat and many other factors are contributing to the drastic population decline of recent years. Federal and state agencies must avoid taking any actions that could contribute to the population decline. Alternative 3 must be the preferred alternative because it will benefit salmon and provide healthy habitat in the form of high flows and better water quality.	Support for Alternative 3 is noted. The effects of the project on the Trinity River salmon were analyzed in Appendix O, Fish and Aquatic Resources Technical Appendix, and summarized in Chapter 12, Fish and Aquatic Resources, of the Draft EIS. The results of these analyses were then used in the analysis conducted to analyze the effects to the salmon ITA that affects the Tribally reserved fishing rights in the Trinity River basin. Specifically, Chapter 7 of the Draft EIS noted that Alternative 2 with TUCP without VA and Alternative 4 would have minor adverse effects on the federally recognized Tribes that have fishing rights for Coho salmon. Please refer to Standard Response 8, Trinity River Division, regarding the consideration of Trinity River operations in the EIS and future environmental review processes anticipated for the Trinity River.
68-97	3. Tribal lands	The impacts to ITAs under the project alternatives are similar to those under the No Action Alternatives, and therefore do not

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	There are many tribes listed in Table J.1 and the study area encompasses land occupied by more than 40 distinct Native American "cultural groups." (DEIS Appendix J p. J-4; Cultural Resources p. 8-1). Through erosion or degradation the No Action Alternative may potentially impact the land or sites of religious or cultural importance to federally listed tribes quality of water used by tribes and salmonoid populations. (DEIS Indian Trust Assets p. 7-3). The Proposed Action has potential for increased erosion as compared to the No Action Alternative. (DEIS Appendix J p. J-12) The CVP and SWP has impacted traditional homelands of both federally listed and non-listed tribes since their construction. Over time operation has impacted the traditional homelands of many tribes throughout California and continued operation would still impact tribal lands and tribal resources. As noted above the federal government is required to take measures to protect maintain preserve and restore tribal resources. (DEIS Indian Trust Assets p. 7-1). However for ITAs the DEIS states that "no avoidance and minimization or additional mitigation measures have been identified." (DEIS Indian Trust Assets p. 7-3). The BOR must prioritize an alternative that recognizes its duty to protect Indian Trust Assets that exist within the study area.	require mitigation measures.
68-98	B. The DEIS Discussion on Cultural Resources is Insufficient and Must Thoroughly Analyze the Impacts to Cultural Resources and Provide Mitigation Measures. 1. Chapter 8: Cultural Resources requires extended discussion of California's history as it relates to Native Americans. When discussing the Indigenous people that have lived on the land that is now California it is necessary that the appropriate language is used to describe them. While the term "Indian" is used in the titles of some federal regulations and policies it should be avoided in all other contexts. In the second	The commenter's statement regarding nomenclature in Chapter 8, Cultural Resources, and Appendix K, Cultural Resources Technical Appendix, are noted. Descriptions have been changed to "Native American" or other appropriate language wherever possible.

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	paragraph of 8.1 Affected Environment "Indian" is used out of the context of any federal regulation or policy and therefore must be changed. Additionally the people that resided on the land prior to the continent being named North America should be called Indigenous people not "prehistoric people." (DEIS Appendix K p. K-2).	
68-99	Furthermore there is a lot of missing information related to Native American's and California history in the description of the Affected Environment. (DEIS Cultural Resources p. 8-1). NEPA regulations require an EIS contain analysis of "possible conflicts between the proposed action and the objectives of Federal regional State Tribal and local plans polices and controls for the area concerned." 40 C.F.R. 1502.16(s)(4). That has not occurred here. The timeline of the affected environment skips from 8000 years ago to 1769. (DEIS Cultural Resources p. 8-1). Millenia of Indigenous occupation of present-day California is excluded from this discussion that is meant to focus on the cultural resources of these specific people. The tribal histories that are provided in Appendix K provides much needed context even in an abbreviated form. The primary description of the history of the area fails to recognize the significance of Indigenous people in California prior to the invasion of European colonizers and more of the historical discussion in Appendix K must be included. The description of the events that transpired after the 1769 invasion of Europeans fails to account for the extensive harm that was inflicted on Native American people, their culture, and their cultural resources. The DEIS stats that the period after 1769 was characterized by "the establishment [of] military presidios development of large tracts of land owned by the missions and subjugation of the local Indian population for labor." Id. (emphasis added) However the local tribes suffered much more than subjugation for labor. The	The Draft EIS concludes in Section 8.2.1 that Alternatives 1 through 4 do not have the potential to adversely affect historic properties, if they are present, because no actions would result in alteration, damage, or demolition of historic properties. “River flows would generally be within the range of fluctuations occurring under the No Action Alternative. Therefore, Alternatives 1 through 4 do not have the potential to adversely affect historic properties, if they are present, because no actions would result in alteration, damage, or demolition of historic properties.”

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	mission system that was established by the Spanish colonizers resulted in enslavement indoctrination removal from traditional lands destruction of culture (ceremonies cultural resources language etc.) and the introduction of fatal diseases all of which contributed to the catastrophic loss of life for Indigenous Californians. The growing population of settlers contributed to further loss of tribal lands and populations due to relocation and extermination policies promulgated by the state and federal governments. The DEIS states that the "study area encompasses lands occupied by more than 40 distinct Native American cultural groups." (DEIS Cultural Resources p. 8-1). Appendix K provides the ethnographic context for 20 tribes whose traditional homelands are included in the study area. (DEIS Appendix K p. K-4). Some of the brief descriptions of those 20 tribes include the importance of local waterways to the tribe its culture and its traditions. (DEIS Appendix K pp. K-48). In most of the descriptions many of the tribes are known to have lived near rivers or other bodies of water therefore there are likely many village sites with cultural resources nearby that exist along the waterways that are and will be impacted by the CVP and SWP. Id. so many Native people within the study area it is unrealistic that the project would not greatly impact cultural resources of those tribes. The BOR must adopt an alternative that incorporates complete historical analysis to protect cultural resources that exist near any and all impacted waterways within the study area.	
68-100	2. The DEIS fails to consider all national policies regarding all types of cultural resources. The DEIS claims that because there is no ground disturbance involved in the Action Alternatives the potential impacts would come from inundations or exposure of buried archaeological historic properties in a way that would cause damage or destruction to those properties. (DEIS Cultural	For all four alternatives analyzed in Chapter 8, Cultural Resources, it was determined that levels of water fluctuation would not exceed the No Action Alternative fluctuation range. Therefore, the Draft EIS concludes in Section 8.2.1 that Alternatives 1 through 4 do not have the potential to adversely affect historic properties, if they are present, because no actions would result in alteration,

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	Resources p. 8-2).Under the National Historic Preservation Act ("NHPA") [Footnote 48: National Historic Preservation Act 36 CFR 800.] the BOR must comply with Section 106 which includes "identifying consulting and interested parties delineating and area of potential effects identifying historic properties withing the area of potential effects and assessing effects on any identified historic properties and resolving adverse effects through consultations with the State Historic Preservation Officer Indian tribes and other consulting parties." (DEIS Cultural Resources p. 8-2). As such the BOR must conduct tribal consultation with the tribes within the study area and the tribes listed in Appendix J Table J-1 all of whom can be classified as interested parties. There are several federal policies and memoranda that detail what is necessary for adequate government to government consultation between federal agencies and tribes. [Footnote 49: See Executive Order 13175 Consultation and Coordination with Indian Tribal Governments 65 FR 67249 (Nov. 6 2000); Presidential Memorandum on Tribal Consultation (Nov. 5 2009); Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships (Jan. 26 2021); Memorandum on Uniform Standards for Tribal Consultation (Nov. 30 2022); Dept. of Interior Dept. Manual "Department of the Interior Policy on Consultation with Indian Tribes" 512 DM 4 (Nov. 30 2022).] The BOR must adhere to these policies in addition to NHPA in its development of the DEIS and should disclose whether that consultation with federally listed tribes has or has not occurred.	damage, or demolition of historic properties. Refer to the EIS Chapter 23, Other NEPA Considerations, Section 23.4, Consultation and Coordination, regarding Reclamation's coordination with interested parties, including tribal consultation.
68-101	According to the DEIS the No Action Alternative and condition changes due to climate change are predicted to result in more frequent shorter-duration high-rainfall events and less snowpack in the winter and early spring. (DEIS Cultural Resources p. 8-2). Ultimately the changing climate has the	Impact assessment in Chapter 8, Cultural Resources, is limited to consideration of effects to existing or potential cultural resources related to changes in Central Valley Project (CVP) and State Water Project (SWP) operations. Potential changes in rainfall and snowpack levels due to climate change would not occur as a result

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	potential to decrease reservoir levels which could affect areas that were previously inundated. As a result cultural resources may become exposed. Id. Despite the known potential impact to cultural resources the DEIS states that there are "[n]o avoidance and minimization measures or mitigation measures" that have been identified for cultural resources. (DEIS Cultural Resources p. 8-3). With the knowledge that climate change has the potential to affect cultural resources in this manner there should be mitigation measures proposed. However there are none in the No Action Alternative or any of the action alternatives. The DEIS must use an alternative that incorporates mitigation measures for these irreplaceable resources that have the potential to be impacted.	of changes to CVP and SWP operations and therefore was not considered during assessment of impacts. Please refer to Standard Response 9, Climate Change, regarding the consideration of climate change in the analysis provided in the EIS.
68-102	The DEIS states that the No Action Alternative is not expected to affect historic properties. Id. Cultural resources are not only classified as "historic properties." In a 1993 study of Environmental Impact Statements and Environmental Assessments when the documents defined cultural resources directly or implicitly it was found that a "cultural resources is generally understood to mean a piece of real or personal property that is eligible for consideration under another statute dealing with historic preservation archaeology or Native American graves" (King 1998).In addition to NHPA which applies to historical properties the Archaeological Resources Protection Act ("ARPA") prohibits the excavation removal or damage of archaeological resources on federal public lands of Native American tribal lands. (See Archaeological Resources Protection Act 16 U.S.C. 470aa et seq.). With the potential that cultural resources may be exposed by the change in reservoir levels or erosion precautions and mitigation measures must be implemented to protect the cultural resources that are protected under ARPA. The Native American Graves Protection	The EIS analyzes potential impacts of the proposed alternatives in comparison to the No Action Alternative. For alternatives analyzed in Chapter 8, Cultural Resources, it was determined that water fluctuation levels would not exceed the No Action Alternative. Therefore, the Draft EIS concludes in Section 8.2.1 that Alternatives 1 through 4 do not have the potential to adversely affect historic properties, if they are present, because no actions would result in alteration, damage, or demolition of historic properties.

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	and Repatriation Act ("NAGPRA") applies to "Native American cultural items" rather than specific locations and requires federal agencies to return any discovered items to the federally listed tribe that the items come from. (See Native American Graves Protection and Repatriation Act 43 CFR 10 et seq.). Similar to the discussion on ARPA there is the potential for cultural items protected under NAGPRA (human remains funerary objects sacred objects of cultural patrimony) to be exposed with the continuation of operations or under the Proposed Alternative there must be mitigation measures put in place to prevent violations of NAGPRA in future operations. Lastly the American Indian Religious Freedom Act ("AIRFA") states that the federal government must protect the inherent rights of Native American tribes to the free exercise of their traditional religions. (See American Indian Religious Freedom Act 42 U.S.C. 1996). AIRFA is an important policy to consider because traditional Native American religious and ceremonial practices are frequently tied to a location or an aspect of the environment like a waterway and are essentially place-based cultural resources. For example the Yurok Tribe's creation stories include the Klamath River and the river is an integral part of Yurok culture that includes use of canoes on the river to gather cultural food and materials and travel for ceremonial purposes. Id. Protection of flows and clean water are a necessity for the Yurok people and their religion and must be protected as an inherent right. Additionally the Hoopa and Karuk Tribe's culture and traditional stories emphasize the important and intimate relationship of the people salmon and the Klamath River. Id. AIRFA also requires BOR to consult with federally listed tribes when a proposed action might affect traditional religious practices (King 2000). The DEIS discussion and analysis recognizes the potential for impacts to cultural resources therefore Reclamation must revise the DEIS to include	

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	mitigation measures to ensure protection and preservation of all cultural resources. The No Action Alternative and Proposed Action are currently insufficient because they fail to provide mitigation measures for cultural resources. The BOR must prioritize an alternative that provides mitigation measures for impacts to cultural resources.	
68-103	X. The Proposed Action has Unreasonable Impacts to Environmental Justice Communities and Exacerbates Public Health Issues. The coordinated operations of the SWP and CVP have extensive and significant environmental impacts that are contributing to the degradation of ecosystems that communities otherwise rely on as a source of drinking water, nutrition, recreation, and leisure among other uses. Since the previous update to the operations plan in 2019 beneficial uses of water for communities remain impaired. The DEIS fails to acknowledge significant impacts to environmental justice communities worsening disparate impacts. Reductions in freshwater flow have caused a cascade of ecological impacts in the Bay-Delta including altered salinity levels, higher water temperatures, changes to water circulation patterns, increased concentration of pollutants, alteration of dissolved oxygen and other water quality parameters, disruption of fish migratory routes and nursery conditions, and habitat loss. Poorly managed releases from upstream dams and reduced inflows coupled with diversions and export of water also alter peak base and pulse flows to which aquatic species are adapted. The changes to stream hydrology and water quality caused by reduced flows have caused fish populations to plummet. According to the State Water Board the best available science demonstrates that current flow conditions if not corrected will result in permanent impairment to the Bay-Delta's native fish and wildlife populations as well as other public trust resources.	Draft EIS Chapter 4, Water Quality, and supporting Appendix G, Water Quality Technical Appendix, contain analysis of the effects of each alternative on the salinity parameters electrical conductivity (EC), chloride, and bromide in the Bay-Delta, based on output from Delta Simulation Model II (DSM2), which is a hydrodynamic and water quality model of the Delta. Inputs to DSM2 include Delta inflows, outflows, and exports, modeled using the hydrologic model CalSim 3. The period of record modeled was water years 1921 through 2021. Therefore, the Draft EIS addresses the effects the alternatives could have on Delta inflows and associated effects on Bay-Delta salinity. Chapter 4 and Appendix G also address how different inflows under the alternatives could affect hydraulic residence time in the Delta in the context of potential effects on cyanobacteria harmful algal blooms (CHABs). The Draft EIS concluded that there would not be an increased risk of CHABs in the Bay-Delta under Alternative 2, as described in Chapter 4, Section 4.2.3.5, Cyanobacteria Harmful Algal Blooms. Please refer to response to comment 68-13 for additional information regarding how the Draft EIS addressed potential effects of the alternatives on potential for increased public exposure to cyanotoxins and the results of the analysis. Regarding mercury and methylmercury, modeling results presented in Chapter 4, Section 4.2.3.4, Methylmercury, and

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	A. Reduced Freshwater Flows Impact Environmental Justice Communities in the Delta. The DEIS fails to analyze the adverse effects of reduced freshwater flows on environmental justice communities in the Delta including the potential for increase in reverse flows worsening salinity and changes to residence time creating inadequate conditions for the river's ecosystems and subsistence fishing species that Delta communities rely on. In the "In the Your Delta Your Voice" report prepared by DWR 90 percent of Delta Environmental Justice respondents disclosed that they rely on Delta fish to feed their families on a nearly costless basis. (DWR 2021). The Delta is home to a large population of underrepresented and economically disadvantaged communities who traditionally rely on fisheries for cultural ceremonies cultural preservation consumption sports and leisure. The DEIS's "Potential Disproportionate Economic Effects on Minority or Low-Income Populations" does not evaluate public health impacts or the financial burden communities face from declining fish populations and reduced subsistence fishing opportunities nor does it attempt to quantify to what extent proposed alternatives would exacerbate already-existing hardships. Coordinated project operations increase the presence of water contaminants. As explained earlier in these comments the Bureau has not developed a plan through the Proposed Action that does not continue to violate water quality standards. Therefore under the Proposed Action there is an increased presence of contaminants such as selenium mercury and cyanotoxins. In turn this could lead to a number of human health impacts. First the increase of those contaminants could increase food web pathways to humans relying on subsistence fishing. Nitrogen a key nutrient in the formation of HABs could also contribute to the formation of methylmercury. The bioaccumulation of methylmercury in fish tissue derived from the consumption of contaminated lower	Appendix G, showed that Delta water column concentrations of mercury and fish tissue concentrations of methylmercury under Alternative 2 would differ little from the No Action Alternative and that existing impairments would not be made worse. Similarly, regarding selenium, modeling results presented in Appendix G showed that Delta water column concentrations and concentrations in whole-body fish, fish fillets, bird eggs, and whole-body sturgeon under all alternatives would differ little from the No Action Alternative and would not result in increased health risks to wildlife or humans consuming wildlife associated with whole-body fish, fish fillets, bird eggs, and whole-body sturgeon. Regarding nutrients, as described in Appendix G, the alternatives would not contribute to differences in Bay-Delta nutrient concentrations or in nutrient distributions that would substantially degrade water quality or result in Draft EIS Chapter 4, Water Quality, and supporting Appendix G, Water Quality Technical Appendix, contain analysis of the effects of each alternative on the salinity parameters electrical conductivity (EC), chloride, and bromide in the Bay-Delta, based on output from Delta Simulation Model II (DSM2), which is a hydrodynamic and water quality model of the Delta. Inputs to DSM2 include Delta inflows, outflows, and exports, modeled using the hydrologic model CalSim 3. The period of record modeled was water years 1921 through 2021. Therefore, the Draft EIS addresses the effects the alternatives could have on Delta inflows and associated effects on Bay-Delta salinity. Chapter 4 and Appendix G also address how different inflows under the alternatives could affect hydraulic residence time in the Delta in the context of potential effects on cyanobacteria harmful algal blooms (CHABs). The Draft EIS concluded that there would

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	trophic species could reduce spawning success and reduce fertility in fish and could also contribute to a variety of human health risks. As described earlier in comment Section III the Proposed Action has the potential to worsen already devastating fishery conditions and thus threaten public health in communities that have limited access to healthcare. An increased threat from consuming contaminated fish has the potential of going undocumented because of the lack of resources. The DEIS lacks an analysis of the potential impact to communities from increased bioaccumulation of toxins in fish and we urge Reclamation to add this analysis in the revised and recirculated DEIS.	not be an increased risk of CHABs in the Bay-Delta under Alternative 2, as described in Chapter 4, Section 4.2.3.5, Cyanobacteria Harmful Algal Blooms. Please refer to response to comment 68-13 for additional information regarding how the Draft EIS addressed potential effects of the alternatives on potential for increased public exposure to cyanotoxins and the results of the analysis. Regarding mercury and methylmercury, modeling results presented in Chapter 4, Section 4.2.3.4, Methylmercury, and Appendix G, showed that Delta water column concentrations of mercury and fish tissue concentrations of methylmercury under Alternative 2 would differ little from the No Action Alternative and that existing impairments would not be made worse. Similarly, regarding selenium, modeling results presented in Appendix G showed that Delta water column concentrations and concentrations in whole-body fish, fish fillets, bird eggs, and whole-body sturgeon under all alternatives would differ little from the No Action Alternative and would not result in increased health risks to wildlife or humans consuming wildlife associated with whole-body fish, fish fillets, bird eggs, and whole-body sturgeon. Regarding nutrients, as described in Appendix G, the alternatives would not contribute to differences in Bay-Delta nutrient concentrations or in nutrient distributions that would substantially degrade water quality or result in adverse effects on beneficial uses relative to the nutrient conditions that would occur under the No Action Alternative. Please see Standard Response 5, Adequacy of Analysis and Mitigation, for additional information regarding the adequacy of the analysis in the EIS.

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		Regarding impacts on Delta fish species, there are several analyses that cover impacts to the four runs of Chinook salmon, green and white sturgeon, Delta smelt, longfin smelt, and several other native species of concern present in the Bay-Delta in Appendix O, Fish and Aquatic Resources Technical Appendix. A broad summary of the impacts on Bay-Delta species can be found in Chapter 12, Fish and Aquatic Resources. For discussion on adverse impacts to fish species, please see Standard Response 7, Aquatic Resources.
68-104	B. Risk of Harmful Algal Blooms and Associated Economic Impacts Are Increased. Additionally under all four variants of the Proposed Action the occurrence of Harmful Algal Blooms (HABs) will be more frequent and extensive creating hazardous conditions and exacerbating air and water pollution in already-impacted communities. The World Health Organization considers cyanobacterial toxins to be "among the most toxic naturally occurring compounds." (Chorus and Welker 2021). The DEIS recognizes the occurrence of HABs "throughout the southern and central Delta including in Discovery Bay at several locations along the San Joaquin River and at locations along the Stockton waterfront." However there is no mention of how the Proposed Action would impact the existing public health issue of exposure to cyanotoxins by drinking swimming or bathing in affected waters eating contaminated fish or shellfish or inhaling aerosolized particles. As noted extensively in comment Section III and in other sections the Proposed Action will reduce freshwater flows into the Delta which would worsen conditions and these associated public health concerns. Steps necessary to mitigate reduce and eliminate HABs in the Delta must be integrated into the operations of the SWP and CVP. Increased salinity and presence of HABs would increase water treatment cost and potentially impose water rate hikes to cover those	Contrary to the commenter's assertions, impacts from CHABs are discussed at the project level in addition to the cumulative impact analysis quoted in the comment. CHABs are addressed in Appendix G, Water Quality Technical Appendix; Chapter 4, Water Quality; Appendix X, Public Health and Safety Technical Appendix; Chapter 21, Public Health and Safety; and specifically Chapter 21, Section 21.2.3. That analysis notes that Alternatives 1, 2, and 4 would not increase the potential for public Contrary to the commenter's assertions, impacts from CHABs are discussed at the project level in addition to the cumulative impact analysis quoted in the comment. CHABs are addressed in Appendix G, Water Quality Technical Appendix; Chapter 4, Water Quality; Appendix X, Public Health and Safety Technical Appendix; Chapter 21, Public Health and Safety; and specifically Chapter 21, Section 21.2.3. That analysis notes that Alternatives 1, 2, and 4 would not increase the potential for public exposure to cyanotoxins in the study area and there would be no associated adverse effects. It also concludes that Alternative 3 is expected to make CHABs worse in the Delta and Suisun Marsh. Because it is not known where in the Delta CHABs could potentially be made worse by implementation of Alternative 3, due to reductions in Sacramento River and San Joaquin River flows entering the Delta, it would be speculative to attempt to apply any

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	rising costs. Increased water rate hikes would disproportionately impact environmental justice ratepayers in communities affected by these adverse changes in local drinking and surface water quality. Communities struggle with access to safe water and access to Delta waterway commons. The SWP and CVP have exploited Delta exports and communities have been left with degraded water quality worsening environmental and public health stressors that impair public access to waterways. Proposed operations must demonstrate methods to remedy the ecological conditions that result in disparate impacts that restrict environmental justice and tribal communities from utilizing public trust resources. In addition agricultural labor in the Delta is impacted by changes to Delta water quality for irrigation. Worsening water quality directly harms crop production and variety leading to reductions in the agricultural workforce which is comprised of numerous environmental justice community members. The DEIS fails to properly evaluate worsening salinity HABs proliferation and other water quality conditions and does not recognize the potential impacts to public health and economic impacts to environmental justice communities. Proposed alternatives resulting in the degradation of water quality which is every Alternative other than Alternative 3 are not lawful under the federal Clean Water Act the state Porter-Cologne Water Quality Control Act and State Water Board Resolution 68-16.	degree of specificity to the public health analysis regarding potential effects on environmental justice (or other) communities due to direct or indirect exposure to cyanotoxins. Not only are there multiple factors that influence the growth of cyanobacteria and production of cyanotoxins in the Delta and elsewhere, but there are also several factors that influence the potential for illness from exposure to cyanotoxins (e.g., type and amount of cyanotoxin, exposure route, concentration and duration of exposure, individual susceptibility to potential adverse reactions to exposure). Further, there is a lack of comprehensive, routine monitoring for CHABs in the Delta. Without this, it is difficult to fully anticipate when and where blooms will occur, predict what populations may be exposed and how, or predict exposure levels.
68-105	C. Justice 40 Criteria Are Not Addressed In April 2023 President Biden signed Executive Order 14096 to expand the nation's commitment to environmental justice broadening the scope of his earlier signed Executive Order 14008 in regard to tackling the climate crisis. In regard to its climate change analysis and lack of Justice 40 criteria examination the DEIS fails to meet the requirements of the	New implementing regulations from the Council on Environmental Quality (CEQ), effective July 1, 2024, aim to facilitate more successful NEPA implementation and a more comprehensive analysis of environmental justice impacts (https://ceq.doe.gov/docs/laws-regulations/NEPA-Implementing-Regulations-Desk-Reference-2024.pdf). This EIS's Notice of Intent

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	Justice 40 initiative. The overall goal of Justice 40 is that 40 percent of the overall benefits of certain Federal climate clean energy affordable and sustainable housing and other investments flow to disadvantaged communities that are marginalized by underinvestment and overburdened by pollution. A Justice 40 covered program is defined as a "Federal government program that falls in the scope of the Justice40 Initiative because it includes investments that can benefit disadvantaged communities across one or more of the following seven areas: climate change clean energy and energy efficiency clean transit affordable and sustainable housing training and workforce development remediation and reduction of legacy pollution and the development of critical clean water and wastewater infrastructure." https://www.whitehouse.gov/environmentaljustice/justice40/Specifically BOR has listed that Watershed Projects fall under Justice 40 guidelines and lists five other program areas that dovetail with proposed operations of the CVP. These additional program areas include Authorized Rural Water Projects; IRA - Domestic Water Supply Projects; Native American Affairs Program; Other Water Infrastructure Activities; Tribal Water Rights Settlements; and WaterSMART. Additionally Justice 40 specifically calls for agencies to conduct abundant outreach using the Climate and Economic Justice tool to disadvantaged and impacted communities to participate in and evaluate covered projects. To date no such abundant outreach has been conducted by BOR regarding long term operations of the CVP. The DEIS ignores any discussion of coordinated CVP operations as a Watershed Project and only Alternative 3 reduces GHG emissions. Instead BOR has chosen a preferred alternative that fails to meet the criteria of Executive Order 14008. The DEIS also fails to delineate how 40 percent of the benefits of the Long Term Operations Plan assist impacted tribes and environmental	was issued on February 28, 2022, prior to the issuance of these new implementing regulations (which were published on May 1, 2024). As explained in the introduction to the responses to comments, the analysis in this EIS relies on the CEQ NEPA regulations that took effect on May 20, 2022. However, the analysis in Chapter 18 Environmental Justice and its corresponding appendix (Appendix T) was conducted to be consistent with the intent of the new implementing regulations that took effect in July 2024 as they relate to environmental justice. Reclamation undertook this additional effort given the emphasis of the new regulations on improving the environmental justice analysis in NEPA compliance documents.

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	justice communities located in the Bay-Delta watershed and tributaries. Almost all environmental and economic benefits from the LTO are directed away from these communities yet declining fisheries the proliferation of harmful algal blooms and degraded water quality will all worsen within the watershed with implementation of Alternative 2. For all these reasons the DEIS's evaluation of impacts to environmental justice communities is inadequate and must be revised in the updated recirculated document.	
68-106	XI. The DEIS's Analysis Cannot Include Potential New Infrastructure that is Speculative and Not Reasonably Certain to Occur. As we noted in scoping comments submitted in 2022 the DEIS should not include potential new infrastructure that is speculative and not reasonably certain to occur. [Footnote 50: Both of these projects require a substantial increase in funding are still in the midst of environmental review and will face legal challenges rendering the prospect of these projects speculative and inappropriate to include in DEIS analysis beyond the cumulative impacts analysis.] Here this specifically applies to the Delta Conveyance Project and the proposed Sites Reservoir due to their operational complexity and inadequate temporal scope of this ESA section 7 consultation. Unfortunately the DEIS includes both of these proposed projects and applies a "programmatic" approach. (DEIS Chapter 3 p. 3-59.) This is beyond the mandatory NEPA inclusion in the cumulative impacts analysis. (e.g. DEIS Appendix Z). Just like with the inclusion of the VAs the DEIS is therefore legally deficient due to the inclusion of these projects.	The analysis for the DCP and Sites Reservoir, contained in Appendix Z and Appendix AA, respectively, provides available information to assess how these projects would operate along with Alternative 2, broadly assessing the impacts of the operations of these projects, as they are currently described, in the context of the LTO of the CVP and SWP. The programmatic analysis for these two projects provides information, to the extent possible, on how these key projects would be implemented, if approved. Please refer to Standard Response 10, Voluntary Agreements, regarding the scope and extent of the Voluntary Agreements (AKA Agreements to Support Healthy Rivers and Landscapes) included in Alternative 2 and evaluated in the EIS. Please also refer to Appendix E, Draft Alternatives, regarding justification for including the VAs in the EIS and the conditions in which the CVP and SWP would operate consistent with the VAs.
68-107	Additionally the DEIS fails to consider the cumulative impacts of such projects on the listed species or their habitat in violation of NEPA. (40 C.F.R. 1502.16(a); 1501.3(d)(2)(vi) ("Agencies shall analyze the intensity of effects considering . . . The degree to	Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, for an overview of how the EIS meets NEPA adequacy requirements, including the approach that Reclamation used in preparing the cumulative analysis.

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	which the action may adversely affect an endangered or threatened species or its habitat including habitat that has been determined to be critical under the Endangered Species Act of 1973.) Nothing in these comments in any way waives any of our organizations' rights to comment on the Delta Conveyance Project in any other forum. Reclamation should limit the inclusion of the Delta Conveyance Project and Sites to the cumulative impacts analysis in the revised and recirculated DEIS.	Reclamation added clarifying text to Appendix O, Fish and Aquatic Resources, Section O.10 regarding potential cumulative impacts associated with Sites Reservoir and the Delta Conveyance Project to aquatic resources. Alternative 2 includes DCP and Sites programmatically for analysis consistent with NEPA, and the proposed action submitted for consultation includes these two projects as a mixed programmatic component. The programmatic component is severable if litigation or other factors preclude these projects from implementation. As these projects get closer to implementation, Reclamation will evaluate the need for additional environmental compliance.
68-108	XII. The DEIS Suffers from Additional Important Defects. A. The DEIS Generally Fails to Meet the Intent of the New NEPA Rules Published July 1 2024. While we have appreciated the opportunity to engage in the reconsultation process we want to note that this document was particularly complex long and challenging to review especially within a short time frame. With over 400 pages of the DEIS almost 19000 pages of related Appendices and Attachments "informed" review was close to impossible to achieve for most stakeholders. Additionally this document was also challenging on a most basic level to analyze due to a lack of fundamental analytical conclusions. NEPA regulations state “Agencies shall write environmental impact statements in plain language and should use as relevant appropriate visual aids or charts so that decision makers and the public can readily understand such statements. Agencies should employ writers of clear prose or editors to write review or edit statements which shall be based upon the analysis and supporting data from the natural and social sciences and the environmental design arts." (40 C.F.R. 1502.7) (emphasis	The DEIS includes throughout the document information about the magnitude, direction and context of the changes associated with the reasonable range of alternatives analyzed. The rule (the "Phase 1 Rule") originated from two executive orders (E.O. 13990 and E.O. 14008) issued by President Biden in January 2021, which directed CEQ to review regulations issued during the Trump administration. The Phase 1 Rule represents the first half of a two-phase, comprehensive review of the 2020 NEPA revisions. On April 20, 2022, CEQ published a final rule revising its NEPA regulations. The final rule became effective on May 20, 2022. The Notice of Intent to prepare an EIS was published in the Federal Register on Feb. 28, 2022. The revised 2024 NEPA regulations became effective July 1, 2024, and apply to all project reviews commencing after that date. Agencies maintain discretion to apply the revised NEPA The DEIS includes throughout the document information about

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	added). As detailed more in Section III of these comments and in other sections there was a lack of clarity direct comparative analysis and conclusion about actual impacts of the Proposed Action and other alternatives on the Bay-Delta Estuary Cultural Resources Environmental Justice communities and more. We do not believe the intent of this NEPA regulation was met here and encourage Reclamation to revise and recirculate the DEIS accordingly.	the magnitude, direction and context of the changes associated with the reasonable range of alternatives analyzed. The rule (the "Phase 1 Rule") originated from two executive orders (E.O. 13990 and E.O. 14008) issued by President Biden in January 2021, which directed CEQ to review regulations issued during the Trump administration. The Phase 1 Rule represents the first half of a two-phase, comprehensive review of the 2020 NEPA revisions. On April 20, 2022, CEQ published a final rule revising its NEPA regulations. The final rule became effective on May 20, 2022. The Notice of Intent to prepare an EIS was published in the Federal Register on Feb. 28, 2022. The revised 2024 NEPA regulations became effective July 1, 2024, and apply to all project reviews commencing after that date. Agencies maintain discretion to apply the revised NEPA regulations to pending project reviews. As explained in the introduction to the responses to comments, the analysis in this EIS relies on the CEQ NEPA regulations that took effect on May 20, 2022. However, the analysis in the DEIS was conducted to be consistent with the intent of the new implementing regulations that took effect in July 2024 as they relate to impact descriptions. Please refer to Standard Response 1, General Responses and Comments about Public Outreach regarding the duration of comment period.
68-109	B. Water year "Bin" types Should Not be Used to Compare Between Alternatives. In order to evaluate Delta hydrodynamics nine inflow combinations of high medium and low NAA Delta inflows were created ("inflow bins") as well as OMR [Old and Middle River] intervals ("OMR bins") described in Attachment	Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the methodology and scientific accuracy of the Draft EIS. Reclamation used reliable data and scientific information resources throughout the EIS (40 CFR § 1502.23).

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	I.3. These bins are used to compare the alternatives in numerous places (e.g. DEIS pp. 12-53 through 12-56). We are concerned that these bins are not weighted for frequency and therefore impacts within each bin cannot be compared between alternatives. For example one alternative may have a different proportion of months in a bin than another alternative. Table I.3-5 shows up to 30 percent of the OMR data were excluded for this analysis. In a revised and recirculated DEIS the Bureau should scrap the OMR and "hi-lo" bin comparisons and compare outcomes of Alternatives by water year-types or some other categorization that is not affected by the Alternatives themselves.	Reclamation believes the hydrologic modeling conducted for the alternatives evaluated in the EIS is an accurate representation of project conditions that helps drive an assessment of each alternative at an equal level of detail. Please see Standard Response 6, Hydrologic Modeling and Surface Water Resources, which provides additional background information on the hydrologic modeling conducted for each alternative. The frequency of the bins (Attachment I.3 Delta Export Zone of Influence Analysis, Table I.3-4) is calculated. The bins make the hydrodynamics somewhat discrete for greater relevance to management values and bins are distinguished from each other in analyses.
68-110	C. Consideration of Mitigating Impacts to the Trinity River are Improperly Excluded. The DEIS fails to include any mitigation measures to protect state and federally threatened Coho Salmon or the vitally important commercial recreational and tribal species fall- and spring-run Chinook in the Trinity River. Instead the DEIS defers action on the Trinity River until completion of a subsequent Biological Assessment (BA) Biological Opinion (BO) and possible Supplemental EIS (SEIS) for the Trinity River (DEIS at 0-52). [Footnote 51: "The alternatives in this EIS including the No Action Alternative incorporate the continued implementation of the 2000 Trinity River Mainstem Fishery Record of Decision (2000 Trinity ROD) and the 2017 Long-Term Plan to Protect Adult Salmon in the Lower Klamath River Record of Decision. Changes or impacts described for resources associated with the Trinity Reservoir levels and Trinity River flows have been previously analyzed under the environmental compliance that led to those two Records of Decision. Reclamation is separately and concurrently coordinating with the Hoopa Valley Tribe and the Yurok Tribe as joint leads (40 CFR part 1501) on Trinity River-specific	The alternatives for the EIS include continued implementation of the 2000 Trinity ROD flows. For the steps on future proposed modifications to Trinity River Division operations, please see Standard Response 8, Trinity River Division.

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	considerations to develop potential Trinity River-specific alternatives for an updated operation for releases to the Trinity River and diversions from the Trinity River Basin to the Central Valley. Reclamation also is developing a biological assessment for listed species that are specific to the Trinity River Division and plans to request formal consultation with the appropriate federal resource agencies. Reclamation expects to update the analysis presented in this document to reflect changes in Trinity River Division operations if there are different impacts as a result of decision on the Trinity River Division."] Inadequate temperature requirements inadequate Trinity Lake carryover storage and the impact from the Voluntary Agreements on Trinity Lake coldwater storage are all issues that require immediate mitigation in this DEIS and should not be deferred to a later date.	
68-111	1. Existing temperature problems for Trinity River salmon. The problem with the approach in the DEIS is that current operational conditions and targets for the Trinity River already impact Coho Salmon and Chinook Salmon in the Trinity River and are included in most alternatives. The 56F North Coast Basin Plan temperature objective for the Trinity River (https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/180710/BPChapter3WaterQualityObjectives.pdf) along with the 56F temperature requirement in Water Right Order 90-5 is outdated not based in the best available science and is inadequate to prevent high levels of Temperature Dependent Mortality (TDM) for salmon eggs. As described above the best available science recognizes that Chinook Salmon incubating eggs require temperatures no greater than 53.5F (Martin et al. 2016 2020). Coho Salmon require weekly mean incubation temperatures no greater than 50F and 7-day average of daily maxima no greater than 55.4F	The Water Temperature Objectives for the 40-Mile Reach from Lewiston Dam Downstream to the Confluence with the North Fork Trinity River referenced by the commenter are provided in Appendix O, Fish and Aquatics Resources Technical Appendix, Table O-11 and described in Section O.1.2.1 of the Draft EIS. The No Action Alternative represents what would happen if Reclamation continued to operate under current management direction. For coho salmon, those impacts are described in Section O.3.18.1; for Chinook salmon, those impacts are described in Section O.3.19.1. As noted by the commenter and indicated in the reference for Table O-11, these standards came from NCRWQCB (2018), but Asarian et al. (2023) found that historical data and model results suggest that water temperatures in this reach of the Trinity River generally remain well below the objectives. This is also consistent with Figure O-10, which shows modeled average monthly water temperatures in the Trinity River below Lewiston Dam under all the alternatives, which is modeled to never exceed

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	(Richter and Kolmes 2005). In 2021 a significant portion of Coho Salmon eggs at the Trinity River hatchery were impacted by temperatures well below 56F but greater than 50F (Figure 4). [See original comment for a line graph of Coho salmon egg survival and Trinity River Hatchery water temperatures 2021]Figure 4: Coho Salmon egg survival and Trinity River hatchery water temperatures 2021 (Clifford 2022). Copied from Memorandum to SWRCB From: Justin Ly April 27 2022 re: Comments on Reclamation's draft Sac River Temperature Management Plan. Accessed at: https://ftp.waterboards.ca.gov/Hearing%20Documents%2FParties'%20Hearings%20Exhibits%2FPacific%20Coast%20Federation%20of%20Fisherman%20Association%20Exhibit%2FPCFFA-50%20Justin%20Ly%20to%20SWRCB%202022.pdfAlso the Bureau does not recognize the summer 60F North Coast Basin Plan temperature objective to protect migrating and holding state-threatened Spring Chinook as a requirement. [Footnote 52: See 2/23/11 letter from Paul Fujitani Chief of CVP Ops to Brian Person Chairman Trinity Management Council. Accessed at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/PCFFA&IGFR/part2/pcffa_114.pdf] According to the SWRCB [Footnote 53: See SWRCB's October 23 2023 response to complaint by Michael Palmer. Accessed at: https://ftp.waterboards.ca.gov/Hearing%20Documents%2FParties'%20Hearings%20Exhibits%2FPacific%20Coast%20Federation%20of%20Fisherman%20Association%20Exhibit%2FPCFFA-49%20SWRCB%20to%20Palmer%20Ltr%202023.10.23_TrinityExceedancesResponse%5B74%5D.pdf] the 56F temperature requirement for the Trinity River only applies when BOR is actively diverting water from the Trinity River for temperature	51°F across all alternatives. Asarian, J.E., K. De Juilio, S. Naman, D. Gaeuman, and T. Buxton. 2023. Synthesizing 87 years of scientific inquiry into Trinity River water temperatures. Prepared for the Trinity River Restoration Program, Weaverville, CA. North Coast Regional Water Quality Control Board. 2018. Water Quality Control Plan for the North Coast Region. June. Available: https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/basin_plan_documents/. Accessed: March 13, 2023.

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	control on the Sacramento River. Therefore when the Bureau is not actively diverting water to the Sacramento River for temperature control but for other purposes such as water supply hydropower or Delta water quality there are no temperature protections for the Trinity River whatsoever.	
68-112	2. Inadequate coldwater carryover storage in Trinity Lake. The NMFS 2000 Biological Opinion [Footnote 54: National Marine Fisheries Service (2000) Biological Opinion for the Trinity River Record of Decision accessed at: https://www.trrp.net/library/document/?id=1240] for the Trinity River includes a minimum carryover storage in Trinity Reservoir on September 30 of 600000 AF and requires reconsultation if storage falls below that level. However numerous other analyses have found that a 600000 AF minimum carryover storage is itself inadequate. A 2012 report by Reclamation found that September 30 carryover storage requirement of less than 750000 AF is "problematic" in meeting state and federal Trinity River temperature objectives protective of the fishery. [Footnote 55: See Bender MD (2012) Trinity Reservoir Carryover Storage Cold Water Pool Sensitivity Analysis. Technical Memorandum No. 86-68220-12-06 U.S. Bureau of Reclamation Technical Service Center Denver CO. Accessed at: http://odp.trrp.net/Data/Documents/Details.aspx?document=1813]In 1992 Balance Hydrologics found that a minimum carryover storage of 900000 AF was necessary to meet Basin Plan temperature objectives. [Footnote 56: See Balance Hydrologics (6/26/1992) "The Need for Standards for Minimum Carryover Storage in Trinity Reservoir" Accessed at:https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/PCFFA&IGFR/part2/pcffa_116.pdf]Analyses completed for Trinity County for the Trinity Record of Decision by Kamman	The commenter's assertions about Trinity River temperature objectives pertain to existing conditions and the No Action Alternative. The governing Biological Opinions currently in effect are within the authority of NMFS. Refer to Standard Response 2, Related Regulatory Processes. As explained in Standard Response 3, Baseline and No Action, the No Action Alternative serves as the baseline against which the proposed action and other alternatives are compared. Mitigation should then be identified for any adverse effects (40 CFR § 1502.16(a)(9)). See also Standard Response 2 regarding related regulatory processes, including ESA compliance. Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives.

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	Hydrologics indicated that September 30 Trinity Reservoir carryover storage of at least 1.2 million AF on September 30 is necessary to meet Basin Plan temperature objectives at the beginning of a simulated 1928-1934 drought. [Footnote 57: Memorandum from Greg Kamman to Tom Stokely and Mike Deas on Carryover Storage Analysis Simulated (1928-34) Period 5/22/1998. Accessed at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/PCFFA&IGFR/part2/pcffa_117.pdf] During the recent drought Trinity Reservoir storage fell well below levels necessary to maintain temperatures during a historic multi-year drought such as 1928-1934.Furthermore BOR's Mid-Pacific office also produced a preliminary technical memorandum on the problem of excessive heating of Trinity Dam water releases [Footnote 58: See USBR (2012) Lewiston Temperature Management Intermediate Technical Memorandum Lewiston Reservoir Trinity County California. Report by U. S. Bureau of Reclamation Mid-Pacific Region Sacramento CA. accessed at http://odp.trrp.net/Data/Documents/Details.aspx?document=1814] when they pass through the shallow 7-mile-long Lewiston Reservoir. While Trinity Dam releases are often 43- 44F summer heating in Lewiston Reservoir can be severe unless approximately 1300- 1800 cfs is being released from Trinity Dam. Given that Trinity River summer base flows are only 450 cfs water must be diverted to the Sacramento River to keep the Trinity River cold enough to meet Basin Plan temperature objectives. However during severe drought or under certain operational circumstances there may not be adequate water to provide base fishery flows and to divert water to the Sacramento River to keep the Trinity River cold. Several structural solutions have been identified in Reclamation's preliminary technical memorandum; however a full feasibility	

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	study and environmental document would need to be prepared to select a solution and no such plans exist at this time. Full temperature protection through a water right hearing for the Trinity River was promised in SWRCB Water Quality Order 89-18 [Footnote 59: WQO 89-18 p. 17: "Finding: The State Board should conduct water right proceedings to consider whether the Bureau's permits should be modified to establish temperature limitations or other conditions to assure adequate water quality for protection of the fishery in the Trinity River. Accessed at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/1989/wq1989_18.pdf We direct the Division of Water Rights to initiate proceedings to consider whether the Bureau's permits should be modified to set conditions relating to temperatures in the Trinity River."] and WRO 90-5. [Footnote 60: WRO 90-5 p 31: "We have already announced our intention to conduct a water right proceeding to consider whether the Bureau's Trinity River water rights should be modified to establish temperature limitations and other controls on water quality to protect the fishery in the Trinity River. See Order No. WQ 89-18." Accessed at: https://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/1990/wro90-05.pdf] That promise has yet to be fulfilled over 30 years later and the Trinity River's salmon remain at high risk of TDM. Mitigation is required.	
68-113	3. The Voluntary Agreements negatively impact Trinity Lake coldwater storage. The Proposed Action includes the proposed Voluntary Agreements (VAs). The DEIS does not disclose that the VAs adversely impact storage at Trinity Lake. This is a new negative of CVP operations that can only be mitigated through new mitigation measure included as part of the Biological Opinion not deferred to a later date for an as-yet undefined	Refer to Standard Response 8, Trinity River Division, regarding the Trinity River. Refer to Refer to Standard Response 10, Voluntary Agreements, regarding voluntary agreements and how they are represented in Alternative 2. Reclamation does not anticipate negative impacts to Trinity Reservoir coldwater storage as a result of voluntary agreements.

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	process. The impact on Trinity coldwater storage from the VAs can be found in SWRCB 2023 Appendix G3a figures G3a-72 and G3a-73 on page G3a-80 [Footnote 61: See SWRCB Appendix G3a "Sacramento Water Allocation Model Methods and Results for Proposed Voluntary Agreements." Accessed at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/2023/staff-report/app-g3a.pdf] as copied below. [See original comment for Trinity Reservoir (Trinity) line graph] This impact is significant because coldwater storage in Trinity Lake is already impaired due to excessive water deliveries and climate change. Mitigation for the Proposed Project's temperature impacts on Trinity Lake is required until completion of the separate Trinity River BA BO and SEIS.	Modeling analysis based on implementation of voluntary agreements shows only slight changes to Trinity operations. Modeling outputs identify slight changes to end-of-April and end-of-September Trinity storage exceedance probabilities, while long-term Trinity storage averages are the same across all voluntary agreement modeled scenarios.
68-114	4. Interim mitigation measure to prevent harm to Trinity River salmon prior to completion of a separate Trinity BA BO and SEIS. As discussed above Trinity River Coho Salmon spring-run Chinook Salmon and fall-run Chinook Salmon are at high risk from TDM. A significant proportion of Trinity River Hatchery eyed eggs perished in 2021 despite compliance with the (inadequate and outdated) 56F requirement in WRO 90-5. Trinity River fall-run Chinook Salmon and spring- run Chinook Salmon eggs will perish even given full compliance with the 56F requirement of WRO 90-5 and North Coast Basin Plan temperature objectives. The Trinity Lake carryover storage requirement in the 2000 NMFS Biological Opinion for the Trinity River is grossly inadequate even according to BOR's own scientists. The VAs will further deplete Trinity Lake carryover storage and coldwater by diversion to the Sacramento River basin to meet Bay-Delta water quality requirements. Therefore interim mitigation measures/Reasonable and Prudent Measures to protect the Trinity River should be incorporated into all	The governing Biological Opinions currently in effect are within the authority of NMFS. Refer to Standard Response 2, Related Regulatory Processes, regarding related regulatory processes, including ESA compliance. As explained in Standard Response 3, Baseline and No Action, the No Action Alternative serves as the baseline against which the proposed action and other alternatives are compared. Mitigation should then be identified for any adverse effects (40 CFR § 1502.16(a)(9)). Mitigation is not required under NEPA for existing conditions.

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	alternatives until superseded by a subsequent Trinity BA BO and SEIS as follows: 1. Trinity Lake carryover storage should never be allowed to go below 750000 AF at the end of September. 2. The Bureau should be required to operate to meet a 60F North Coast Basin Plan temperature objective at Douglas City from July 1 to September 15. 3. The Bureau should be required to operate to meet a 53.5F temperature requirement at Douglas City from September 15 until October 1. 4. The Bureau should be required to operate to meet a 53.5F temperature requirement at the North Fork confluence from October 1 through October 30. 5. The Bureau should be required to operate to meet a 50F temperature requirement at Lewiston Dam November 1 through December 31 to protect threatened Coho Salmon. 6. The Bureau shall provide enough egg chillers at the Trinity River Hatchery to keep all Chinook Salmon and Coho Salmon eggs alive in the event temperatures in items 3-5 above cannot be met. 7. The Bureau shall bypass the Trinity Dam Powerplant as necessary to meet the temperatures in items 3-5 above. 8. The Bureau shall petition the SWRCB to request a hearing to provide full temperature protection for the Trinity River in their state water permits as promised by the SWRCB in Water Quality Order 89-18 and Water Right Order 90-5. The Bureau shall pay all costs of such water right hearing.	
68-115	XIII. Conclusion. Reclamation must revise and recirculate the DEIS. NEPA Regulations require "If the agency determines that a draft statement is so inadequate as to preclude meaningful analysis the agency shall prepare and publish a supplemental draft of the appropriate portion." 40 C.F.R. 1502.9(b).First in addition to the deficiencies listed in the opening summary and discussed in detail above the DEIS is missing critical information including but not limited to:	Impacts on aquatic resources for all the alternatives, including the No Action Alternative are discussed in Chapter 12 and Appendix O Aquatics Resources. Temperature indices used in the DEIS are adequate for the comparative analysis presented. Additionally, please refer to Section 3.4.6 for impacts on white sturgeon from the alternatives analyzed in the DEIS. The winter-run Chinook salmon lifecycle model was not available

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	- Failure to identify or analyze all potential combinations of Alternative 2 which includes TUCPs and all VAs. - Failure to use the NMFS Winter-run Lifecycle Model to assess likely effects on the listed species from the Proposed Action. - Failure to use the proper temperature thresholds for assessing Proposed Action impacts to various salmonid life stages. - Failure to disclose the impact of high river temperatures on the winter-run juvenile production impact. - Failure to disclose the precarious state of the listed species including the Bay's White Sturgeon population (which recently gained CESA protection as a "candidate" for listing) and that the status quo for these species is decline not stasis. Thus the DEIS fails to disclose that outcomes from any alternative that are not significantly different from the NAA represents an impact that is not consistent with ESA requirements. Proper inclusion of these important elements and others listed in our comments will qualify as a "substantial change" to the Proposed Action and therefore require revision and recirculation to all Interested Parties and the public in order "to allow outside reviewers to give meaningful consideration to the environmental issues involved." (State of California v. Block 690 F.2d 753 770 (9th Cir. 1982; see also Marsh v. Oregon Natural Resources Council 490 U.S. 360 372 (1989); Friends of the Clearwater v. Dombeck 222 F.3d 552 557-558 (9th Cir. 2000).) Additionally it is also quite likely the Voluntary Agreements in their current form may not be finalized let alone be implemented. But more certain and importantly the update to the State Water Board's Bay-Delta Water Quality Control Plan will be finalized within the next year. This would qualify as "substantial new circumstances or information about the significance of adverse effects that bear on the analysis." This would also legally trigger revision and recirculation of the DEIS under NEPA.As we stated in our scoping comments “The	to Reclamation. NMFS will use the lifecycle model in the Biological Opinion assessing impacts to winter-run Chinook salmon on the preferred alternative, which was submitted for consultation as the “Proposed Action”. Refer to Standard Response 7, Aquatic Resources regarding impacts on covered fishes and other aquatic resources described in Chapter 12, Fish and Aquatic Resources and the results from the biological models described in Appendix O, Fish and Aquatic Resources Technical Appendix. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis in the Draft EIS and the request that the Draft EIS be revised and recirculated for public review. Refer to Standard Response 9, Climate Change regarding the consideration of climate change in the analysis provided in the EIS. Refer to Standard Response 10, Voluntary Agreements, for details on how voluntary agreements were considered in the analysis of impacts in the LTO EIS. Refer to Standard Response 2, Related Regulatory Processes regarding how Reclamation has coordinated NEPA review with the ESA required studies and processes. Reclamation follows all applicable federal laws and regulations. As substantial changes to the Long-term Operation of the CVP are imminent or a final agency action is implemented, Reclamation will evaluate the need for additional environmental compliance. Alternative 2 is analyzed in phases to accommodate voluntary flow contributions and state board decisions which are outside Reclamation’s direct control. Those phases include operations with

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	question in this section 7 consultation is not whether a new operations plan is as protective of listed species as water operations under the environmental baseline but rather whether based on the best scientific and commercial information available and in light of baseline conditions (including climate change) proposed Water Project operations will jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. See Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv. 524 F.3d 917 926 (9th Cir. 2008). In fact courts have previously held that even stating that protections will increase as compared to the status quo is not sufficient to demonstrate that the action will not jeopardize listed species without more analysis and explanation because even under increased protections an action can jeopardize a species that has severely declined. See e.g. Aluminum Co. of Am. v. Adm'r Bonneville Power Admin. 175 F.3d 1156 1162 n.6 (9th Cir. 1999) (given imperiled status of the species minor improvements in survival compared to prior operations may be insufficient to avoid jeopardy); Turtle Island Restoration Network v. U.S. Dep't of Commerce 878 F.3d 725 737 (9th Cir. 2017) (even small additional harms can jeopardize the species when population is declining under baseline conditions); S. Yuba River Citizens League v. Nat'l Marine Fisheries Serv. 723 F.Supp.2d 1247 1267 (E.D. Cal. 2010) ("[A]lthough the BiOp properly concludes that the project will partially reduce the impact of prior stressors this is itself insufficient."); Nat. Res. Def. Council v. Kempthorne 506 F.Supp.2d 322 37172 (E.D. Cal. 2007). Rather than simply performing comparative modeling in this consultation life cycle models and/or other analyses should be used to demonstrate whether alternatives would achieve positive population growth of ESA- listed species sufficient to avoid jeopardizing the continued existence and recovery of the species." (emphasis added). The DEIS's own analysis demonstrates that all the	a Temporary Urgency Change Petition; the full Voluntary Agreement alternative to the Bay-Delta Plan update; early implementation of Delta export reductions; and no additional winter and spring Delta outflow. The phases of the preferred alternative (Alt 2) include: • Alternative 2 with Temporary Urgency Change Permits (Alt2v1wTUCP) • Alternative 2 without Voluntary Agreements (Alt2v1woTUCP) • Alternative 2 with Early Implementation of Delta Voluntary Agreements (Alt2v2woTUCP) • Implementation of all Voluntary Agreements (Alt2v3woTUCP)

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	alternatives except Alternative 3 are insufficient to avoid jeopardizing the continued existence and recovery of listed species. This does not satisfy requirements under NEPA or the ESA. The DEIS also does not satisfy other federal policy requirements such as Justice 40 climate analysis requirements promulgated by the Council on Environmental Quality and the federal government's duties to protect tribal trust resources. Therefore it must be revised and recirculated to include the correct and new information noted in our comments.	
68-116	We look forward to continuing to engage in the reconsultation process. Thank you for consideration of our views.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
68-117	Attachments 1. NGO LTO Draft Proposed Action Comment Letter Part 1 July 2023	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
68-118	2. NGO LTO Draft Proposed Action Comment Letter Part 2 August 2023	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
68-119	3. NGO Bay Delta Plan Phase II Draft Staff Report Comments January 2024	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
68-120	4. NGO SWP LTO DEIR Comment Letter July 2024	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
68-121	5. Voluntary Agreement Timeline Fact Sheet July 2024	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
68-122	6. Defenders et al. Letter to Agencies on ITL Exceedance April 2024	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in

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		these responses to comments.
68-123	7. Defenders Letter to Agencies Refuge Water Deliveries April 2023	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
68-124	8. NRDC et al. BOR LTO Scoping Comment Letter March 2022	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
68-125	LITERATURE CITED AFRP 2001. Anadromous Fish Restoration Program. 2001. Final Restoration Plan for the Anadromous Fish Restoration Program: A plan to increase natural production of anadromous fish in the Central Valley of California. Prepared for the Secretary of the Interior by the United States with assistance from the Anadromous Fish Restoration Program Core Group under authority of the Central Valley Project Improvement Act. January 9 2001. Bashevkin S.M. and B. Mahardja. 2022. Seasonally variable relationships between surface water temperature and inflow in the upper San Francisco Estuary. Limnology and Oceanography 67(3) DOI: 10.1002/lno.12027 Baykeeper et al. 2023. A petition to the state of California Fish and Game Commission to list the California White Sturgeon (Acipenser transmontanus) as Threatened under the California Endangered Species Act (CESA) Submitted November 29 2023 on behalf of Baykeeper California Sportfishing Protection Alliance Restore the Delta and The Bay Institute. Blackburn S.E. M.L. Gingras J. DuBois Z.J. Jackson & M.C. Quist. 2019. Population Dynamics and evaluation of management scenarios for White Sturgeon in the Sacramento San Joaquin River basin. North American Journal of Fisheries Management 39(5) 896912. https://doi.org/10.1002/nafm.10316 [CDFW 2010].	This is a list of literature cited in the comment letter. Comments specifically referencing these sources are addressed in these responses to comments. Reclamation has reviewed and considered the information cited by the commenter.

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	Tributaries and Eastside Tributaries to the Delta Delta Outflows Cold Water Habitat and Interior Delta [SWRCB 2023] State Water Resources Control Board. 2023. Draft Staff Report/Substitute Environmental Document in Support of Potential Updates to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary for the Sacramento River and its Tributaries Delta Eastside Tributaries and Delta https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/2023/staff- report/ch06-waterchngs.pdf Sturrock A.M. S.M. Carlson J.D. Wikert T. Heyne S. Nussl J.E. Merz H.J.W. Sturrock R.C. Johnson. 2019a. Unnatural selection of salmon life histories in a modified riverscape. Global Change Biology 2019; 00:113. DOI: 10.1111/gcb.14896 Thomson J.R. W.J. Kimmerer L.R. Brown K.B Newman R. Mac Nally W.A. Bennett F. Feyrer E. Fleishman. 2010. Bayesian change point analysis of abundance trends for pelagic fishes in the upper San Francisco Estuary. Ecological Applications 20 (5). pp. 14311448. [USEPA 1999] US Environmental Protection Agency. 1999. A review and synthesis of effects of alterations to the water temperature regime on freshwater life stages of salmonids with special reference to Chinook salmon. U.S. Environmental Protection Agency Region 10. [USEPA 2003]. U.S. Environmental Protection Agency. 2003. EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards. EPA 910-B-03-002. Region 10 Office of Water Seattle WA. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi/P1004IUI.PDF?Dockey=P1004IUI.PDF [USEPA 2024]. US Environmental Protection Agency. 2024. Letter from: Toms Torres Director Water Division EPA; to: State Water Resources	

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68-126	Attached are the comments (including attachments) of the California Sportfishing Protection Alliance California Water Impact Network Friends of the River Golden State Salmon Association Institute for Fisheries Resources Pacific Coast Federation of Fishermen's Associations Restore the Delta San Francisco Baykeeper Save California Salmon and Water Climate Trust regarding the Draft Environmental Impact Statemen for Long-Term Operation of the Central Valley Project and State Water Project. Most of the literature cited in the comments is available at: https://drive.google.com/drive/folders/1dc2XrLWnH7UVbcDVwMuLv5Yq4XbfvRY7Please confirm receipt of these comments.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
68-128	We greatly appreciate that the Biden Administration reinitiated consultation in order to significantly revise and replace the Trump Administration's 2019 biological opinions ("2019 BiOps") which were the result of political interference and scientific misconduct and which violate federal law. In addition we note that reinitiation of consultation is required as a matter of law because operations of the CVP and SWP repeatedly exceeded the incidental take limits in those biological opinions over the past several years including exceeding the incidental take limit in the 2019 NMFS BiOp regarding egg to fry survival of winter-run Chinook salmon. 50 C.F.R. 402.16. And given the alarming declines in the abundance of spring-run Chinook salmon low initial returns of winter-run Chinook salmon this year the complete closure of the salmon fishery due to low abundance of fall-run Chinook salmon and the U.S. Fish and Wildlife Service's proposal to list Longfin Smelt under the Endangered Species Act and finding that existing regulatory mechanisms are inadequate to protect extinction of this species it is clear that significant changes in water project operations are necessary and appropriate to comply with State and federal law. However	Refer to Standard Response 7, Aquatic Resources, regarding the aquatic analysis in the EIS and impacts on covered fishes and other aquatic resources described in Chapter 12, Fish and Aquatic Resources. Refer to Standard Response 2, Related Regulatory Processes, regarding how Reclamation has coordinated NEPA review with the ESA-required studies and processes. Federal law was followed in preparing the 2019 BiOps and EIS 2020 ROD. As discussed in Chapter 1, Introduction, the executive order directed the federal government to re-evaluate 2019/2020 ROD compliance, and Reclamation is following the issuance of the executive order. Reclamation decided to reinitiate under the ESA and to prepare NEPA and ESA compliance documents.

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	at this time it does not appear that the proposed action will adequately protect salmon or other ESA-listed fish and wildlife and in several respects the proposed action does not meet the requirements of the Endangered Species Act and other state and federal laws. We recognize that there has been substantial work to develop this proposed action particularly regarding Shasta Reservoir operations and also recognize that significant work remains to model and analyze this proposed action which is necessary to evaluate the effects of the proposed action and produce a legally adequate biological assessment. We therefore urge the federal agencies to revise the proposed action consistent with these comments. We anticipate providing additional comments regarding other elements of the proposed action in the coming weeks.	
68-127	On behalf of the undersigned organizations we are writing to provide initial feedback regarding the description of the proposed action for the reinitiation of consultation on operations of the State Water Project and Central Valley Project.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
68-129	I. Failure to Include Adequate Enforceable Requirements Regarding Shasta Operations Water Storage and Water Temperatures: While the proposed action identifies credible targets for water storage and water temperatures the proposed action fails to include actions necessary to achieve these targets and fails to demonstrate that these targets are reasonably certain to be achieved as required by the Endangered Species Act. We appreciate that the proposal for Shasta Reservoir operations utilizes the best available science regarding the critical water temperature threshold for winter-run Chinook salmon egg mortality (53.5 degrees Fahrenheit Martin et al 2016) references NMFS's existing targets for maximum temperature-dependent mortality of winter-run Chinook salmon eggs of less than 3% in most years and less than 30% in	Please refer to Standard Response 2, Related Regulatory Processes, regarding the Section 7 process, specifically development and purpose of the Biological Opinions by USFWS and NMFS.

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	all years recognizes the need to increase end of September carryover storage to avoid years with massive temperature-dependent mortality like that observed in 2014 2015 and 2021 and proposes reductions in water supply allocations to Sacramento River Settlement Contractors (or more likely to reduce water transfers from Sacramento River Settlement Contractors to other water contractors) to improve storage and temperature management in certain years [Footnote 1: The target of maximum temperature dependent mortality of 30% in critically dry years lacks credible scientific evidence demonstrating this level of mortality would avoid jeopardizing the continued existence of winter-run Chinook salmon; in 2017 NMFS concluded that it is unclear if these levels of mortality would avoid jeopardy to winter-run Chinook salmon. The biological opinion must include analysis that demonstrates whether these levels of mortality would not jeopardize the continued existence of the species.]. However the proposed action does not include enforceable requirements that ensure that these targets are reasonably certain to occur and it does not appear that the Proposed Action is adequate to achieve these targets in many years. Unless these provisions are requirements that are reasonably certain to occur rather than unenforceable targets these provisions cannot be considered as conservation or mitigation measures under the Endangered Species Act. See e.g. Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv. 524 F.3d 917 936 & n.17 (9th Cir. 2008); Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt. 698 F.3d 1101 1117 (9th Cir. 2012); Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv. 839 F. Supp. 2d 1117 112526 (D. Or. 2011); Nat. Res. Def. Council v. Kempthorne 506 F. Supp. 2d 322 35057 (E.D. Cal. 2007). For instance the proposed action does not require reductions in water supply allocations hydropower bypasses or other actions to ensure that temperature dependent mortality does not	

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	exceed the identified target (30%) in Bin 3 years. The proposed action does not identify any actions that would occur if modeling indicates this target (or the targets in Bins 1 and 2) will not be achieved. The proposed action should provide a process by which NMFS evaluates likely temperature-dependent mortality before Reclamation announces water supply allocations similar to the requirements of the 2009 NMFS BiOp. Instead under the proposed action Reclamation plans to issue water supply allocations in February before preliminary temperature modeling will be prepared (likely at the end of March since it states it will be based on the March 90% forecast which is typically not available until the last 10 days of the month). See Proposed Action at 9-28 to 9-29. It does not appear that modeling of temperature-dependent mortality plays any role in determining water supply allocations or water operations throughout the year. Because the proposed action fails to include measures to ensure that temperature dependent mortality will be limited to 30% in Bin 3 years and 3% in Bin 1 and Bin 2 years it is very unlikely to achieve these targets.	
68-130	Similarly the proposed action does not include enforceable requirements to ensure that the minimum end of September carryover storage of 2.0 million acre feet is achieved every year. See id. at 6-23. Instead the proposed action asserts that "final decisions" on drought actions including water supply for Sacramento River Settlement Contractors will be based on the April 90% forecast see id. at 9-3 even though water diversions for the Sacramento River Settlement Contractors often begin before the April 90% forecast is available and even if updated forecasts show that Reclamation will not achieve end of September storage of 2.0 MAF. And under the proposed action it does not appear that NMFS will have any say on the initial water supply allocations and indeed does not require a call or	The alternatives are described in Chapter 3, Alternatives, and Appendix E, Draft Alternatives. Allocations by Reclamation are outside the scope of this EIS. Reclamation is taking actions within its control to respond to the available hydrology based on end-of-April and end-of-September storage in Shasta Reservoir. Under Alternative 2, storage is a trigger for actions, not a target Reclamation can operate to. Reclamation must operate consistent with applicable laws, contracts, and agreements. Allocations are the outcome of the water that is available; they do not determine whether the water is available. Allocations are administrative in nature and do not affect listed species. Under Alternative 2, NMFS is a member of the SHOT and can provide input on projected releases from Shasta Reservoir.

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	meeting with NMFS and sharing of a full operational outlook even if end of September storage is anticipated to be less than 2.4 MAF. See id. There are no specific criteria explaining what happens with respect to allocations when projected end of September storage is less than 2.0 MAF. Id.	
68-131	In addition Reclamation proposes the development of a temperature management plan in April which will occur long after water supply allocations have been announced and which will use a less conservative approach than in the past (90 percent "in the aggregate" instead of using 90% hydrology and conservative (25%) meteorology). Id. at 7-24. Furthermore the proposed action does not identify or discuss any measures by which Reclamation will protect the "salmon fishery" including fall-run Chinook salmon from lethal water temperatures in the Sacramento River as required by Water Rights Order 90-5.Nor does the proposed action prohibit water transfers or other actions that would reduce Shasta storage after October 1; instead the proposed action explains that water transfers and higher reservoir releases are anticipated in October and states that Reclamation "expects" ramping down releases to 3250 cfs after the irrigation season. Id. at 5-20. This failure to protect Shasta carryover storage through the fall and winter undermines the ability to maintain temperature control if the subsequent year is dry. The proposed action should be revised to prohibit water transfers after September 30 if doing so would reduce water storage below 2.0 MAF.	Please refer to Chapter 3, Alternatives, and Appendix E, Draft Alternatives, for a description of the Framework Approach to bins which establishes a framework to manage water temperature and storage under Alternative 2. Reclamation considered four alternatives in additional to the No Action Alternative. Please refer to Standard Response 4, Alternatives Formulation, for the rigorous approach Reclamation undertook in formulating the range of reasonable alternatives that have different approaches to Shasta Reservoir coldwater management to encourage an informed decision when selecting an Alternative in the ROD.
68-132	Finally it does not appear that the proposed reduction in allocations to Sacramento River Settlement Contractors would be sufficient to meet these proposed targets for water storage and temperature-dependent mortality. It is very troubling that Reclamation estimates that these critical years will be only 8.5% of all years see id. at 5-20 given the high frequency with which	Please see Standard Response 6, Hydrologic Modeling and Surface Water Resources. As described in Standard Response 6, modeling results should not necessarily be understood to reflect literally what would occur in the future under an alternative. The CalSim3 model output is used as a tool to assist in comparing conditions across alternatives and not as a tool to predict system operations.

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	these critical conditions have occurred in the past 15 years. While we look forward to reviewing modeling of the proposed Shasta Reservoir operations to evaluate how frequently these targets might be achieved we expect that Reclamation's modeling will not adequately capture the likely impacts in these drier years given Reclamation's plan to only include the effects of climate change as of 2022 and the fact that hydrologic conditions and temperatures have been far more severe in the real world in recent years than Reclamation's modeling has indicated. We remain deeply concerned that Reclamation is not proposing to reduce discretionary allocations of Project Water to Sacramento River Settlement Contractors nor proposing to reduce allocations to San Joaquin River Exchange Contractors and DWR's Feather River Settlement Contractors in order to address the fundamental overallocation of water in drier years that prevents the CVP and SWP from meeting the requirements of D-1641 and providing minimally adequate ecological conditions for endangered and threatened fish species in those years. These concerns are heightened because the proposed action fails to provide adequate instream flows for successful juvenile salmon migration for winter-run Chinook salmon fails to provide adequate instream flows for spring-run Chinook salmon in many years fails to provide adequate Delta outflows for Longfin Smelt and Delta Smelt and appears to rely on waiving Delta water quality standards through Temporary Urgency Change Petitions ("TUCPs") even though TUCPs have not been shown to improve Shasta Reservoir water storage. Therefore we strongly urge the agencies to revise the Shasta Action to include enforceable requirements and measures that are adequate to ensure these water storage and temperature-dependent mortality targets are reasonably certain to occur particularly during multi-year droughts.	Reclamation has examined a range of alternatives in the EIS. Please see Standard Response 4, Alternatives Formulation, for a discussion of the rigorous approach Reclamation undertook for the alternatives formulation process and range of alternatives. Acknowledging inter-annual variability of California hydrology, the Shasta Reservoir action was developed as a framework and actions are based on hydrologic conditions in a specific year, rather than being based on a certain frequency of occurrence of driest years. This framework was developed using CalSim II, which had an 82-year simulation period (1921–2003); bin 3 years occur 8.5% of the time in this simulation period. This framework was developed with 2035 CT climate projection and tested for a longer-term projected climate hydrology (2040 MED) as well. Final EIS models use CalSim 3, which has a 100-year simulation period (1921–2021) and captures all the drought periods within that sequence. Bin 3 years make up 18% of the years in the 1921–2021 simulation period. The 2022MED+/-15 climate condition represents the historical period, detrended to current climate conditions and adjusted for future climate using the 30 years centered on 2021. Please refer to Standard Response 9, Climate Change, regarding the consideration of climate change in the analysis provided in the EIS. Reclamation operates consistent with applicable laws, contracts, and agreements.

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68-133	II. Failure to Ensure Congressionally Mandated Water Supply Allocations for Wildlife Refuges The proposed action also appears to allow water supply allocations for wildlife refuges to be reduced by more than 25 percent which would violate the explicit statutory requirements of the 1992 Central Valley Project Improvement Act. See id. at 5-22. In order to comply with federal law the proposed action must be revised to eliminate language suggesting or allowing Level 2 Refuge water supply allocations to be reduced below 75 percent. See Letter from Defenders of Wildlife to the Bureau of Reclamation and U.S. Fish and Wildlife Service dated April 24 2023.	As described in Chapter 5, Water Supply, Section 5.2.5.2, Tulare Lake Region, the largest modeled average annual decrease to CVP Refuge Level 2 deliveries would be 7 percent under Alternative 3 in the Tulare Lake Region. In addition, as noted in Section 5.2.2, Trinity River, Sacramento River, Clear Creek, and American River, minor deviations in CVP Refuge Level 2 deliveries are the result of modeling but do not reflect an intention by Reclamation to deviate from the CVPIA. Reclamation will coordinate with USFWS to maintain summer deliveries to CVPIA refuges in a manner consistent with refuge contracts and agreed upon operational priorities. Please refer to Standard Response 8, Trinity River Division, regarding the consideration of Trinity River operations in the EIS and future environmental review processes anticipated for the Trinity River.
68-134	III. Inadequate Delta Outflows to Protect Longfin Smelt and Other Species Including Improper Reliance on the Proposed Voluntary Agreement The proposed action fails to provide adequate Delta outflow to protect Longfin Smelt and other ESA-listed species and the inadequate Delta outflow that is included improperly relies on the proposed voluntary agreement. Numerous state and federal agencies have concluded that existing Delta outflows are inadequate to protect endangered species and that increased Delta outflow particularly in the winter and spring months is necessary to prevent the likely extinction of Longfin Smelt Delta Smelt and other species. As you know the U.S. Fish and Wildlife Service has recently concluded that Longfin Smelt warrants listing as an endangered species under the federal Endangered Species Act that the reduction in winter-spring Delta outflow is the primary threat to the continued existence of the species and that existing	Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding general opposition or support to the project. Please refer to Standard Response 10, Voluntary Agreements, for representation of the agreements in Alternative 2.

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	regulatory protections including existing Delta outflow requirements of the Bay-Delta Water Quality Control Plan and requirements under the incidental take permit for the State Water Project are inadequate to protect Longfin Smelt. U.S. Fish and Wildlife Service Endangered and Threatened Wildlife and Plants; Endangered Species Status for the San Francisco Bay-Delta Distinct Population Segment of the Longfin Smelt 87 Fed. Reg. 60957 60961-60964 60968-60971 (Oct. 7 2022). Similarly in its findings on the incidental take permit for the State Water Project the California Department of Fish and Wildlife concluded that Delta outflow during the winter and spring months of January to June were the primary driver of Longfin Smelt recruitment and population abundance and that Longfin Smelt were likely to decline in abundance under the incidental take permit compared to the Delta outflow resulting from the 2008/2009 biological opinions [Footnote 2: In contrast the proposed action only addresses "Spring Delta Outflow" which generally focuses on the months of March to May with certain outflow actions "prioritized" during April and May. See Proposed Action at 9-70 to 9-72.]. See California Department of Fish and Wildlife Findings of Fact of the California Department of Fish and Wildlife Under the Endangered Species Act Long-term Operation of the State Water Project in the Sacramento San Joaquin Delta and Final Environmental Impact Report Incidental Take Permit 2081-2019-066- 00 March 2020 at 66; id Attachment 7 at 64-75.	
68-135	Increasing spring and summer Delta outflow is also critically important to prevent the extinction of Delta Smelt; the best available science demonstrates that reduced Delta outflow in the spring reduces the recruitment and subsequent abundance of Delta Smelt. See Polansky et al 2021; State Water Resources Control Board Final 2017 Scientific Basis Report at 3-73 to 3-74;	Please see Standard Response 2, Related Regulatory Processes regarding CEQA review. State Water Project operations on the Feather River are out of the scope of this EIS.

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	IEP MAST 2015. Recent scientific studies also confirm that reduced Delta outflow in the summer resulted in reduced Delta Smelt post-larval survival and that increased Delta outflow in the fall increased abundance of Delta Smelt prey. Smith Polansky and Nobriga 2021; Lee et al 2023.The SWP's incidental take permit included several measures to improve summer-fall outflow for Delta Smelt including conditions 8.19 and 9.1.3.1 which requires dedication of 100000 acre feet of water that can be used to increase Delta outflow in the summer to protect Delta Smelt. However these Delta outflow requirements of the SWP's incidental take permit do not appear to be part of the proposed action.	
68-136	And increased Delta outflows in the winter and spring months are also critically important to protect migrating juvenile salmon and steelhead because they result in higher instream flows into and through the Delta. Numerous peer-reviewed studies have concluded that flow is the primary factor affecting the survival of juvenile salmon as they migrate down the Sacramento River. See e.g. Hassrick et al 2022 (concluding that survival of juvenile winter-run Chinook salmon in the Sacramento River decreases as flows decrease below approximately 24720 cfs); Michel 2022; Michel et al. 2015; Henderson et al. 2018; Michel 2019; Munsch et al. 2020; Notch et al. 2020 [Footnote 3: It is important to recognize that NMFS' Winter-Run Life Cycle Model ("WRLCM") fails to use the best available science regarding the effects of Sacramento River flows on the survival of winter-run Chinook salmon. The WRLCM fails to incorporate data on the effects of river flows on survival of juvenile winter-run Chinook salmon published in Hassrick et al 2021; instead the WRLCM uses a relatively flat flow:survival relationship that is inconsistent with the best available science and that significantly underestimates the negative effect of reduced river flow on juvenile	The EIS includes two models to assess impacts of river flow on juvenile Chinook salmon survival. A flow threshold model assesses potential effects of changes in flow in the upper Sacramento River on juvenile Chinook salmon as a result of flow-survival relationships. The flow thresholds from Michel et al. (2021) were applied to Sacramento River at Wilkins Slough. The XT model (Anderson et al. 2005), which the SacPAS Fish Model uses, assumes fish are similar between cohorts but the environment they experience is different. Flow varies spatially and temporally, and there is a trade-off between the distance (X) a fish travels and the time spent (T) for a fish in a reach when calculating survival. Please see Attachments J.5, Sacramento River Juvenile Stranding Analysis, and Attachment J.4, XT Model, for details on the methods and analyses and Sections O.4.8.1, O.6.8.1, O.7.8.1, and O.5.8.1 in Appendix O, Fish and Aquatic Resources Technical Appendix, for a summary of the results. The Draft EIS did not rely on the Winter-run Chinook Salmon Lifecycle Model because it was not available to Reclamation. Please see Standard Response 7, Aquatic Resources.

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	outmigration survival] [Footnote 4: The analysis published in Michel 2022 identifies a potential flow:survival threshold at 10712 cfs finding similar survival rates at flows between 10712 cfs and 22872 cfs and survival declining above 22872 cfs. However the paper acknowledged that the upper flow threshold which was based on limited observations at higher flows may not be accurate; it admits that "The 22872 cfs threshold may be an artifact of lower detection efficiencies associated with fish utilizing additional high flow migration routes with less receiver coverage." In contrast to the finding of flow threshold effects in Michel 2022 numerous other studies have found a continuous positive relationship between river flow and juvenile salmon survival. See e.g. Michel et al. 2015; Henderson et al. 2018; Michel 2019; Munsch et al. 2020; Notch et al. 2020; Hassrick et al 2022.]. Similarly the best available science demonstrates that there is a strong flow: survival relationship in many reaches of the Delta and that survival of juvenile salmon through the Delta "decreases sharply" whenever flows at Freeport are less than approximately 35000 cfs. Perry et al 2018 ("survival decreases sharply and routing into the interior Delta (where survival is low) increases sharply as Delta inflows decline below approximately 1000 m3s-1."). Thus increased flows into and through the Delta during the winter and spring months are critically important for preventing the extinction of winter-run and spring-run Chinook salmon as well as Longfin Smelt and Delta Smelt. Currently the survival of juvenile salmon is unsustainable and inconsistent with continued population viability in part as a result of inadequate instream flows in all but wet periods.	Anderson, J.J., E. Gurarie, and R. W. Zabel. 2005. Mean Free-Path Length Theory of Predator-Prey Interactions: Application to Juvenile Salmon Migration. Ecological Modelling 186(2):196-211. doi: DOI 10.1016/j.ecolmodel.2005.01.014. PubMed PMID: ISI:000230636400004. Michel, C. J., J. J. Notch, F. Cordoleani, A. J. Ammann, and E. M. Danner. 2021. Nonlinear Survival of Imperiled Fish Informs Managed Flows in a Highly Modified River. Ecosphere 12 (5):, e03498. doi: https://doi.org/10.1002/ecs2.3498.
68-137	Despite the voluminous scientific evidence demonstrating the need to significantly increase flows into and through the Delta (Delta outflow) in the winter and spring months the proposed action includes no provisions to require increased Delta outflow	NEPA requires a range of reasonable alternatives to fully inform decisions. Reclamation believes that it is healthy and appropriate to include alternatives with different approaches to increasing Delta outflow. Refer to Standard Response 4, Alternatives

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	in the winter months and it relies on the proposed voluntary agreement to allegedly contribute some modicum of flow to Delta outflow in the spring. See Proposed Action at 9-70 to 9-72. Reliance on the proposed voluntary agreement is unlawful because it is not reasonably certain to occur and even if it were fully implemented the voluntary agreement fails to provide adequate Delta outflows. First the memorandum of understanding for the voluntary agreement explicitly does not commit the signatories to provide the water or funding proposed under the agreement until after the State Water Board takes action to update the Bay-Delta Water Quality Control Plan: The Parties reserve judgment whether they each will sign or otherwise support the Voluntary Agreements and do not at this time commit to any actions described in the Term Sheet. They will decide whether or not to commit to take these actions after the State Water Board adopts a SED and resolution to update the Bay-Delta Plan consistent with Resolution 2018-0059. Memorandum of Understanding [paragraph] 2.2. Because there is no commitment to implement these flow measures and they are not reasonably certain to occur they cannot be considered as part of the project [Footnote 5: The proposed action appears to recognize that the voluntary agreement is not reasonably certain to occur proposing that Reclamation would only make limited commitments to implementing the voluntary agreement for two years and thereafter would make no commitments to implement any Delta outflow shown under the voluntary agreement if the State Water Board and the signatories to the Memorandum of Understanding do not approve the voluntary agreement. See proposed Action at 9-70 to 9-72]. See Nat'l Wildlife Fed. 524 F.3d at 936. Moreover the proposed voluntary agreement provides no mechanism to ensure that promised flows will actually be additive to the baseline. The voluntary agreement assumes water that is not	Formulation, for the rigorous approach Reclamation undertook in the formulation of alternatives to ensure a range of reasonable alternatives. Refer to Standard Response 10, Voluntary Agreements, implementation and representation of Voluntary Agreements in Alternative 2. Reclamation reviewed the requirements of CVPIA (b)(2) and found Alternative 2 consistent with the provision.

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	reasonably certain to occur in specific years such as: water that is to be purchased on the open market which may not materialize depending upon water availability cost and availability of funding; water that would potentially be made available in several years if additional projects are successfully undertaken such as new storage or groundwater substitution infrastructure; water that is only available if there are minimum water supply allocations and offramps do not apply; water that could instead be used to increase water storage behind Shasta dam or shifted to other times of year; water that is modeled to be available in the Tuolumne River but is not an enforceable flow commitment; and water that may not be protected from export operations and may not contribute to Delta outflow. See esp. Memorandum of Understanding Table 1a and Table 1b footnotes 4 7 8 10 11-15; id. at [paragraphs] 5.1(C) 8.3.Moreover the proposed CVP/SWP export curtailment under the voluntary agreement provides less than half of the Delta outflow in April and May that previously resulted from the San Joaquin River inflow:export ratio under the 2009 NMFS Biological Opinion. The incidental take permit for the SWP requires up to 150000 acre feet of export curtailment by the SWP alone in April and May of all water years and the incidental take permit resulted in reduced Delta outflow compared to the 2009 NMFS biological opinion; in contrast the voluntary agreement requires the CVP and SWP to jointly contribute zero acre feet of water to Delta outflow in wet years zero acre feet of water in critically dry years 125000 acre feet in dry and below normal years and 175000 acre feet in above normal years. As a result much of the flow promised in the voluntary agreement would at best only partially replace the Delta outflow that occurred under the 2008 and 2009 BiOps. See also Memorandum of Understanding at [Paragraph symbol] 5.1(A) ("The Parties agree a portion of the volumes of water in Appendix 1 will be managed with a priority	

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	of providing increased flows in the months of April and May in D BN and AN water years to replicate average outflow resulting from the I/E ratio in the 2009 salmonid BiOp as modeled."). It appears that flows proposed under the voluntary agreement may not actually increase Delta outflow but would instead replace (or partially replace) existing flow obligations such as Sacramento River pulse flows see proposed action at 4-2 (VA flow assets may be used to meet part or all of the pulse flow action when the pulse flow is not released due to "other project purposes") summer outflow under the SWP incidental take permit or CVPIA (b)(2) water [Footnote 6: Although the proposed action mentions CVPIA (b)(2) as a legal requirement see proposed action at 9-85 there is no discussion of how (b)(2) assets would be utilized. In recent years Reclamation has violated the Central Valley Project improvement Act by failing to utilize the full volume of (b)(2) flow assets required by the Act including in 2011 2014 2015 2017 2019 and 2020].In addition because of changes to the baseline for measurement even assuming that all of the flows called for under the voluntary agreement materialized the flows provided under the voluntary agreement would be significantly less than they appear. CalSim modeling by Reclamation that was included in the January 2019 draft biological assessment showed that the combination of the voluntary agreement (including 300000 acre feet of CVP/SWP export reductions in dry below normal and above normal years) and the Trump Administration's proposed CVP/SWP operations resulted in less Delta outflow during the January to June period compared to Delta outflow under the 2008/2009 biological opinions. See Exhibit A. Thus even taken at face value it appears that Delta outflow conditions under the voluntary agreement are likely to be worse for the Bay-Delta's endangered fish species than they were under the 2008/20009 biological opinions which state and federal agencies have acknowledged	

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	are inadequate. Finally the proposed voluntary agreement was the product of an exclusionary backroom process that is inconsistent with the Biden Administration's stated goals and commitments to environmental justice and public participation. Native American Tribes environmental justice advocates conservation groups fishing organizations and the public were all prevented from meaningful participation in the development of the voluntary agreement. The Biden Administration should not endorse this deeply flawed exclusionary process by including the potential voluntary agreement in the proposed action. Because the voluntary agreement is not reasonably certain to be adopted and river flows promised therein are not reasonably likely to occur the proposed Delta outflows in the voluntary agreement cannot be considered as a mitigation or conservation measure under the proposed action. Reclamation and DWR must propose alternative measures that adequately increase Delta outflow during the January to June period in order to avoid jeopardizing the continued existence of Longfin Smelt and other threatened and endangered species.	
68-138	Thank you for consideration of our initial comments on the proposed action for reinitiation of consultation. We look forward to discussing these issues with you and we anticipate providing additional comments regarding other elements of the proposed action in the coming weeks.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
68-139	ATTACHMENT 2:[See original comment for "additional NGO comments on proposed action for reinitiation of consultation on CVP/SWP operations"]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
68-140	ATTACHMENT 3:[See original comment for San Fransico Baykeeper et al comment RE Draft Staff Report on Proposed Sacramento/ Delta Updates]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.

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68-141	ATTACHMENT 4:[See original comment for Friends of the River et al comment RE comments on the Draft Environmental Impact Report....]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
68-142	ATTACHMENT 5:[See original comment for Golden State Salmon Association et al comment RE "Years of Delay and Failure in Developing a Bay-Delta Voluntary Agreement"]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
68-143	ATTACHMENT 6:[See original comment for Defenders of Wildlife et al comment RE Exceedances of Endangered Species Act...]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
68-144	ATTACHMENT 7:[See original comment for Defenders of Wildlife California Program Office comments RE Proposal to Reduce Refuge Water Deliveries]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
68-145	ATTACHMENT 8:[See original comment for "NRDC et al Comments on NOI Regarding Reinitiation of Consultation on Long-Term Operations of the CVP and SWP"]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.

Table 4-69. Letter No. 69

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69-1	September 9 2024 [name redacted] Bureau of Reclamation Bay-Delta Office 801 I Street Suite 140Sacramento CA 958142536Submitted via email to: [email address redacted] Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for Long-Term Operations of the Central Valley Project and State Water Project.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text
69-2	Pacific Coast Federation of Fishermen's Associations (PCFFA) represents fishing families and coastal communities that rely on robust salmon stocks in order to provide healthy local and sustainable food to tables in California and beyond. We are currently enduring our second year of full closures in our ocean and river salmon fisheries. The Chinook salmon that we should be providing to millions of Californians right now perished before they reached the ocean due to poor river conditions in 2020-2021; it is not coincidence that the previous Record of Decision (ROD) and Biological Opinions (BiOps) governing water operations of the Central Valley Project (CVP) and State Water Project (SWP) were issued in October 2019.	Opposition to the current ROD and biological opinions is noted.
69-3	Unfortunately this Proposed Action (PA) will not improve the situation for Central Valley (CV) salmonids and other fish species. This PA is another extinction plan for Sacramento River (SR) winter-run Chinook CV spring-run Chinook CV fall-run Chinook and by extension thousands of fishing families and coastal communities that rely on these fish.	Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding support or opposition for the Project.
69-4	Current water operations have devastated fish populations fisheries and coastal communities. The 2019 ROD and BiOps are directly responsible for the sharp decline of CV salmon that have previously supported our fisheries and coastal communities. Adult salmon returning to the Central Valley in the fall of 2019	Information regarding population decline of spring-run and fall-run/late fall-run Chinook salmon in the Sacramento River is provided in Section O.1.3.2 of Appendix O, Fish and Aquatic Resources Technical Appendix. Please see Standard Response 7, Aquatic Resources, Section AD.3.7.2 General Comments Regarding

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	were the first victims of the new water regime. Redds (salmon nests) were dewatered eggs never hatched. Spring of 2020 was very dry and untimely releases from Shasta Dam resulted in high water temperatures (over 60F) by May; egg-to-fry survival was approximately 6%. Any surviving juveniles faced low water flows insufficient to carry them to the ocean; through- delta survival was under 5%. Every stage of the life cycle was impacted by warm water and low flows. Juvenile salmonids of brood-year 2019 were the first cohort that had no protections under the current ROD and BiOps; those fish would have should have become the adults available for ocean harvest in 2022. Actual ocean abundance that year (251000 adults) was only 63% of predicted abundance (396000 adults); escapement to the Sacramento River was a mere 62000 adult fish the second lowest on record (Pacific Fishery Management Council [PFMC] Preseason Report I March 2023).	Adverse Impacts on Aquatic Resources, under Fall-Run Chinook Salmon Impact Analysis and Mitigation.
69-5	California ocean and river salmon fisheries were completely closed in 2023 and 2024 a direct result of water management since the 2019 ROD and BiOps but we have been witnessing a decline in our fisheries for decades. Fishing was once a thriving industry in California supporting tens of thousands of jobs on boats at docks and in ports. Coastal communities were built on salmon but declining ocean abundance accompanied by loss of fishing opportunity has been devastating. In the years 1986-1990 annual commercial ocean harvest in California averaged 795000 fish. That number declined to 365000 fish from 1991-2005 and only 151000 annually since 2006. This steep decline does not even include the complete closures in 2023 and 2024.	Reclamation acknowledges this comment and the information shared by the commenter.
69-6	The California Department of Fish and Wildlife issued 7774 salmon permits in 1980; only 1006 permits remained in 2022 the last year that commercial fishing was open. Because salmon permits are permanently lost when they are not renewed this	Reclamation acknowledges this comment and the information shared by the commenter.

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	attrition in our commercial fleet is an accurate representation of the fleet's confidence in our future success. The California commercial fleet averaged 58000 days of fishing per year in 1986-1990. That number declined to 20000 days per year from 1991-2005 and only 11000 days per year since 2006. We have lost 82% of our livelihood in less than 40 years. Again this loss does not include the complete closures in 2023 and 2024. (We include averaged statistics here in order to avoid misinterpretation of the natural fluctuations seen in all wild populations. All historical data PFMC Salmon Review Appendix A.)	
69-7	Under the 1992 Central Valley Project Improvement Act (CVPIA) protecting fish and wildlife including a program to double the natural production of CV fall-run Chinook which are the backbone of ocean salmon fisheries that support thousands of fishing jobs in California Oregon and parts of Washington is an equal project purpose to making water deliveries pursuant to water supply contracts. Ocean abundance of CV Chinook salmon should be greater than 1 million fish as promised by the 1992 CVPIA when fish populations numbered approximately 500000. Instead this PA seems to accept that a halving of ocean abundance is an acceptable target rather than the doubling specified by the CVPIA.	The description of the proposed action and action alternatives does not indicate an intent by Reclamation to deviate from the CVPIA. Reclamation follows all applicable laws and regulations.
69-8	Preferred Alternative 2B is not an improvement from current operations. Bureau of Reclamation (BOR) identifies Alternative 2B as one which best suits the Purpose and Need. We note that the published Purpose and Need (Federal Register vol 87 no. 39) does not make clear that CVP and SWP's obligations to fulfill the terms and conditions of water supply contracts are subservient to BOR's obligation to ensure that the coordinated operations of the CVP and SWP comply with the Endangered Species Act (ESA) and National Environmental Policy Act (NEPA). Long-term	Reclamation complies with applicable federal laws and regulations. Refer to Standard Response 4, Alternatives Formulation, regarding the purpose and need for the action, including satisfying contractual obligations and agreements.

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	operation of CVP and SWP must be improved. Current water operations are inadequate to avoid jeopardizing ESA-listed and commercially important species. CV salmonid populations are in precipitous decline single percentages of their historic averages over thousands of years. Merely maintaining current low numbers on the Threatened or Endangered ESA lists is unacceptable.	
69-9	Unfortunately Alternative 2B is not substantively different from the No Action Alternative (NAA). "Alternative 2 is expected to have changes that result in minor to moderate adverse and beneficial impacts" (p. 12-28 12-33 12-34 O-1616 through O-1623 among others). This collection of "minor to moderate" and simultaneously "adverse and beneficial" impacts is woefully insufficient. Comparison of alternatives to a NAA baseline suggests that only minor modifications need occur in order to satisfy ESA and NEPA requirements. In fact we need major and substantive changes to the operations of CVP and SWP in order to rebuild our ecosystems and fish populations.	Please refer to Standard Response 4, Alternatives Formulation, for the rigorous approach Reclamation undertook to develop alternatives and ensure a range of reasonable alternatives. Each alternative has a different approach for Shasta Reservoir coldwater pool management.
69-10	As noted above the current set of regulations governing operations of CVP and SWP have already forced our ocean and river fisheries into full closure. Simply showing that effects of the proposed action are similar to or not worse than the baseline NAA is inadequate to meet obligations under the ESA and NEPA let alone allow for sustainable fisheries.	NEPA requires the alternatives to be compared to the No Action Alternative to assess potential impacts, as described in Standard Response 3, Baseline and No Action. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis in the Draft EIS. Refer to Standard Response 2, Related Regulatory Processes, regarding how Reclamation has coordinated NEPA review with the ESA-required studies and processes.
69-11	Proposed Action does not realistically consider the amount of water available in the Sacramento River. Modeling inputs and projections presented in the DEIS are based on the historical water record rather than the reduced water available under	The modeling conducted for the Draft EIS includes projected climate change assumptions corresponding to 2022 median hydrologic conditions and 15 cm sea level rise. The climate change and sea level rise assumptions are described in detail in

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	current conditions or future conditions which are likely to be hotter and drier from climate change impacts. At a minimum modeling should be conducted with realistic estimates of water available in the Sacramento River.	Appendix F, Modeling, Attachment 1-1, Climate Change, of the DEIS, and in Standard Response 9, Climate Change. Please refer to Standard Response 9, Climate Change, regarding the consideration of climate change in the analysis provided in the EIS.
69-12	The CVP currently delivers an annual average of 5 million acre-feet (MAF) of water for farms; 600 thousand acre-feet (TAF) of water for municipal and industrial (M&I) uses; and 355 TAF of water for wildlife refuges. The SWP delivers an annual average of 2.6 MAF of contracted water (DEIS p.1- 2). On the contrary current CVP contracts total 9.5 MAF (Bureau of Reclamation) 160% of actual deliveries; current SWP contracts total 4.2 MAF (CA Department of Water Resources) 162% of actual deliveries. The Sacramento River is overallocated with "paper water" in the best of circumstances; for Dry and Critically Dry years water operations models must should reflect the reality that the Sacramento River system will not continue producing water indefinitely. Without realistic analysis of the water available any assumptions about the reliability of water deliveries are fatally flawed. Water contractors can not reasonably expect to receive 160% of the actual water available in the Sacramento River while fisheries and coastal communities are experiencing full closures population collapses and economic disasters.	In the modeling conducted for the Draft EIS, CVP and SWP deliveries are subject to water availability, water rights, project contract obligations, and other regulatory constraints. CalSim includes allocation logic for determining deliveries to north-of-Delta and south-of-Delta CVP and SWP contractors. The delivery logic uses runoff forecast information, which incorporates uncertainty in the hydrology, and a rule curve which relates water supply to allocations. Water supply is defined by forecasted inflow and storage availability in CVP and SWP reservoirs. Allocation is first determined in March and updated in April and May as runoff forecasts become more certain. CVP and SWP water allocations and assumptions for each alternative are described in Appendix F, Modeling. Additionally, a detailed listing of CVP and SWP contract assumptions is included in the delivery specifications tables in Appendix F, Section F.1-3 CalSim 3 Contracts.
69-13	DEIS does not adequately account for likelihood of drought. The PA includes a "Drought Toolkit" (Appendix AB Section 3.12) which remains undefined. Given the likelihood that California experiences a drought in the near future any Drought Toolkit must be considered in the analysis of effects on sensitive species.	Refer to Standard Response 6, Hydrologic Modeling and Surface Water Resources, regarding modeling assumptions and output analysis of droughts. CalSim 3 includes a 100-year period of record adjusted for climate change and includes multiple drought sequences. Where drought actions and the associated consequences are well understood and can be reliably implemented, those actions are

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		incorporated into the Proposed Action. Where drought actions have potential impacts that depend upon year-specific circumstances, they remain as part of the tool kit. Reclamation would meet and confer with the USFWS, NMFS, DWR, CDFW, and Sacramento River Settlement Contractors on voluntary measures to be considered for implementation if drought conditions continue into the following year, including measures that may be beyond Reclamation and DWR's discretion. If dry conditions continue, Reclamation would regularly meet with this group (and potentially other agencies and organizations) to evaluate current hydrologic conditions and the potential for continued dry conditions that may necessitate the need for development of a drought contingency plan (that may include actions from the toolkit) for the water year.
69-14	Proposed Action includes the use of Temporary Urgency Change Petitions. In addition to being fundamentally harmful to CV salmonid and other fish species the preferred Alternative 2B includes the use of Temporary Urgency Change Petitions (TUCP) in order to circumvent any environmental and species protections included in the PA. In the case of Dry or Critically Dry years when fish species and water quality are most at risk water operators reserve the option of ignoring any environmental protections by applying for a TUCP from the State Water Resources Control Board (SWRCB). This is not a hypothetical scenario. BOR and Department of Water Resources have obtained TUCPs to violate water quality objectives in the Bay-Delta Water Quality Control Plan in 2014 2015 2016 2021 and 2022. These violations of water quality objectives caused devastating impacts to outmigrating salmonids with a direct impact on ocean abundance in 2023 and 2024. As detailed above juveniles that were unable to reach the ocean in the spring of 2021 under the conditions of the TUCP did not mature	Refer to Standard Response 6, Hydrologic Modeling and Surface Water Resources, regarding modeling assumptions and output analysis of droughts. Alternative 2 is analyzed in phases to accommodate voluntary flow contributions and state board decisions which are outside Reclamation's direct control. Those phases include operations with a Temporary Urgency Change Petition; the full Voluntary Agreement alternative to the Bay-Delta Plan update; early implementation of Delta export reductions; and no additional winter and spring Delta outflow. The phases of the preferred alternative (Alt 2) include: • Alternative 2 with Temporary Urgency Change Permits (Alt2v1wTUCP) • Alternative 2 without Voluntary Agreements (Alt2v1woTUCP) • Alternative 2 with Early Implementation of Delta Voluntary Agreements (Alt2v2woTUCP)

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	to adults for harvest in 2023 resulting in full closures for ocean and river fisheries. Reclamation and DWR must develop a plan for meeting minimum water quality objectives during droughts rather than assuming that the projects will be allowed to violate water quality objectives through TUCPs in future droughts. Future drought is a certainty in California and TUCPs are an explicit strategy to circumvent all water quality protections for fish and ecosystems.	• Implementation of all Voluntary Agreements (Alt2v3woTUCP)
69-15	DEIS does not sufficiently analyze impacts on CV fall-run Chinook. Though there are important differences in the timing and range of the CV salmon stocks many factors under review in this DEIS will affect the long-term success of CV fall-run Chinook: spawning habitat freshwater rearing habitat including temperature and flow measures freshwater migration corridors and estuarine habitat. We recognize that CV fall-run are not explicitly analyzed in the current DEIS but their commercial recreational cultural and food security value must not be overlooked when considering future water management in California. Federal agencies have an obligation not only to protect listed species from further harm but to ensure that species do not become listed in the first place. Operations must ensure that actions intended to protect ESA-listed CV spring-run and SR winter-run Chinook do not inadvertently harm CV fall-run Chinook. Robbing Peter to pay Paul is not an appropriate strategy for the long-term sustainability of our ecosystems fishing communities or food security. For example Shasta Dam is operated primarily for temperature protections of SR winter-run egg incubation during summer months; abrupt cessation of these water releases has led to dewatering of CV fall-run redds. This PA has no mechanism to respond to situations when protections for one species are causing harm to another. Water management and dam operations must be considered with a	Refer to Standard Response 7, Aquatic Resources, regarding comments on the aquatic analyses in the EIS, including potential impacts on fall-run Chinook salmon and mitigation. Analyses of potential impacts and benefits for fall-run Chinook salmon spawning and rearing habitat are described in EIS Chapter 12, Fish and Aquatic Resources, and in Appendix O, Fish and Aquatic Resources Technical Appendix, Sections O.4.14, O.5.14, O.6.14, and O.7.14. The No Action Alternative, Alternative 2, and Alternative 4 include specific measures to protect fall-run Chinook salmon, including rice decomposition smoothing in the Sacramento River and minimum flow requirements in the lower American River.

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	wholistic ecosystem-wide approach rather than focused on a single ESA-listed run.	
69-16	Alternative 3 is the only alternative which improves major measures of ecosystem health and determinants of salmonid survival. Several DEIS analyses clearly indicate that the Proposed Action will continue the trend towards extinction for ESA-listed and commercially important salmonids or even exacerbate their decline. The "CVPIA SIT winter-run life-cycle model" (Appendix F Modeling Attachment F p. 2) predicts that Alternative 2 variants will result in population growth rates that are lower than the NAA in most cases (Tables F.2-9 and F.2-10). Addition of the Voluntary Agreements to Alternative 2 leads to the worst population declines. Alternative 3 is the only set of operational criteria expected to produce population growth over the model's 19-year study period. (Table F.2-10).	Support for Alternative 3 is noted. Please refer to Standard Response 10, Voluntary Agreements, regarding general concern about voluntary agreements.
69-17	Though Delta smelt are not a fishery resource they are an indicator species of ecosystem health in the San Francisco Bay-Delta including delta flows X2 position and juvenile entrainment all of which are critical to the survival of outmigrating salmonids. Figure 0-24 (p. 0-30) summarizes the projected overall effects on Delta smelt success. As with SR winter-run Chinook Alternative 3 is the only alternative proposed in this document that is expected to support survival of Delta smelt. All other alternatives are expected to produce a scenario in which the reproductive rate drops below 1.0 which is the most basic recipe for extinction. The factors used to reach the conclusion that Alternative 3 is the only one to support Delta smelt reproductive rates greater than 1.0 are the very same factors linked to salmonid outmigration success. It is therefore reasonable that Alternative 3 is the only one to provide conditions which support a CV salmonid species reproductive rate greater than 1. Specifically Delta flows are improved (p. 0-5) the X2 position	Support for Alternative 3 is noted. Please refer to Standard Response 4, Alternatives Formulation, for a discussion on how alternatives were developed and selected.

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	moves westward (p. 0-7) and juvenile entrainment decreases (p. 0-34). Keeping listed species at the brink of extinction is not a long-term plan for success in the Bay-Delta ecosystem. Rather than simply maintaining fish populations at their low levels we need to prioritize a spawner replacement rate much greater than 1.	
69-18	Importance of listed stocks to ocean fisheries ESA-listed Endangered SR winter-run and Threatened CV spring-run stocks are not the target harvest of commercial and recreational fishing fleets. Our seasons are carefully constructed to allow harvest of the more robust CV fall-run stock while avoiding the less-abundant SR winter-run and CV spring-run (PFMC Salmon Fishery Management Plan 2024). Though listed stocks are not the primary constituent of our harvest we are limited in our access to healthy stocks because fish from all CV stocks as well as salmon from other river systems mix in the ocean when following ocean currents and schools of feed. When ESA-listed stocks continue to decline our ability to work support our families and communities and provide sustainable seafood to California markets is severely constrained. In the past decades we have watched SR winter-run and CV spring-run populations decline and restrict our fisheries. Our seasons have been severely limited in recent decades and we have lost access to our traditional April and May salmon fisheries completely in order to avoid ESA-listed SR winter-run and CV spring-run Chinook.	Reclamation acknowledges this comment, and the information shared by the commenter. Please see Standard Response 7, Aquatic Resources, for a discussion of impacts related to fisheries.
69-19	Ocean salmon fisheries will pay the price for a flawed DEIS. Finally we object strongly to the idea that ocean salmon fisheries would not be impacted by this Proposed Action. The DEIS states that "[a]nnual average Central Valley Chinook salmon abundance (includes spring winter fall and late-fall runs) in the Bay under all alternatives would be negligible in comparison to the No Action Alternative" (p. 0-46 through 0-47 14-9 through 14-10). This	In compliance with NEPA, EIS Chapter 12, Aquatic Resources, and Appendix O, Aquatic Resources Technical Appendix, adequately describe the affected environment for the purposes of understanding potential impacts. The information in the EIS is well-supported by citations throughout the document and Appendix B, References. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the use of high-

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	assertion is patently untrue and contradicts the BOR's own findings that these alternatives (with the notable exception of Alternative 3) are likely to negatively impact all determinants of salmonid success: spawning (p. 0-23 0-34 among others) redd dewatering (p. 0-34 among others) egg-to-fry survival and outmigration (p.0-22 0-33 among others).There are multiple logical fallacies present in the above statement and summarized in Figure 0-33 Central Valley Chinook Salmon Abundance and Figure 0-34 Estimates of CV Chinook adult biomass in the Pacific Ocean. Firstly the purported ocean abundance of CV Chinook under the NAA is incorrect. Figure 0-33 claims an ocean abundance of approximately 230000 adults. Actual abundance of CV Chinook was under 140000 adults in 2023; predicted ocean abundance in 2024 is 214000 adults (PFMC Preseason Report I March 2024). The deleterious effects of current water management that we have already experienced under the baseline NAA are underestimated in Figure 0-33. Secondly this PA comprises an extremely complicated set of water operations that will most certainly have an effect on juvenile survival therefore ocean abundance. A most elementary understanding of biology would conclude that eggs become juveniles and juveniles become adults; lower in-stream and outmigration success inevitably leads to fewer adults in the ocean. The flatline "effects" of the alternatives presented here would be comedic were they not so tragically misrepresentative. Furthermore an ocean abundance of 230000 adult fish is a fraction of the amount needed to support fisheries and only 23% of the CVPIA target of 1 million fish. Despite the assertion that "revenues received by fisherman [sic] from changes to ocean salmon harvest are expected to be the same" (p. 0-45 through 0-46) our commercial and recreational fisheries have been devastated by poor water management in the past decades. Figure 0-34 claims that each alternative would yield approximately 3.5 million	quality information and the sufficiency of the analysis provided in the EIS. The determination of impact is a comparative analysis to the No Action Alternative. Please also refer to Standard Response 3, Baseline and No Action, regarding the sufficiency of the baseline and no action used in the EIS analysis. Please also refer to Standard Response 7, Aquatic Resources, for a discussion regarding the use of modeling for the evaluation of potential impacts on aquatic resources.

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	pounds of salmon abundance and biomass in the Pacific Ocean. Actual data since 2006 (PFMC Salmon Review Appendix A) show that average annual ocean harvest is approximately 60% of the expectation within this DEIS (151000 fish in the commercial sector and 61000 in the recreational sector vs. approximately 350000 fish expected). Additionally Figure 0-34 fails to account for the realities of ocean salmon management. The expectation of 3.5 million pounds of harvested biomass assumes that our commercial and recreational fleets have access to any theoretical ocean abundance. If SR winter-run and CV spring- run Chinook continue to be ESA-listed as Endangered and Threatened ocean harvest is limited to protect weak stocks; as described above even if our target stock of CV fall-run Chinook were to be abundant we would be unable to harvest them because ocean salmon fisheries are managed with a mixed-stock model. The inaccuracy of the assertion that ocean abundance would remain constant is offensive to those of us who have lost our livelihoods due to declining ocean abundance during the period of CVP and SWP operations. The implication that water operations would result in no impacts to fisheries and fishing communities is so blatantly absurd we question why this section was included for review.	
69-20	Alternative 3 is the only alternative that supports recovery. We urge BOR to consider adoption of Alternative 3 as the only alternative under consideration that actually improves fish populations. All other options presented in this DEIS will exacerbate the trend towards habitat loss fish population declines and an idled fishing industry. Without sufficient ocean abundance for meaningful commercial harvest the commercial fishing fleet faces extinction. This loss is not just about thousands of small California businesses disappearing or multi-generational families losing their legacies. It goes deeper	Support for Alternative 3 is noted. Please refer to Standard Response 4, Alternatives Formation, for a description of the purpose and need and Standard Response 2, Related Regulatory Processes, for a description of the interplay of related regulatory processes, including the ESA. Refer also to Standard Response 7, Aquatic Resources, in addition to Chapter 12 and Appendix O, for the analysis of impacts to aquatic resources. Refer also to Chapter 14 and Appendix Q for an analysis of economic impacts.

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	touching the very fabric of California's history and culture. California communities built around commercial fishing also suffer leading to the loss of support jobs collapsing coastal economies and depriving Californians of wild healthy and sustainable seafood.	
69-21	We look forward to reading the final EIS and hope it is the first step towards recovering our fish populations fishing heritage and coastal communities. PCFFA remains committed to working with the Bureau of Reclamation and other federal agencies to fulfill ESA and NEPA obligations rebuild fisheries and support all Californians. Thank You [name redacted] Executive Director from: [name redacted] To: BDO Comments BOR MPR Subject: [EXTERNAL] PCFFA Comments re LTO DEIS Date: Monday September 9 2024 9:28:54 PMAttachments: 2024_Sept_PCFFA_EIS_comments.pdf This email has been received from outside of DOI - Use caution before clicking on links opening attachments or responding. Comments from the Pacific Coast Federation of Fishermen's Associations regarding the Draft Environmental Impact Statement for Long-Term Operation of the Central Valley Project and State Water Project are attached. Please confirm receipt of these comments. Thank you [name and phone number redacted]	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.

Table 4-70. Letter No. 70

Ltr#-Cmt#	Comment	Response
70-1	September 9 2024Via Electronic Mail U.S. Bureau of Reclamation Bay-Delta Office801 I Street Suite 140Sacramento CA 95814 sha-MPR-BDO@usbr.gov Re: Comments on Draft Environmental Impact Statement for the Long-Term Operations of the Central Valley Project and State Water Project Dear Bureau of Reclamation: Our office submits these comments to the Bureau of Reclamation (Reclamation) on behalf of Byron-Bethany Irrigation District (BBID). BBID appreciates the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for the Long-Term Operations (LTO) of the Central Valley Project (CVP) and State Water Project (SWP).	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
70-2	BBID holds two CVP contracts and two appropriative water rights: (1) a pre-1914 appropriative water right; and (2) a post-1914 appropriative water right. BBID's pre-1914 right is evidenced by a Notice of Appropriation of Water that BBID's predecessor-in-interest perfected entitling the diversion of water from a channel off of the west bank of Old River in the Delta (i.e. Italian Slough). In 1964 under a contract with the Department of Water Resources (DWR) BBID relocated its point of diversion to accommodate the construction of the SWP. BBID's point of diversion is now and since 1964 has been located within Clifton Court Forebay at the intake channel of the Banks Pumping Plant. BBID's post-1914 right authorizes diversion from "Wicklund Cut" an irrigation inlet off Old River. BBID is therefore keenly interested in the impacts associated with the LTO of the CVP and SWP as its points of diversion particularly under its pre-1914 right make it uniquely situated to bear operational impacts resulting from CVP and SWP operations.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.

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70-3	1. Water Supply Impacts The Preferred Alternative identified in the DEIS (Alternative 2B) extends operation of Clifton Court Forebay from mid-December through mid-March to December 1 through March 31 effectively increasing SWP operations by one month. (DEIS p. 6-18 [6.3.5.5].) The DEIS indicates that this change may result in exceeding seasonal and weekly salvage thresholds frequently resulting in additional export restrictions and potentially decreased availability of water supplies. [Italics:(Ibid.)] However despite this uncertainty analysis of the extended operation contemplated by Alternative 2B is qualitative not quantitative because "[t]hese components were not available in time to be included in quantitative modeling." (DEIS p. 0-3.) Any changes that will affect Clifton Court Forebay are of utmost importance to BBID given its point of diversion under its pre-1914 appropriative water right. BBID is very concerned that Reclamation will commit to Alternative 2B without performing quantitative analysis despite the lack of sufficient information to determine whether impacts will result.	Alternative 2B built upon modeling conducted for Alternative 2. Modeling for Alternative 2 has been updated in the Final EIS to include actions and assumptions of Alternative 2B. The document no longer contains a separate Alternative 2B.
70-4	2.Increased Treatment Window for Harmful Algal Blooms (HABs) The DEIS represents that under all alternatives DWR will extend the treatment window to apply herbicides and algaecides in Clifton Court Forebay until August 31. It is not clear why Reclamation proposes to do so given that the DEIS concludes that Alternatives 1 2 and 4 are not expected to have a significant impact on the conditions giving rise to HABs. In current conditions DWR already applies herbicide to Clifton Court Forebay on or around July 1 of each year. This multi-day treatment creates a significant hardship for BBID because it requires BBID to shut down its diversion during the peak irrigation season. Critically it also eliminates the raw water supply for the City of Mountain House which does not have	Clifton Court Forebay Weed and Algal management is a common component to all alternatives and as described in Appendix E, Alternatives, does extend to treatments, as needed, to August 31. Reclamation has updated the FEIS to include the following mitigation measure in Appendix D Mitigation Measures and Chapter 5 and Appendix H Water Supply: DWR will coordinate with BBID prior to herbicide treatments. The EIS evaluates potential cumulative impacts in compliance with NEPA. Please refer to Chapters 4, 5, and 21 and associated appendices G, Water Quality, H, Water Supply, and X, Public Health and Safety, which address cumulative impacts for the

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	sufficient storage capacity to meet its needs during the application period. This creates a significant impact. Moreover given the Delta Conveyance Project's anticipated effect of increasing HABs in the Delta and necessitating additional increases in treatment impacts will be cumulatively significant.	specific environmental resource evaluated, as well as Appendix Y, Cumulative Impacts Technical Appendix, regarding the consideration Delta Conveyance Project in the cumulative analysis.
70-5	Should you have any questions about these comments please do not hesitate to contact me. Very truly yours [name redacted] General Counsel Byron-Bethany Irrigation District	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.

Table 4-71. Letter No. 71

Ltr#-Cmt#	Comment	Response
71-1	September 9 2024U.S. Bureau of Reclamation California Great Basin Region Attention Bay-Delta-Office801 I Street Suite 140Sacramento CA 95814Via email: [Email Address Redacted] Re: Comments on Bureau of Reclamation DEIS (EIS No. 20240131) on Long-Term Operations of the CVP and SWP Dear U.S. Bureau of Reclamation: Please accept these public interest organizations' comments pursuant to the National Environmental Policy Act (NEPA) on the U.S. Bureau of Reclamation Draft Environmental Impact Statement (Draft EIS) on Long-Term Operations of the Central Valley Project (CVP) and State Water Project (SWP.) The Draft EIS was issued for public review on July 26 2024. These supplemental comments are submitted by the following non-profit organizations: the Planning and Conservation League North Coast Rivers Alliance Save the American River Association Northern California Council Fly Fishers International Southern California Watershed Alliance Sierra Club California AquAlliance Center for Biological Diversity California Water Impact Network and the Environmental Water Caucus.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
71-2	I. Discussion. September 2021 the U.S. Bureau of Reclamation (USBR) requested to reinitiate the Endangered Species Act consultation for the Long-Term Operations Plan (LTOP) for the Central Valley Project (CVP) and State Water Project (SWP). The stated goals were to support species viability protect life history diversity support operational flexibility provide regulatory certainty support science and monitoring and create a single adaptable coordinated operation for the CVP and SWP. The proposed plan includes five alternatives that reflect a range of alternatives for the long-term operation of the Central Valley	Support for Alternative 3 is noted. Please refer to the September 2021 reinitiation letter for the reasoning behind the reinitiation of consultation. Also, please refer to Standard Response 4, Alternatives Formulation, for a discussion on the rigorous approach Reclamation undertook in the development of alternatives.

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	Project and Delta facilities of the State Water Project. As described below all alternatives except alternative 3 are unacceptable.	
71-3	A. The Selection of the 2019 Biological Opinion as the No Action Alternative Does Not Comply with NEPA. Under the National Environmental Policy Act (NEPA) establishing an appropriate baseline or no action alternative is crucial for accurately assessing the environmental impacts of proposed federal actions. The no action alternative describes what would happen if the proposed federal action is not implemented. It serves as a benchmark for comparing the impacts of other alternatives. The current baseline in the DEIS does not meet this test. The DEIS baseline is not a 'benchmark' for current operations for a number of reasons:1. The proposed no action alternative the "2019 BiOps" is not a viable operations plan and currently is not consistent and in compliance with the California Endangered Species Act. [Footnote 1: See "No Action Alternative" that would continue implementation of the 2020 Record of Decision on the Reinitiation of Consultation on the Coordinated Long-Term Operation of the CVP and SWP. "No Action Alternative: continued operation of the CVP and SWP as described in the 2020 Record of Decision and subject to the 2019 Biological Opinions. DWR would also operate the SWP consistent with the California Department of Fish and Wildlife's 2020 Incidental Take Permit for the SWP." Pg 0-2 to 0-3 https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=54803] [Footnote 2: See 1:20-cv-00431 JLT EPG 1:20-cv-00426 JLT EPG PACIFIC COAST FEDERATION OF FISHERMEN'S ASSOCIATIONS et al. Plaintiffs v. GINA RAIMONDO et al. Defendants. THE CALIFORNIA NATURAL RESOURCES AGENCY et al. Plaintiffs v. GINA RAIMONDO et al. Defendants. Civ. No. This litigation is currently stayed through December 20 2024. Dkt.	Please refer to Standard Response 3, Baseline and No Action, regarding the use of the No Action Alternative for the purposes of NEPA. Reclamation is a federal agency not subject to CESA. Please refer to Standard Response 2, Related Regulatory Processes. The 2021 LTO No Action Alternative (2019 operations) was simulated using the latest models including CalSim 3 and DSM2, with an extended simulation period to 2021. Thus, models used in comparison of the alternatives are consistent. Models used in the LTO version of DSM2 provided by DWR are based onoff of v8.2.2. The models were then generated with the 2022 median climate boundary conditions and added to the setups. The simulation period is from October 1921 through September 2021 (100 years). All of the Alternatives and the No Action Alternative in the LTO use the 1921–2021 historical record. This hydrology has been perturbated as described in the EIS (Attachment F.1-1, Climate Change) to create the 2022 +/-15 median hydrology. This 2022 median climate hydrology is used in the No Action Alternative and Alternatives to address the impacts over the timeframe of implementation.

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	#511 512. An interim operations plan (IOP) is in effect to govern CVP/SWP operations through that date] [Footnote 3: The SWP sought and obtained an Incidental Take Permit [hyperlink: https://mavensnotebook.com/glossary/incidental-take-permit/] for SWP operations under the California Endangered Species Act. That permit was issued in March of 2020. USBR does not have a CSEA take permit in accordance with State law and there is a lack of consistency with the federal 2019 BiOp which creates operational problems. The CVP/SWP are currently operating under an interim plan under the court's jurisdiction]2. As DWR has stated the "2019 BiOp" scenario is an artificial regulatory construct on which the SWP could not operate to because by itself the 2019 BiOps do not include necessary coverage under CESA. The SWP received a consistency determination (CD) from CDFW on the 2008-2009 BiOps for its CESA coverage so those items in the aggregate represent a valid regulatory construct on which the SWP did indeed operate to. The 2019 BiOps can only be coupled with the 2020 ITP to form a valid and complete operating structure providing coverage under both ESA and CESA"[Footnote 4: DWR statement see Pg 6:https://www.mwdh2o.com/media/18577/dwr-delivery-capability-report-2019.pdf]3.The 2019 BiOps No Action alternative benchmark relies upon stale data that is decades old. The 2019 BiOps operations modeling used the Delta Simulation Model II Version 8.0.6 (2010) which used a model simulation period from 1922-2003 thus creating a biased overestimate of predicted flows under a number of operations in the Delta Estuary including water available for Trinity River exports and flows in the Sacramento River along with meeting required temperatures. [Footnote 5: The Delta Simulation Model II (DSM2) Version 8.0.6 was released on November 17 2010. https://water.ca.gov/Library/Modeling-and-Analysis/Bay-Delta-Region-models-and-tools/Delta-Simulation- Model-II 6 See the	

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	USGS publication: https://pubs.usgs.gov/of/2018/1028/ofr20181028.pdf] [Footnote 6: See the USGS publication: https://pubs.usgs.gov/of/2018/1028/ofr20181028.pdf"The 2019 Biological Opinion for the long-term operations of the Central Valley Project and State Water Project used the CalSim II simulation period of 1922-2003. Specifically the Final State Water Project Delivery Capability Report 2019 states that it uses "CalSim II and a simulation period of 1922 2003" for its analysis"] [Footnote 7: See this USGS study which notes the biased flow predictions from the use of DSM2 model Version 8.0.6. Version 8.0.6 does not accurately predict tidal phasing and routinely overestimated the magnitude of flow at specific locations according to USGS publication in 2018. https://pubs.usgs.gov/of/2018/1028/ofr20181028.pdf]4.The 2019 BiOps is not a current operations plan and yet is used throughout the document as a basis of comparison to determine impacts and to analyze operations and determine by comparison impacts from the proposed action. This failure to provide an accurate baseline and no action alternative creates bias throughout all the alternatives being considered because they are judged in comparison with this "artificial regulatory construct' non- operative plan. This calls into question the degree to which the action may adversely affect an endangered or threatened species or its habitat. And further how or whether the proposed action threatens a violation of Federal State or local law or requirements imposed for the protection of the environment.	
71-4	B. A More Accurate Baseline and No Action Alternative Can be Found in Long-Term Operation Biological Assessment Appendix AB Chapter 2 Environmental Baseline: EXP3 More Accurately Reflects the 'No Action Alternative.' [Footnote 8: See the July	Please see Standard Response 3, Baseline and No Action, regarding the use of the No Action Alternative for the purposes of NEPA. Please refer to Standard Response 2, Related Regulatory Processes, regarding the Section 7 consultation on the LTO of the

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	2024 Long-Term Operation Biological Assessment Appendix AB Chapter 2 Environmental Baseline. Chapter 2 pgs 2-5 to 2-6]In the DEIS Appendix AB Chapter 2 the EXP3 modeled alternative would more accurately reflect a "no action alternative""EXP3 identifies those ongoing operations that are not within the agencies' discretion to modify. In EXP3 Reclamation and DWR not only store and release inflow but release stored water in the absence of other intervening factors (e.g. Congressional Directive Temporary Urgency Change Petitions Voluntary Programs Board Order Shortage Provisions) to meet regulatory requirements and senior water rights demands." [Footnote 9: Ibid]"EXP3 attempts to model how much water is needed to meet "ongoing agency activities . . . that are not within the agency's discretion to modify" consistent with the definition of environmental baseline 50 CFR 402.02. It includes some reasonable assumptions for how the projects would operate to meet certain requirements and obligations."[Footnote 10: Ibid]The EXP3 model does have some assumptions that potentially could conflict with State Water Resources Control Board Order 90-5. While there is some discretion the requirement to meet specified temperature controls for the Sacramento River is not discretionary when it comes to the survival of endangered salmon and other species. Temperature requirements are routinely waived which has had devastating impact to the survival of salmon and has significantly altered critical habitat both for listed salmon steelhead and sturgeon species and for terrestrial wildlife and the giant garter snake habitat.The EXP3 model if used as the baseline and 'no action' alternative would provide the public and decision makers with a more accurate basis to evaluate the analytical approach taken by USBR to assess how the long-term operations (LTO) of the CVP and SWP affect the exposure response and risk to select ESA-listed species (individuals and populations). The EXP3 model also	CVP and SWP under the Endangered Species Act. The environmental baseline for ESA purposes is not the same as the No Action Alternative. Reclamation is using the NEPA definition of 'No Action,' current management and intensity, to describe the No Action Alternative. EXP 3 was prepared for formal section 7 consultation under the ESA, which refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. (50 CFR 402.02 "Environmental baseline"). EXP 1 was included to describe conditions under Run of River, with no storage of water, while EXP 3 minimizes the release of stored water. EXP 3 does not include the release of water for CVP contracts and additional pulse flows and delta outflows.

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	enables improved assessment of whether quantitative and qualitative methods and risk assessment tools are used appropriately. Without an extensive reanalysis using the EXP3 model the draft analyses in the DEIS fails to accurately explain the exposure response and risk from project operations (alternatives) for individuals populations and habitats for ESA species by biasing the major effects from the alternatives and critical mitigation. Updated modeling must be used for the No Action alternative along with an accurate depiction of the project without the proposed action. The impact analysis would thus include the discretionary actions that have consequences for endangered species and modification of critical habitat. The impact analysis across all alternatives must be redone to accurately disclose the impact to endangered species and critical habitat from these alternatives for the Central Valley Project and State Water Projects entire geographical boundaries without arbitrary limits. [Footnote 11 : See Delta Simulation Model II (DSM2) Methods and Results for State Water Resources Control Board the Proposed Voluntary Agreements Draft Staff Report: Sacramento/Delta Update; September 2023 to the Bay-Delta Plan pgs G3b- 1 & G3b-2 https://water.ca.gov/Library/Modeling-and-Analysis/Bay-Delta-Region-models-and-tools/Delta-Simulation- Model-II]	
71-5	C. The Arbitrary DEIS Geographical Limit Placed on CVP Operations Results in a Failure to Analyze and Disclose Significant Environmental Impacts to the Federal and State Wild and Scenic Trinity River and the San Joaquin River.1. Trinity River: The Trinity River Division (TRD) is part of the Central Valley Project and its operations but the DEIS did not include impacts from CVP operations on the Trinity River resources nor did the DEIS analyze impacts from the various operational components associated with the Trinity River portion of the TRD. The failure	The Trinity River Division is part of the Central Valley Project. All of the alternatives in the Draft EIS for the long-term operation of the Central Valley Project and the State Water Project include the continued implementation of the Trinity ROD flows. Please refer to Standard Response 8, Trinity River, regarding the consideration of Trinity River operations in the EIS and future environmental review processes anticipated for the Trinity River.

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	to analyze and disclose impacts to the Tribal fishery resources endangered and threatened species and impacts to the Federal Wild and Scenic values creates an overestimate of the water available for export to the CVP. Furthermore not only are the water supplies available for export artificially inflated but failure to include required consultations for endangered species on the Trinity River jeopardizes the accuracy and integrity of the DEIS. Reclamation's failure to determine ESA Humboldt County and tribal requirements for TRD water prior to allocating TRD water for diversion to the Central Valley and the failure to integrate that determination into the comprehensive LTOP will result in uncertainty and the potential for additional litigation. The arbitrary piecemeal approach currently being undertaken by USBR will lead to uncertainty and likely undermine the finality that all parties seek in the operations of the CVP/SWP. The DEIS impacts analysis did not consider any impacts of the proposed action on the Trinity and Klamath rivers or their associated listed species (i.e. Pacific eulachon Southern Oregon/Northern California Coast coho salmon) and designated critical habitats. Neither was production of currently unlisted Upper Klamath-Trinity River Chinook salmon evaluated as it pertains to Chinook salmon availability as prey for Southern Resident killer whales (SRKW).Downstream water management and operations of the CVP are of critical significance and importance to the Trinity River its resources and the Hoopa Valley Tribe. It appears USBR is attempting to finalize the long-term operations plan for the CVP/SWP prior to completing their ongoing ESA consultation relating to the Trinity River Division (TRD) and without determining the amount of water that must be retained in the Trinity River Basin for restoration and long-term protection of Trinity fish and water resources and for compliance with their endangered species obligations and protection of the federal Trinity River Wild and Scenic values [Footnote 12: USBR re-	The Proposed Action Area in the EIS includes the Trinity River, but it does not include the Klamath River as there are no CVP or SWP facilities in that region that would be operated under the coordinated long-term operation of the CVP and SWP. However, the Biological Assessment, which evaluates effects of the CVP and SWP on listed species, includes Southern Resident killer whale. For that specific analysis, the action area was expanded to include the lower Klamath River.

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	initiated consultation on September 30 2021 that re-initiation of consultation included the TRD component of the CVP. However the consultation relating to the TRD has proceeded on a separate track and is not expected to be completed by December 20 2024; rather it is expected to be completed approximately one year later by the end of 2025. Also see https://www.noaa.gov/sites/default/files/legacy/document/2020/Oct/0.7.115.14918- 000001.pdf See also the September 12 2023 USBR WIIN Act meeting agenda at https://www.sldmwa.org/OHTDocs/pdf_documents/Meetings/Committees/WR%20Committee/Prepackets/AgendaItem 7_20231002%20WRC7.MEMO.WaterPolicyUpdate.pdf]. Because the TRD is an integrated component of the CVP and due to the statutory priorities found in the 1955 Act (Public Law 84-386 69 Stat. 719 (1955)) 1984 Act (Public Law No. 98-541 98 Stat. 2721) 1992 CVPIA (Pub. L. 102-575 Title XXXIV (CVPIA)) 1996 Act (Public Law No.104-143 110 Stat. 1338 (1996)) and the 2000 Trinity River Record of Decision (2000 ROD) the amounts of water necessary for full restoration and lasting protection of Trinity resources needs to be determined prior to making any determinations about downstream water available for export to the CVP/SWP. Segregating ESA compliance for the TRD from the long-term operations plan for the CVP/SWP even temporarily makes it difficult and likely impossible to protect TRD priorities and volumes required to meet the obligations of priority contained in the TRD 1955 Act and to meet the 1984 1992 and 1996 fish statutory preservation propagation and natural restoration and hatchery improvement mandates for the Trinity River.	
71-6	2. San Joaquin River (SJR): The DEIS arbitrarily limits the CVP geographical operations analysis on the SJR to the Stanislaus River and thus fails to disclose impacts to San Joaquin River and	A portion of the water from the Stanislaus River is stored in New Melones Reservoir. Water in New Melones Reservoir may be released into the Stanislaus River. This is part of the study area

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	Friant Dam from CVP LTOP. The San Joaquin Exchange Contractors under certain drought conditions are allowed to take water from Friant Dam to be delivered via the San Joaquin River and CVP canals to their service area. The impacts of these diversions are not analyzed or disclosed in the DEIS. The impacts the DEIS also fails to analyze water quality supply and fish and wildlife impacts to the San Joaquin River and the Delta Estuary as the result of CVP/SWP operations upstream of the Stanislaus River. In 2013 NMFS designated a non-essential experimental population of CVP spring-run Chinook salmon for reintroduction to the San Joaquin River. The designation allows for the release of listed CV spring-run Chinook salmon outside their current range as an experimental population; given that the non-essential population is geographically separate from the threatened population of the same species and if lost will not significantly impact the status of that species. In addition ESA section 4(d) provides protective regulations (including ESA section 9 take exceptions) for activities performed during otherwise lawful activities within the experimental population area. Any activities that result in direct intentional take harm or activities that are illegal in nature are still subject to ESA section 9 provisions. The San Joaquin River Restoration Plan (SJRRP) Settlement Act states in section 10011(c)(3) that the reintroduction of CVP spring-run Chinook by the SJRRP will not impose more than de minimus water supply reductions additional water storage releases or bypass flows on unwilling third parties due to the reintroduction. Outside of the reintroduction area CV spring-run Chinook salmon in the San Joaquin River or its tributaries downstream to Mossdale County Park in San Joaquin County will continue to be covered by the same take prohibitions and exceptions applicable to nonexperimental populations except when potential regulatory measures to address take would affect the de minimus	because this is part of what the CVP controls. A portion of the water from the upper San Joaquin River is stored in Millerton Reservoir behind Friant Dam. The flows out of Friant Dam would not be modified as part of this NEPA process and therefore are not included in the study area for LTO. Discharge of agricultural drainage from the federal San Luis Drain to the San Joaquin River is not within the scope of this document. Reclamation has proposed no changes to Friant Dam operations within the Proposed Action. Current Friant Dam operations are the Restoration Flows described and covered per ESA Section 7 in the 2012 San Joaquin River Restoration Program's Biological Opinions. These restoration flows are considered within Appendix F, Modeling, Table F.1-2.1 of the Draft EIS.

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	conditions of the Settlement Act. Section 10011 (c) of the Settlement Act includes the Central Valley Project contractors outside of the Friant Unit and State Water Project in the definition of "third parties" and NMFS develops an annual technical memorandum to describe the accounting of any experimental non-essential CVP spring-run Chinook salmon during the operations of these facilities. That report can be found on the NMFS San Joaquin River Restoration website. Any impacts to the SJR fishery flows and water quality from CVP operations must be included and analyzed in the DEIS for the long-term operations of the CVP. Further impacts to designated critical habitat along the river corridor along with wetland areas that support the federally threatened giant garter snake (1993) need to be analyzed and disclosed. Finally discharge of agricultural drainage from the federal San Luis Drain to the SJR and slough tributaries including contaminant inputs such as Selenium that bioaccumulate in fish shore birds waterfowl and migratory birds needs to be analyzed and disclosed.[Footnote 13: Selenium water quality data at Vernalis shows that since 2011 (when splittail deformities were reported by federal scientists) dissolved selenium concentrations were below 0.5 g/L. Further water quality trends since 2011 have not appreciably changed at the Vernalis regulatory point. Given the data regarding deformities and the lack of protection from the dissolved selenium concentrations at 0.5 g/L the immediate and cumulative impacts from CVP operations sanctioned discharges to San Joaquin River and the Sacramento-San Joaquin Delta Estuary need to be analyzed and disclosed]	
71-7	II. Conclusion Thank you for the opportunity to comment. Absent withdrawing the DEIS to more accurately provide the public and decision-makers with a valid baseline USBR should complete a Supplemental EIS. Using the EXP3 Environmental	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis in the Draft EIS and comments recommending or requesting that the Draft EIS be revised or supplemented and redistributed for public review.

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	Baseline found in Appendix AB Chapter 2 of the Biological Assessment would more accurately reflect the impacts from the various alternatives. This fundamental change across the analysis of all the alternatives would further highlight how the selection of Alternative 3 would significantly improve river conditions and restore fish populations at risk of extinction. The updated modeling in the baseline would be more reflective of current conditions. The current baseline resulting from excluding the 2013-2016 and 2020-2022 drought conditions likely inflates the amount of water available for export by 20% or more.	Refer to Standard Response 3, Baseline and No Action, regarding the appropriate baseline for the purposes of evaluating alternatives pursuant to NEPA. For the 2021 LTO, the No Action Alternative (2019 ROD operations) was simulated using the latest models, including CalSim 3 and DSM2, with an extended simulation period from 1921 to 2021. All our models used in comparison of the alternatives are consistent in both climate change hydrology and simulation period. Support for Alternative 3 has been noted.
71-8	[names and email addresses redacted] [EXTERNAL] Re: Comments on Bureau of Reclamation DEIS (EIS No. 20240131) on Long_Term Operations of the CVP and SWP Attachments: PCL et. al. Cmts USBR DEIS LTOP 09.09.2024 (2).pdfThis email has been received from outside of DOI - Use caution before clicking on links opening attachments or responding. Hello There was a document formatting error in my previous transmittal. I've attached a corrected version. My apologies for our error and thank you for your time [name redacted] On Mon Sep 9 2024 at 3:59 PM [name redacted] wrote: Dear Mr. Ben Nelson: Please find the attached comments from PCL and 11 non-profit organizations regarding the Bureau of Reclamation DEIS (EIS No. 20240131) on Long-Term Operations of the CVP and SWP. Please acknowledge receipt of this email and comments. Thank you very much [name redacted] Associate Director Planning and Conservation League [address and phone numbers redacted] www.pcl.org	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.

Table 4-72. Letter No. 72

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72-1	We are writing to urge that you direct the Bureau of Reclamation ("Reclamation") to modify the Proposed Action described in the Draft Environmental Impact Statement for Long-Term Operations of the Central Valley Project and State Water Project ("Draft EIS") to eliminate "voluntary" actions that reduce available water supplies when Reclamation releases the Final EIS. Stated succinctly nothing in the Draft EIS suggests that additional operational modifications are required to ensure Reclamation complies with its obligations under the Endangered Species Act and the negative socio-economic impacts resulting from the Proposed Action in the Preferred Alternative strongly argue against its adoption in its current form.	EIS Chapter 1, Introduction, provides information on the reasons Reclamation reinitiated ESA consultation for the long-term operation of the CVP and SWP. As noted in Chapter 1, this action was directed by Executive Order 13990 issued by President Biden on January 20, 2021. As noted in EIS Chapter 3, Alternatives, Alternative 2 includes actions and approaches for the CVP and SWP identified by the state and federal fish agencies, in addition to the water supply and power generation objectives of Reclamation and DWR. Reclamation is a federal agency and follows federal rules and regulations. The proposed modifications to the long-term operation of the CVP and SWP are in part to harmonize requirements imposed on the SWP by their ITP, as appropriate. Changes to the Proposed Action resulting in effects not previously analyzed is one of the four reinitiation triggers of the ESA. Refer to Standard Response 4, Alternatives Formulation, regarding selection of the preferred alternative.
72-2	The Water Blueprint for the San Joaquin Valley is a coalition of community leaders businesses water agencies local governments and agriculture representatives working together to advance common-sense water solutions for the region. Our mission is to serve as the united voice championing water resource policies and projects to maximize accessible affordable and reliable water supplies for sustainable and productive farms and ranches healthy communities and thriving ecosystems in the San Joaquin Valley. The other signatories represented in this letter share in the Blueprint's mission to educate and advocate for those most	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.

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	impacted by the implications of the regulations that govern operations of the Central Valley Project and State Water Project.	
72-3	Reclamation states that it prepared the Draft EIS "for the 2021 Endangered Species Act Reinitiation of Section 7 Consultation on the Long-Term Operation of the Central Valley Project (CVP) and State Water Project (SWP)." Draft EIS 0-1. In turn this Endangered Species Act Reinitiation of Section 7 Consultation was initiated (1) to comply with President Joe Biden's executive order directing the Department of Interior to review all existing regulations orders guidance documents policies and any other similar agency actions (agency actions) promulgated issued or adopted between January 20 2017 and January 20 2021; and (2) to voluntarily reconcile CVP operating criteria as appropriate with operational requirements of the SWP under the California Endangered Species Act. Draft EIS 0-2. However nowhere in the Draft EIS is there a statement that operations of the CVP and SWP under the No Action Alternative [Footnote 1: The Draft EIS describes the No Action Alternative as "continued operation of the CVP and the SWP as described in the 2020 Record of Decision and subject to the 2019 Biological Opinions. [The California Department of Water Resources] would also operate the SWP consistent with the California Department of Fish and Wildlife's 2020 Incidental Take Permit for the SWP." Draft EIS 03.] are likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat. Nor could Reclamation reach such a conclusion. In 2019 when the biological opinions on which the No Action Alternative is based were issued then Regional Director of NOAA Fisheries Barry Thom and then and current Regional Director of the Fish and Wildlife Service Paul Souza described the diligent work of Reclamation to protect listed species and expressed the	Please refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding statements of general support or opposition to the project. Refer to Standard Response 2, Related Regulatory Processes, regarding related regulatory processes for a discussion of the ESA consultation process. 50 CFR section 402.16(a) outlines when reconsultation is required. It is required when discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) the amount or extent of taking specified in the incidental take statement is exceeded; (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion or written concurrence; or (4) a new species is listed or critical habitat designated that may be affected by the identified action. The reinitiation triggers include changes to the Proposed Action that would result in effects not evaluated in the biological opinion. Thus, given the anticipated proposed modifications, reinitiation of consultation is appropriate. Refer to Standard Response 4, Alternatives Formulation, regarding the rigorous process that Reclamation undertook for alternative formulation.

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	conclusion that operations of the CVP and SWP as then proposed would not jeopardize the continued existence of listed species or cause adverse modification of listed habitat. Both Directors Thom and Souza also emphasized that the 2019 Biological Opinions were based on the best scientific data available and what had been learned since prior biological opinions had been issued in 2008 and 2009.For these reasons a decision by Reclamation to modify Project operations consistent with the Proposed Action would represent a policy choice to voluntarily dedicate more CVP water to the protection restoration and enhancement of listed species. This begs the question when is enough enough? Since the early 1990s when native fish species were first listed and the Central Valley Project Improvement Act Pub. Law 102-575 was enacted the CVP has dedicated and managed millions of acre-feet to the protection restoration and enhancement of fish and wildlife through the implementation of various statutory and regulatory modifications to project operations. As a result of these policy changes the average delivery capability of the CVP has been reduced from a point in the early 1990s when the average allocation to south-of-Delta CVP irrigation contractors was 92% to a point today when the average allocation to these contractors is approximately 50%. And these reduced surface water supplies have had significant negative impacts on human health and the environment in the San Joaquin Valley. The Draft EIS acknowledges that reduced surface water deliveries from the CVP under Alternatives 2 3 and 4 "are anticipated to result in changes in Valley fever related to changes in irrigated agricultural land methylmercury production and resultant changes in bioaccumulation in fish for human consumption and public exposure to cyanotoxins due to an increase in CHABs." Draft EIS 21-5. [Footnote 2: To avoid an increase in the incidence of Valley Fever Reclamation proposes that water agencies	

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	implement Mitigation Measure AG-1 Diversify Water Portfolios. Draft EIS 21-3. But the Draft EIS does not evaluate whether this mitigation measure is realistic or feasible nor does it explain where water agencies would obtain the funding and alternative water supplies to implement this mitigation measure.] Alternatives 2 3 and 4 are also expected to result in changes to groundwater pumping groundwater-surface water interaction groundwater elevation land subsidence and groundwater quality. Draft EIS 6-19. These negative impacts resulting from Alternatives 2 3 and 4 simply cannot be justified in light of the negligible if any benefits that will be provided to listed species through implementation of the alternatives. For instance Alternative 2 and 3 are expected to have negligible benefits for Delta smelt and Alternative 4 could have adverse effects for that species. Draft EIS 12-5354. Even for species like winter run Chinook salmon Alternative 2 the preferred alternative could have only "minimal" benefits.	
72-4	Draft EIS 12-28. Alternatives 3 and 4 could in fact have adverse effects. Draft EIS 12-2829. In light of these negligible species benefits how can reduced surface water supplies with the negative impacts noted above be justified? From a scientific or biological perspective the answer is reduced surface water supplies cannot be justified.	Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, and Standard Response 4, Alternatives Formulation, regarding the purposes and need for this multipurpose project. A project of this magnitude results in tradeoffs and beneficial and adverse effects on the environment. Reclamation undertook a rigorous formulation process to develop a reasonable range of alternatives that look at different ways to meet the purpose and need.
72-5	The Draft EIS acknowledges that the economy of the San Joaquin Valley is dependent on irrigated agriculture and that action alternatives evaluated in the Draft EIS are likely to adversely affect that economy. Draft EIS 14-6 9. These impacts include reduced agricultural production increased water supply costs and reduced employment. But behind these statistics are people who live in the San Joaquin Valley and who work in	Please refer to Chapter 15, Land Use and Agricultural Resources, and Appendix R, Land Use and Agricultural Resources Technical Appendix, and Chapter 17, Environmental Justice, and Appendix T, Environmental Justice Technical Appendix, for discussion on potential impacts associated with the alternatives on disadvantaged communities. Additionally, refer to Mitigation

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	irrigated agriculture and industries that support irrigated agriculture. Indeed the Draft EIS states: "Changes in agricultural water availability resulting in changes to irrigated acreage and gross revenue in the agriculture sector have the potential to disproportionately affect minority and/or low-income populations since agricultural jobs are disproportionately held by minority and low- income individuals." Draft EIS 17-5.	Measure EJ-2 for mitigation being considered to ameliorate impacts to disadvantaged communities.
72-6	The question presented here is whether Reclamation should "voluntarily" dedicate more CVP water to the protection restoration and enhancement of listed species? This is purely a policy question. Given the negligible benefits to listed species and the negative impacts to human health and the environment the clear answer to that question is "no." Reclamation should modify the Proposed Action to eliminate "voluntary" actions that reduce available water supplies when Reclamation releases the Final EIS.	EIS Chapter 1, Introduction, provides information on the reasons Reclamation reinitiated ESA consultation for the long-term operation of the CVP and SWP. As noted in Chapter 1, this action was directed by Executive Order 13990 issued by President Biden on January 20, 2021. As noted in EIS Chapter 3, Alternatives, Alternative 2 includes actions and approaches for the CVP and SWP identified by the state and federal fish agencies, in addition to the water supply and power generation objectives of Reclamation and DWR. Reclamation is a federal agency and follows federal rules and regulations. The proposed modifications to the long-term operation of the CVP and SWP are in part to harmonize requirements imposed on the SWP by their ITP, as appropriate. Changes to the Proposed Action resulting in effects not previously analyzed is one of the four reinitiation triggers of the ESA. Refer to Standard Response 4, Alternatives Formulation, regarding selection of the preferred alternative.

Table 4-73. Letter No. 73

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73-1	Thank you for the opportunity to review and comment on the Draft CVP EIS noticed in 89 FR 144 July 26 2024.CREDA [Colorado River Energy Distributors Association] was established in 1978 and is a non-profit organization comprised of firm electric service customers of the Colorado River Storage Project (CRSP). CREDA members include tribal entities municipalities political subdivisions and state agencies and rural electric cooperatives and collectively serve over 5 million customers in the States of Arizona Colorado Nebraska Nevada New Mexico Utah and Wyoming and are federal preference power customers. Recognizing CREDA and its members are not CVP customers CREDA has participated in and commented on multiple Reclamation EIS and adaptive management processes and has a specific interest in certain aspects of the Draft CVP EIS that are similar to policy and operational issues reflected in the CRSP environmental operational and adaptive management processes.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
73-2	CREDA [Colorado River Energy Distributors Association] offers the following comments:-Similar to the authorizing language for the CRSP [Colorado River Storage Project] the CVP authorizing language includes the generation of federal hydropower as an authorized purpose. The Draft CVP EIS Preferred Alternative proposes a Governance structure that includes Reclamation and the Western Area Power Administration (WAPA) through the Sacramento River Group (SRG) but as drafted does not include the CVP Preference Power customers. CVP Preference Power customers should be represented in the Governance structure as well as other key river system adaptive management groups. Their technical expertise input and impacts are unique and cannot be represented by Reclamation WAPA or other parties.	The LTO generally identifies CVP Preference Power customers as interested parties. The Governance Structure proposed for Alternative 2B contains the flexibility to include additional entities as necessary. For example, the Draft EIS describes that the SHOT may convene relevant technical teams to support policy decisions. CVP Preference Power customers may additionally participate in the technical work groups within the Adaptive Management Plan.

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73-3	-As noted above given that hydropower generation is a CVP authorized purpose WAPA [Western Area Power Administration] should be included in the proposed Directors Group as well as the Shasta Operations Team (SHOT) representing CVP Preference Power customer interests to ensure the environmental and economic benefits of this important resource/purpose are maximized.	Reclamation appreciates WAPA's interest in the Directors Group as well as the SHOT. WAPA is participating as a federal cooperating agency regarding CVP power. A discussion of the proposed governance process for each alternative is provided in EIS Chapter 3, Alternatives. The Governance Structure proposed for Alternative 2 contains the flexibility to include additional entities as necessary. For example, the Draft EIS describes that the SHOT may convene relevant technical teams to support policy decisions. CVP Preference Power customers are generally identified as interested Parties under LTO and may additionally participate in the technical work groups within the Adaptive Management Plan. As described in the governance section of Alternative 2, WAPA is identified as a representative of the Sacramento River Group.
73-4	-Both CRSP [Colorado River Storage Project] and CVP are part of the western power grid which is experiencing significant changes for myriad reasons. The grid is expanding utility loads are growing and changing and utility resource retirements and supply chain impacts are significant challenges. Hydropower generation is one of the most reliable power sources on the grid and operational changes resulting from the Draft CVP EIS could impact the ability of the CVP Preference Power customers to meet resource adequacy requirements. Maintaining operational capability and flexibility of the CVP hydropower infrastructure is critical to grid reliability which in turn is essential to human health and safety. Resource availability as well as affordability must be considered in the impacts assessment. In the event WAPA [Western Area Power Administration] must purchase power to replace resources that are unavailable or lost due to bypass operations those costs should be non-reimbursable non-returnable and should not be borne by WAPA or WAPA's CVP Preference Power customers.	In compliance with NEPA, the EIS provides an evaluation of potential direct, indirect and cumulative impacts on power production (see Appendix U and Chapter 18, Power). Other concerns raised by the comment are addressed in Appendix Q and Chapter 14, Regional Economics. Hydropower generated by the CVP is marketed by WAPA. WAPA's purchase programs, if any, are outside the scope of this NEPA analysis and the Long-Term Operations of the CVP.

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73-5	Finally CREDA [Colorado River Energy Distributors Association] supports comments and recommendations submitted by the Northern California Power Agency (NCPA) on September 9 2024 and urges Reclamation to consider and adopt same.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.

Table 4-74. Letter No. 74

Ltr#-Cmt#	Comment	Response
74-1	September 9 2024 Dave Mooney Bureau of Reclamation Bay-Delta Office801 I Street Suite 140Sacramento CA 958142536Sent via email to sha-MPR-BDO@usbr.govComments of California Water Impact Network (CWIN) on Draft Environmental Impact Statement (DEIS) for Long-Term Operations of the Central Valley Project (CVP) and State Water Project (SWP) (EIS No. 20240131)	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
74-2	Summary This comment letter of the California Water Impact Network (CWIN) is in addition to joint comment letters to which CWIN is also a signatory which have been submitted separately. The Draft Environmental Impact Statement (DEIS) considers a range of alternatives which is a core purpose of environmental reviews. However it manifests arbitrary and capricious bias against Alternative 3 by inflating the negative impacts associated with its implementation and understating its benefits. The Bureau of Reclamation must revise the DEIS to provide an accurate assessment of likely benefits and impacts. Nonetheless even without that needed revision Alternative 3 should clearly be selected as the preferred project among all those studied. It would provide significant and measurable environmental and social benefits and appropriately prioritize positive environmental outcomes in decision making unlike the alternative identified as preferred in the DEIS (2B) or any iteration of Alternative 2. Moreover its impacts can be mitigated and the DEIS must be revised to provide a better analysis of mitigation measures. Furthermore Reclamation should not release a revised DEIS until the State Water Board produces more information about the Bay-Delta Water Quality Control Plan (Bay- Delta Plan). The Bay-Delta Plan may constrain Central Valley Project (CVP) and State Water Project (SWP) operations and make certain elements evaluated in	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis in the Draft EIS to identify potential adverse impacts and formulate effective mitigation measures and comments recommending or requesting that the Draft EIS be revised or supplemented and redistributed for public review. Refer to Standard Response 2, Related Regulatory Processes regarding how Reclamation has coordinated NEPA review with the ESA required studies and processes. Reclamation follows all applicable federal laws and regulations. Reclamation proposes to operate consistent with provisions included in the Memorandum of Understanding Advancing a Term Sheet for the Voluntary Agreements to Update and Implement the Bay-Delta Water Quality Control Plan, and Other Related Actions, dated March 29, 2022, and as further developed by the VA parties as part of the State Water Resources Control Board's ongoing process to update the Bay-Delta Water Quality Control Plan. Refer to Standard Response 10, Voluntary Agreements. As substantial changes to the Long-term Operation of the CVP

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	the DEIS more or less feasible. Because the Bay-Delta Plan update is well underway the DEIS should not rely on water quality standards adopted nearly two decades ago. Finally Reclamation must fulfill its trustee responsibilities both to tribes and the environment (the "public trust."). This requires a more robust approach to socio-economic as well as environmental analysis.	are imminent or a final agency action is implemented, Reclamation will evaluate the need for additional environmental compliance. Support for Alternative 3 is noted.
74-3	NEPA Requirements NEPA its legislative intent language and a large body of case law have established clear parameters for what constitutes an adequate environmental impact statement. NEPA's Congressional declaration of purpose reads in part "to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man." (42 US Code Section 4321). NEPA requires federal agencies to take a "hard look" at the environmental effects of their actions. [Footnote 1: 350 Montana v. Haaland 50 F.4th 1254 1265 (9th Cir. 2022).] Lead agencies must identify reasonably foreseeable effects a reasonable range of alternatives and "ensure the professional integrity including scientific integrity of the discussion and analysis in an environmental document." [Footnote 2: 42 US Code Section 4332(D).] The EIS must analyze the entire project when the actions needed to complete that project are "connected." [Footnote 3: 40 C.F.R. 1508(a)(1).] The "heart" of NEPA is the alternatives analysis which enables the EIS to provide "a clear basis for choice among options by the decision-maker and the public." [Footnote 4: 40 C.F.R. 1502.14] NEPA prohibits the use of a truncated "purpose and need" statement that curtails full assessment of the project and alternatives. [Footnote 5: City of Carmel-by-the-Sea v. United States Department of Transportation 123 F.3d 1147 1155 (9th Cir. 1997); Friends of Southeast's Future v. Morrison 153 F.3d 1059 1066 (9th Cir. 1998).] Additionally agency environmental reviews must meet the standards of the Administrative Procedures Act (APA) and cannot be "arbitrary capricious an abuse of discretion or	This comment provides background information on NEPA and case law. Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach.

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	otherwise not in accordance with law." [Footnote 6: Congressional Research Service "Judicial Review Under the Administrative Procedure Act (APA)" December 8 2020. Accessed from: https://crsreports.congress.gov/product/pdf/LSB/LSB10558 August 22 2024.] Courts have found that agency reviews that lack or omit relevant information are incomplete. [Footnote 7: See for example Ctr. For Biological Diversity v. Bernhardt 982 F.3d 723 (9th Cir. 2020] The APA does not accord agencies deference on interpretations of law even where the statute is ambiguous. Instead "Courts must exercise their independent judgment in deciding whether an agency has acted within its statutory authority as the APA requires." [Footnote 8: Ibid. p. 35] Consistent with these requirements our comments below identify further deficiencies in the DEIS that must be remedied in addition to those noted in the other letters CWIN has joined.	
74-4	The DEIS Must Incorporate the Sustainable Groundwater Management Act (SGMA) into its Analysis of Project Impacts Alternatives and Mitigation. The DEIS recognizes that the alternatives studied in the DEIS can affect groundwater resources directly or indirectly and that "changes in CVP and SWP operations may change groundwater resources" from the Trinity River through the Delta as well as areas where project water is exported. (DEIS 6-1.) Nonetheless as the DEIS notes the model used to project groundwater pumping changes does not even include SGMA California's landmark groundwater law enacted a decade ago [Footnote 9: See California Wat. Code 10720 et seq (Sustainable Groundwater Management Act)] On page 6-5 the DEIS states: "The C2VSimFG model does not directly simulate limitations to groundwater levels and pumping that may be imposed as part of SGMA. The model assumes that groundwater will be used to supplement water supply if surface water supplies are decreased in order to meet demands. Conversely if surface water supplies are	The SGMA prescribes that GSAs develop GSPs to bring medium- and high-priority basins into sustainable operation. Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium and high priority basins with overdraft conditions or 2042 for medium and high priority basins without overdraft. Each GSP that is either currently being developed or has been developed is specific to each groundwater basin/subbasin. The C2VSim groundwater model does not include specific actions for each GSP relative to parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decisions regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The C2VSim model represents effects to groundwater resources that may be more substantial than when

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	increased the C2VSimFG model will decrease groundwater pumping. The model therefore may over predict increases in groundwater pumping decreases in groundwater levels increases in loss of surface water to groundwater and subsidence. If groundwater supply is unable to be increased beyond a certain level (based on the GSP for the area) then the current demand level may not be able to be supported. "This omission is a foundational error that thwarts full and complete assessment of impacts alternatives and mitigation. It matters because the DEIS proceeds to evaluate impacts and mitigation measures based on the model's output. It is particularly problematic for Alternative 3 which would result in the largest reduction in surface water deliveries. The DEIS based on the model inaccurately assumes that these reductions would be replaced by groundwater pumping without accounting for SGMA resulting in significant additional impacts such as land subsidence and depletion of aquifer storage. (DEIS 17-3 Appendix I p. 188-202). Furthermore only through incomplete assessment of SGMA implementation can the DEIS conclude "No avoidance and minimization measures or additional mitigation measures have been identified for groundwater." (DEIS 6-19) Contrary to that untenable assumption SGMA is the minimization and mitigation measure. Effective Groundwater Sustainability Plans (GSPs) mandated under SGMA will identify and advance strategies to refill groundwater aquifers when feasible and restrict pumping to ensure aquifer levels can be maintained in California's evolving climate. As GSPs have already been completed and deficient GSPs are now identified and in the process of being revised or subject to state control there is sufficient information for a more refined analysis in the DEIS.	GSP provisions are fully enacted. The C2VSim simulations, therefore, represent maximum effects on groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives. Each of the alternatives simulated in the EIS are simulated with the same assumptions regarding SGMA. Therefore, the comparison of each alternative to the No Action Alternative is comparable to each other to determine relative changes in groundwater resources. C2VSim is the best available groundwater modeling tool given the geographic scale of the analysis and the complexity of linking to the CalSim 3 model analysis. Please refer to Standard Response 8, Trinity River Division, regarding the consideration of Trinity River operations in the EIS and future environmental review processes anticipated for the Trinity River. Also refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.
74-5	The DEIS Must Evaluate Still-Incomplete State Agency Review of Long-Term Operations of the State Water Project Including Criticism of DWR's Draft Review. The DEIS includes operation of the	Refer to Standard Response 2, Related Regulatory Processes, regarding the relationship between Reclamation's LTO EIS and DWR's LTO EIR, CEQA, and CESA. Reclamation and DWR have

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	SWP as well as the CVP in its statement of Project Purpose and Need which references the Coordinated Operations Agreement linking these state and federal projects. DEIS 2-1. This statement acknowledges the need to harmonize CVP operating criteria with "requirements for the SWP under the California Endangered Species Act" and the need to comply with other state laws and regulations including "State of California water rights permits and licenses pursuant to Section 8 of the Reclamation Act." Id. Throughout the DEIS Reclamation repeatedly relies on information supplied by the California Department of Water Resources (DWR) to inform its conclusions about impacts alternatives and mitigation involving the SWP. Despite the DEIS's heavy reliance on DWR-supplied information about SWP operation the DEIS lacks any clear or thorough assessment of the relationship between Reclamation's and DWR's reviews of long-term SWP and CVP operations. Reclamation's DEIS mentions consultation and coordination with DWR (DEIR 23-4) but issues surrounding DWR's incomplete state lead agency review of long-term joint operations appear to be overlooked. (See e.g. DEIS Chapter 12 [bibliography] .) The DEIS lacks Reclamation's independent assessment of DWR's May 2024 Draft Environmental Impact Report entitled Long-Term Operations of the State Water Project (LTO DEIR) and review of critical comments on the LTO DEIR submitted on or before July 11 2024 prior to Reclamation's release of the DEIS later that month. CWIN's July 11 2024 letter on the LTO DEIR is attached here as Exhibit 1 along with its own internal exhibits (CWIN DEIR Letter). [Footnote 10: To avoid potential confusion in referring to Exhibit 1's own exhibits which are also relevant to the DEIS this document with exhibits is referred to below as "CWIN DEIR Comments" rather than Exhibit 1]. CWIN argued that despite DWR's knowledge that oversubscription of the SWP and Delta watershed were worsening due to climate change DWR "has manipulated its project definition and artificially segmented the SWP to evade accountability at every	elected to meet their respective environmental review requirements under NEPA and CEQA independent of one another.

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	turn." Id. p. 2. For example: "Had Reclamation independently reviewed critical comments such as these in its DEIS it would have undercut many of the assumptions concerning SWP operations that Reclamation relied on in the DEIS to inform its assessment of impacts alternatives and mitigation. CWIN which found the DEIR ineffective to inform the "public trust water rights and statutory compliance" determinations of state agencies took DWR to task for "providing no context for the baseline conditions piecemealing the project relative to inter- related efforts eliminating reasonable project alternatives omitting reasonably foreseeable regulatory actions narrowing the geographic scope of analysis eliminating most of the resource analysis categories and conducting insufficient analysis of the remaining impact categories including tribal and environmental justice impacts." CWIN DEIR letter p. 1.	
74-6	The DEIS Must Evaluate the Staff Proposal in the State Water Board Supplemental Environmental Document (SED) as a Reasonably Foreseeable Effect The Bureau's preferred alternative (2b) aligns with implementation of the proposed Voluntary Agreements (Appendix E p. 67) which were analyzed in the State Water Board's September 2023 Draft (SED). [Footnote 11: State Water Resources Control Board Staff Report/Substitute Environmental Document in Support of Potential Updates to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary for the Sacramento River and its Tributaries Delta Eastside Tributaries and Delta (September 2023). See https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/staa_report.html.] Alternative 3 is somewhat similar to the unimpaired flow approach described in the State Water Board's SED. A complete and accurate understanding of these alternatives including feasibility assessment depends in large part on how the Board proceeds with updating the Bay-Delta Water Quality Control Plan (Bay-Delta Plan). Information from that update is also crucial	Refer to Standard Response 4, Alternatives Formulation, for a description of the process used to identify, evaluate, refine, and select a reasonable range of feasible alternatives to be evaluated in the LTO EIS. Refer to Standard Response 10, Voluntary Agreements, regarding the rationale for Reclamation including proposed Voluntary Agreements in the description of the Proposed Action and the State Water Resources Control Board's process. As substantial changes to the Long-term Operation of the CVP are imminent or a final agency action is implemented, Reclamation will evaluate the need for additional environmental compliance. Support for Alternative 3 is noted.

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	for an accurate assessment of impacts mitigation and chronic problems facing Delta watersheds and future project operation. The SED reflects awareness that insufficient action has been taken to protect the Delta watershed and ecosystem. It recognizes that "average regulatory minimum Delta outflows are only about 5 MAF [million acre-feet] or about a third of current average outflows and less than 20 percent of average unimpaired outflows. Existing regulatory minimum Delta outflows would not be protective of the ecosystem and without additional instream flow protections existing flows may be reduced in the future particularly with climate change and additional water development absent additional minimum instream flow requirements that ensure flows are preserved in stream when needed for the reasonable protection of fish and wildlife." (SED 1-9.) While the Board's exact timing for releasing updated review and draft Bay-Delta Plan regulatory text remains unannounced the Board has taken several actions in 2024 that demonstrate movement towards the release of additional information and a likely vote on Bay-Delta Plan adoption in 2025. These include receiving comments on the SED completing peer review for the SED's scientific basis report and holding workshops on the proposed Voluntary Agreements. [Footnote 12: See https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/comp_review.htmlaccessed August 23 2024] Given these actions occurred prior to May it is reasonable to expect additional information by the end of the calendar year. Given the importance of the Bay-Delta Plan requirements to both CVP and SWP operations it was irresponsible for the DEIS to not track the proposed regulatory approach in the SED as closely as possible and to note that the DEIS may need updates after the Board provides more detailed Bay-Delta Plan regulatory language or a revised SED. The DEIS should have included and still needs a description of the anticipated Bay- Delta Plan schedule and how	

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	the CVP and SWP operations parameters could change based on information on the unimpaired flow approach contained in the SED. To ensure it has the information needed to take the "hard look" required under NEPA Reclamation should declare its intent to not release and certify a FEIS until the Board has released more information on potential requirements within the Bay-Delta Plan. Revised analysis in the DEIS should also include review of extensive public comments submitted on the SED. CWIN's comments on the SED and those of other federal agencies EPA and the National Marine Fisheries Service include significant criticisms of the proposed Voluntary Agreements [Footnote 13: CWIN DEIR Comments/Exhibits Exh. 3] [Footnote 14: Sierra Club DEIS Comments Exhs. 2 3]. These underscore major risks unacknowledged in the DEIS with Reclamation's anticipated reliance on them in for preferred alternative (Alternative 2b) and variations of Alternative 2.	
74-7	The DEIS Must Add Additional Analysis of Environmental and Social Benefits in Alternative 3 The DEIS lacks detail and analysis of the multiple benefits of returning more water to the environment in Alternative 3. These benefits include: tribal uses recreation improved access for environmental justice communities due to fewer harmful algal blooms in the Delta and the intrinsic benefits of a healthy environment which can be measured through various techniques in the field of environmental economics. [Footnote 15: See Int J Environ Res Public Health. 2020 Apr; 17(7): 2386.] These benefits are not well defined or quantified in the DEIS. Indeed Appendix Q which provides regional economic assessment is limited to inputs and outputs from IMPLAN which is limited to changes in production and employment. Existence value and benefits to tribes and disadvantaged communities are not included.In addition from an environmental justice perspective Alternative 3 is clearly the superior alternative as it would produce	The EIS has been prepared in compliance with NEPA and evaluates potential impacts that may result from the alternatives. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS, NEPA requirements for impact determinations, and the identification and development of mitigation measures. Regarding potential impacts from cyanobacteria harmful algal blooms (CHABs), please refer to Chapter 21, Public Health and Safety, specifically in Section 21.2.3. This analysis notes that Alternatives 1, 2, and 4 would not increase the potential for public exposure to cyanotoxins in the study area and there would be no associated adverse effects. It also concludes that Alternative 3 is expected to make CHABs worse in the Delta and Suisun Marsh compared to the No Action Alternative.

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	direct benefits for tribes and disadvantaged Delta communities. While NEPA does not require project proponents to select a project with the greatest environmental and social impacts (and the fewest negative impacts) other federal policy directives lean strongly towards an environmental-justice-centered approach. These include current Executive Orders economic analysis regulations and the Central Valley Project Improvement Act itself which directs specific actions to benefit the Hoopa Valley Tribe and requires consultation with tribes on fish conditions. [Footnote 16: See Executive Orders 13985 (2021) and 14096 (2023).] [Footnote 17: See https://obamawhitehouse.archives.gov/administration/eop/ceq/initiatives/PandG and https://www.federalregister.gov/documents/2022/04/20/2022-08288/national-environmental-policy-act- implementing-regulations-revisions accessed August 23 2024.] [Footnote 18: 18 Public Law 102-575]	Because it is not known where in the Delta CHABs could potentially be made worse by implementation of Alternative 3, due to reductions in Sacramento River and San Joaquin River flows entering the Delta, it would be speculative to attempt to apply more specificity to the public health analysis regarding potential effects on environmental justice (or other) communities due to direct or indirect exposure to cyanotoxins. Not only are there multiple factors that influence the growth of cyanobacteria and production of cyanotoxins in the Delta and elsewhere, but there are also several factors that influence the potential for illness from exposure to cyanotoxins (e.g., type and amount of cyanotoxin, exposure route, concentration and duration of exposure, individual susceptibility to potential adverse reactions to exposure). Further, there is a lack of comprehensive, routine monitoring for CHABs in the Delta. Without this, it is difficult to fully anticipate when and where blooms will occur, predict what populations may be exposed and how, or predict exposure levels. As discussed in Appendix T, Alternative 3 would have potentially disproportionately high and adverse impacts on minority and low-income populations from the loss off agricultural and other jobs, reduced access to groundwater, and potential property damage from subsidence in the Sacramento Valley and San Joaquin Valley Regions (see Table T-13). As explained in the introduction to the responses to comments, the analysis in this EIS relies on the CEQ NEPA regulations that took effect on May 20, 2022. However, the analysis in the DEIS was conducted to be consistent with the intent of the new implementing regulations that took effect in July 2024 as they relate to environmental justice.

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74-8	The DEIS Must Revise Inflated Cost Estimates Another way the DEIS overstates the impacts associated with Alternative 3 is through assumptions about the quantity and the cost of replacement urban supplies. As with groundwater for agricultural production Reclamation's economic analysis assumes that reduced CVP deliveries to urban areas would be fully replaced with alternative supplies. (Appendix Q pp. 31-39). However this assumption is unfounded and contradicted by data showing that urban demand has decreased considerably over the past two decades. [Footnote 19: See https://pacinst.org/wp-content/uploads/2020/06/PI_Water_Use_Trends_June_2020.pdf accessed August 23 2024.] Moreover increasing urban conservation remains a state policy priority with the State Water Board having adopted regulations for long-term conservation on July 3 2024 [Footnote 20: See https://www.waterboards.ca.gov/press_room/press_releases/2024/pr20240703-swrcb-conservation-reg.pdf accessed August 23 2024]. Reclamation should revise the DEIS to account for the likelihood that reductions in CVP (and SWP) deliveries would be met by conservation ahead of costly supply investments. In addition the revised DEIS should note the opportunity for federal subsidies for conservation projects provided by funding from the Infrastructure Investment and Jobs Act and the Inflation Reduction Act. Reclamation recently announced funding for water conservation projects throughout California [Footnote 21: See: https://www.usbr.gov/watersmart/weeg/docs/2024/FY24_Project_Descriptions.pdf accessed August 21 2024]	Refer to Standard Response 4, Alternatives Formulation, regarding how technical and economic feasibility factors were considered during the initial development of alternatives and how the same seasonal water operations and conservation measures were included in each alternative analyzed in the LTO EIS. In CWEST, 2040 urban demands from the Urban Water Management Plans reflect planned levels of conservation up to that time. Reduced urban water deliveries are not "fully replaced with alternative supplies." Some of the reduction results in increased drought shortage that is essentially conservation in drought conditions. In CWEST, fixed yield supplies are just management actions that have the same cost and amount of supply every year regardless of hydrologic conditions. Permanent conservation can be used as a type of fixed yield supply in the model.
74-9	The DEIS Must Include Analysis of the Reasonably Foreseeable Effects of Governance Decisions. As the DEIS notes the governance of the CVP is complex with multiple scientific technical and policy groups weighing in on decisions related to reservoir storage and releases monitoring and "adaptive" decisions such as whether to	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis in the EIS to identify potential adverse impacts and to formulate effective mitigation measures.

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	seek TUCPs and install physical barriers during droughts. Moreover as this is an operations plan governance decisions are of paramount importance to environmental outcomes. While all the alternatives maintain five agencies (DWR DFW USBR USFWS NOAA) as the principal decision makers there are significant differences in participation dispute resolution and final decisions. Under the Bureau's preferred alternative contractor representatives can serve on operations management teams and final operational decisions rest with the Bureau and DWR. By contrast under Alternative 3 management team participation is limited to higher level governments (Native American federal and state) and final operational decisions rest with the fisheries agencies (NMFS USFWS and CDFW). (DEIS Appendix E p. 169).A comprehensive assessment would describe how the governance structures would impact the environment. It would give readers examples of how disputes were resolved in the past and the relationship between those decisions and environmental outcomes. This transparency is essential to a full analysis of mitigation measures. The science on fish mortality due to low flows and high temperatures is well established which is why even the Bureau's preferred alternative contemplates pulse flows and other measures to prevent mass casualty events. Nevertheless additional mitigation measures such as the prohibition on TUCPs (Alternative 3) and a "fish-priority" approach to releases from Lake Shasta would be more likely under a governance framework that excludes contractors and places final decisions with the fisheries agencies.	Decisions by governance groups for this multipurpose project are not reasonably foreseeable at this time. Reclamation will determine the need for additional environmental compliance as decisions from governance groups are contemplated.
74-10	The DEIS Must Include Additional Mitigation Measures and Analysis In the mitigation measures appendix (Appendix D) the DEIS states that there are no mitigation measures for multiple categories of impacts. The DEIS fails however to include other potential mitigation measures within and outside its direct authority. For example land conversion from agricultural	The EIS has been prepared in compliance with NEPA and evaluates the range of potential impacts that may result from the proposed action and the action alternatives. In following the CEQ guidance on the formulation of mitigation, Reclamation necessarily and appropriately relied on the professional resource area authors' expertise in and experience with

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	production to solar energy which is already occurring could be accelerated as a way to mitigate income losses to farmers. Grants from the Inflation Reduction Act (IRA) could also serve as mitigation measures and the DEIS should describe how IRA funds within its purview could be allocated to mitigate impacts from reduced agricultural production. Additionally the exclusion of TUCPs as an operational measure in Alternative 3 (and one scenario within Alternative 2) is itself a mitigation measure directly within the Bureau's control. Another viable mitigation measure would be the Bureau's withdrawal from the Voluntary Agreements which as documented in the State Water Board's Supplemental Environmental Document have a much lower likelihood of protecting and restoring fish populations than an unimpaired flow requirement of 55 percent or greater. Mitigation measures outside of the Bureau's direct authority but nevertheless relevant to the DEIS include: SGMA enforcement additional urban conservation reduced deliveries to senior water rights holders (e.g. settlement and exchange contractors) that cannot substantiate their water rights and vocational training for farmworkers seeking alternative employment. There is sufficient information about existing programs and actions for each of these measures to warrant inclusion in the DEIS [Footnote 22: See references to SGMA enforcement and urban water conservation regulations discussed elsewhere in this comment letter. For review of senior water rights claims the Bureau should refer to California law passed in 2023 https://sd24.senate.ca.gov/news/press-release/governor-signs-senator-allens-legislation-strengthening-californias-antiquated accessed August 23 2024]	assessing mitigation needs and developing mitigation measures. Reclamation also drew on expertise outside the agency to help identify and develop mitigation. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS and discussion of mitigation measures. Please also refer to Chapters 4–22 regarding the analysis of potential impacts for each environmental resource topic evaluated by the EIS and applicable mitigation measures. Refer to Standard Response 10, Voluntary Agreements, for general concern about voluntary agreements. The Sustainable Groundwater Management Act is enforced by the State of California, which provides independent regulatory oversight.
74-11	The DEIS Must Include a Discussion of the Federal Government's Trustee Duties Although the state is the trustee of its waters the federal government has trustee responsibilities that must be analyzed within the DEIS. First and foremost the federal	Reclamation recognizes that salmon are considered important to Tribes in the Central Valley, however, the Central Valley Tribes do not have salmon fishing rights, nor a designated ITA for salmon, and therefore, salmon as an ITA are not analyzed for

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	government's trustee responsibilities for Native American tribes (tribes) extends to the environmental conditions that support tribes' well-being. As described in law and court decisions the federal government has inviolable responsibilities to project tribal treaty rights and tribal lands [Footnote 23: See https://www.bia.gov/faqs/what-federal-indian-trust-responsibility accessed August 23 2024.] Since the CVP operation affects multiple tribes from the Trinity River watershed down through the San Joaquin River watershed the DEIS must provide an assessment of impacts to tribes and discussion of how the Bureau is fulfilling its trustee duties. The DEIS' tribal chapter however makes the bizarre and unsubstantiated claim that "There are no ITAs in the rivers in the Central Valley that would be affected by the project." (DEIS 7-1). This claim is bizarre since the DEIS acknowledges that salmon fisheries are Indian Trust Assets (ITAs) in the Trinity River begging the question of whether Reclamation considers Central Valley salmon fisheries (or Central Valley tribes) of lesser importance. Furthermore it is unsubstantiated and easily refuted as multiple Central Valley tribes' traditions are linked to salmon and all of the rivers in the Central Valley flow into the Delta.A further deficiency is that the DEIS does not identify any mitigation measures for impacts to ITAs. (Appendix J pp. 12-14). This finding is lazy and unacceptable. A prominent example is the suite of federal government actions to establish more cooperative and co-management approaches with tribes through MOUs [Footnote 24: See https://apnews.com/article/white-house-tribal-summit-partnership-public-lands-33039cb25459be5f64c9665e2fa47d93 accessed August 27 2024] Additionally as noted earlier another obvious mitigation measure would be for Reclamation to withdraw from the Voluntary Agreements which deliberately excluded tribes and are the subject of a current Civil Rights Act Title VI complaint with USEPA. Moreover the Bureau could advance tribal inclusion through bringing interested tribal governments into the CVP	any tribes other than those affected by the operations on the Trinity River. Please refer to Standard Response 8, Trinity River Division, regarding the consideration of Trinity River operations in the EIS and future environmental review processes anticipated for the Trinity River. There may be Indian Trust Assets (ITAs) located within the vicinity shared by the commenter, which is north of the Delta, but those ITAs are not impacted by the alternatives. The impacts to ITAs under the project alternatives are similar to those under the No Action Alternative, and therefore mitigation has not been identified. Although mitigation has not been identified for ITAs, Appendix D, Mitigation Measures, does include an additional mitigation measure, Mitigation Measure EJ-3: Increasing Participation with Trinity River Parties. Please refer to Standard Response 10, Voluntary Agreements regarding general concern about voluntary agreements.

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	governance process. Reclamation must revise the DEIS to identify and describe meaningful mitigation measures to fulfill its duty to protect tribal assets. In addition in adopting NEPA Congress recognized the government's trustee role. In the Congressional declaration of national environmental policy NEPA states "it is the continuing responsibility of the federal government to fulfill the responsibilities of each generation as trustee of the environment for succeeding generations." [Footnote 25: See https://apnews.com/article/white-house-tribal-summit-partnership-public-lands-33039cb25459be5f64c9665e2fa47d93 accessed August 27 2024] This trusteeship concept must be included more directly within the DEIS. Moreover due to the history and legal obligations of the CVP (e.g. the requirements within the CVPIA) the Bureau has an important role in supporting the state to fulfill its public trust responsibilities. In particular the State Water Board would benefit from additional socio- economic analysis to aid its evaluation of tradeoffs between the public trust and other societal goals. As the largest water delivery system in the state the CVP's operation plays an important role in determining which interests are prioritized. Alternative 3 provides valuable information about how a different operational framework could improve public trust resources however as documented elsewhere the DEIS overstates the magnitude of potential economic impacts associated with a higher level of public trust protection. These deficiencies must be corrected in the DEIS both for NEPA compliance and for a complete public trust analysis.	
74-12	The DEIS Erroneously Includes the Delta Conveyance Project and Sites Reservoir Project in the Preferred Alternative Disregarding Formidable Barriers and Impacts. Among the worst deficiencies in the DEIS is Reclamation's baseless reliance in its preferred alternative (2b) and variants of Alternative 2 on two of the state's most controversial and environmentally risky infrastructure projects	Alternative 2 includes DCP and Sites programmatically for analysis consistent with NEPA, and the proposed action submitted for consultation includes these two projects as a mixed programmatic component. The programmatic component is severable if litigation or other factors preclude these projects from implementation. As these projects get

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	presently undergoing both litigation and review of water rights change petitions at the State Board the Delta Conveyance Project (DCP) and Sites Reservoir Project (Sites).After receiving almost no discussion in the text of the DEIS (3-59) Reclamation fails to provide any quantitative assessment or meaningful independent analysis of the feasibility or environmental consequences of these heavily disputed project components. Instead Reclamation provides an evasive "framework" repackaging agency talking points as a mislabeled "programmatic" analysis (DEIS Appendix E-138- 148). It also provides evasive "qualitative" discussion in Appendices for these Projects (respectively Appendix Z for the DCP and Appendix AA for Sites) which simply continues the DEIS's uncritical repetition of the state lead agencies' one-sided perspectives on these contested projects. The DEIS did not engage any of the major criticisms raised by CWIN and others in related environmental review comments litigation and pending water rights protests on the DCP and Sites projects. The evasion in the DEIS for long-term operation is particularly glaring in light of the fact that the Army Corps of Engineers--in its March 16 2023 DCP Draft EIS which still awaits final completion--focused on construction impacts and expressly avoided analysis of project operations. That avoidance drew pointed criticism in. comments from the EPA as well as from CWIN and other critics of the DCP.As a precaution to avoid any mistaken inference of waiver on any of these disputed matters CWIN is also concurrently furnishing to Reclamation under separate cover the comments petitions and complaints it has submitted to agency decision-makers on the DCP and Sites projects. The formidable barriers to feasibility and still-unaddressed significant impacts of these projects noted therein include but also go beyond impacts to listed species and also involve segmentation serial avoidance of operational analysis and other defects that likewise undermine NEPA compliance. All such barriers to feasibility and unaddressed or understated impacts	closer to implementation, Reclamation will evaluate the need for additional environmental compliance.

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	must be engaged with specificity in any revised DEIS addressing long-term operations. The DEIS failed to provide timely analysis of the cumulative impacts of the DCP and Sites projects on the listed species or their habitat in violation of NEPA [Footnote 26: See 40 C.F.R. 1502.16(a); 1501.3(d)(2)(vi) ("Agencies shall analyze the intensity of effects considering the degree to which the action may adversely affect an endangered or threatened species or its habitat including habitat that has been determined to be critical under the Endangered Species Act of 1973").]. Moreover as discussed in the joint comments of Sierra Club et al. joined by CWIN the incomplete assessment in Appendix Z by virtue of what it avoids belies the conclusion that the DEIS has lawfully accounted for the environmental consequences of the DCP. If left uncorrected this would circumvent full assessment of DCP-associated impacts in the matter NEPA requires. Sierra Club et al. comments on DEIS p. 47.The DEIS contains no analysis of other major barriers legal and financial to the DCP becoming reliably available. In 2024 alone DWR has 1) lost a court ruling in which DWR unsuccessfully sought to validate the conveyance-specific "Delta Program" bond resolutions that were meant to finance the DCP which were found to exceed DWR's delegated authority; (2) lost a preliminary injunction motion that prevents DWR's planned geotechnical activities for the DCP from being implemented due to DWR's failure to follow the certification of consistency procedure required under the 2009 Delta Reform Act; (3) elicited more than three dozen protests to its pending petition in the State Board to change points of diversion for the DCP; and (4) faced major criticisms relating to the deficient assessment of costs and benefits for the DCP which even in DWR's estimation exceeds $20 billion. [Footnote 27: See https://mavensnotebook.com/2024/06/26/press-release-new-report-exposes-inaccuracies-in-benefit- cost-analysis-of-californias-delta-conveyance-project/]Lastly the DEIS includes an assumption about the consequences of the DCP for water rights	

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	that is demonstrably false. It makes the blanket assertion that the DCP "would not alter SWP/CVP water rights permits (beyond the addition of new points of diversions)." DEIS Appendix Z-5 (emphasis added). On the contrary DWR has sought to do precisely that in its DCP change petition proceeding pending at the State Board. On August 22 2024 DWR requested that the State Board as a "component" of its pending DCP application alter the long-expired construction deadline in its water rights permits to include a 55-year extension from 2000 to 2055. CWIN's joint and separate letters to the State Board opposing that request are attached here as Exhibits 2 and 3 respectively. These letters describe the relationship of that request to DWR's long- unresolved problems with reliance on expired water rights. They note the further problem for the DCP also the subject of pending litigation that DWR's operative deadline for completion of beneficial uses in its water rights permits expired in 2009.As also explained in CWIN's DEIR Comments (pp. 7-9) pending Fresno Superior Court complaint (id. Exh. 5) and pending water rights protest in the State Board DCP proceeding (id. Exh. 6) these problems with further alterations in DWR's expired rights are not a matter of idle or academic concern. In long-unresolved protests CWIN and others opposed granting DWR further extension in these expired rights on numerous grounds including: (1) DWR's failure to exercise required due diligence (Wat. Code 1395 1396 1397; 23 CCR 840 844.); (2) adverse effects on the Delta and other water rights (Wat. Code 12200-12205); (3) failure to explain how much water can be put to a beneficial use; (4) failure to clarify maximum diversions; (5) DWR's own actions impeding timely beneficial use (Cal. Code Regs. tit. 23 840 844); and (6) harm to the public trust and public interest. (Wat. Code 1243; 1243.5.) (Id. Exh. 6 p. 5.)Far from having no role in the DCP State Board proceeding as the DEIS suggests water rights issues are central. CWIN and other protestants argue that problems with DWR's now-expired time for construction and beneficial use	

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	leave the Board unable to determine that what DWR proposes will not "injure any other legal user of water." (23 CCR 791(a).) Due to DWR's long-acknowledged failure to meet the last approved deadlines and the Board's inaction following protests to DWR's last-filed petition to extend DWR's water rights permits have a formidable "cold storage" problem also raised in the pending litigation. Enabling DWR to keep its permitted water rights in such "cold storage" is not only unlawful but harmful to the public trust and the public interest. (See California Trout Inc. v. State Water Resources Control Board (1989) 207 Cal.App.3d 585 618.)	
74-13	Conclusion For the reasons described above Reclamation must revise the DEIS and circulate the revised draft for further public comment before releasing a Final EIS. Moreover to ensure the integrity of the discussion and analysis Reclamation should wait for the State Water Board to release additional information about the Bay-Delta Plan before finalizing the EIS.	Reclamation believes the Draft EIS is adequate. The Bay-Delta Plan amendment process does not require Reclamation to delay finalization of the Final EIS. Reclamation will evaluate the need for additional or modified environmental compliance once the State Water Board completes is WQCP amendment process.
74-14	Respectfully submitted [name redacted] President and Executive Director California Water Impact Network [name redacted[Secretary California Water Impact Network From: [name and email address redacted] Sent: Monday September 9 2024 4:59 PMTo: BDO Comments BOR MPR Subject: [EXTERNAL] CWIN Comments on DEIR fr CVP long term operations Attachments: CWIN Comments on LTO DEIS 9-9-2024.pdf; EXH 1 [CWIN LTO DEIS commentsexhibits].pdf; Exh 2 to CWIN comments.pdf; Exh. 3 to CWIN Comments.pdfThis email has been received from outside of DOI - Use caution before clicking on links opening attachments or responding. Please see the attached comments and three exhibits from the California Water Impact Network Respectfully [name, address, phone number, and email address redacted] ATTACHMENT 1:[See original comment for Exhibit 1]Att 1 of Att 1[See original comment for NGO letter RE Written Comments on DWR'S Draft EIR...]Att 2 of Att 1 [See original comment for Sierra	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text. In addition, the commenter provided attachments for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.

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	Club CA et al letter RE Supplemental Written comments…]Att 3 of Att 1: [See original comment for California Water Impact Network letter RE comment Letter- Sacramento/ Delta Draft Staff Report]Att 4 of Att 4 [See original comment for San Francisco Division of Water Rights letter RE comment letter - Sacramento/ Delta Draft Staff Report]Att 1 of Att 1 of Att 4 of Att 1[See original comment for EPA comments on the Sep 28 2023 Draft Staff Report]Att 5 of Att 1 [See original comment for Complaint for Declatory Relief and Petition for Writ of Traditional Mandamus]Att 1 of Att 5 of Att 1[See original comment for petition for extension of time]Att 1 of Att 1 of Att 5 of Att 1: [See original comment for description of proposed changes and environmental documents] Att 1 of Att 2 of Att 5 of Att 1:[See original comment for California Sportfishing Protection Alliance signed petition of protest]Att 2 of Att 2 of Att 5 of Att 1:[See original comment for SWDA et al Protest Application]Att 3 of Att 5 of Att 1:[See original comment for Department of Natural Resources letter RE response to California Sportfishing…Petition for Extension of Time]Att 4 of Att 5 of Att 1 [See original comment for Division of Water Rights letter RE Time Extension Petitions]Att 5 of Att 5 of Att 1 [See original comment for map of legal delta boundary]*Att 6 of Att 5 of Att 1 [See orginal comment for Map of DCP Intake Zones]Att 7 of Att 5 of Att 1 [See original comment for California Water Impact Network et al letter RE unresolved protests of California Department of Water Resources' Petitions for Extension of Time…]Att 1 of Att 7 of Att 5 of Att 1:[See original comment for California Water Impact Network et al letter RE California Department of Water Resources' Petition for Extension of Time…]Att 2 of Att 7 of Att 5 of Att 1 [See original comment for California Water Impact Network et al letter RE CDWA Petition for Extension of Time]Att 6 of Att 1 [See original comment for CWIN protest - petition requesting changes in water rights of the department of water resources…]ATTACHMENT 2:[See original comment for Joint Objection to Purported Minor Change	

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	to Department of Water Resources' Petitions for Change of Water Right Permits 16478 16479 16481 and 16482 (Applications 5630 14443 14445A and 17512 respectively)]Att 1 of Att 2: [See original comment for 8/22 memorandum to Dept. of Water Resources Petitions for Change]Att 2 of Att 2: [See original comment for Withdrawal of Petitions for Water Rights Extension of Time...]Att 3 of Att 2: [See original comment for State Water Board's Minor Change Request webpage]Att 4 of Att 2: [See original comment for map of legal Delta boundary]ATTACHMENT 3:[See original comment for letter dated September 3 2024]	

Table 4-75. Letter No. 75

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75-1	Refined Hourly Post-Process of LT-Gen for Emissions Calculations [Western Area Power Administration] supports the inclusion of a Refined Hourly Post-Process of LT-Gen to enable the calculation of emissions that accounts for the timing of generation (both time of day and season). This potential methodology is referenced in section M.3 Potential Refined Methodology of Appendix M (Greenhouse Gas Emissions Technical Appendix). This method should be applied to both greenhouse gas emissions and other criteria pollutants affecting air quality. Currently the grid-specific information has not been compiled or reviewed by appropriate subject matter experts and therefore is not being utilized at this time. This method will not only enhance this analysis but also improve future evaluations helping to identify optimal policies for the long-term operations of the CVP. WAPA has worked with the National Renewable Energy Laboratory to generate a scope that would enable subject matter experts to compile such information and review its application into a Refined Hourly Post-Process of LT-Gen methodology to calculate differences between alternatives in their impacts to emissions. Funding has not yet been secured for this effort.	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, for a discussion of the adequacy of the analysis in the Draft EIS. Refer to Appendix M, Greenhouse Gas Emissions Technical Appendix for where Reclamation included the potential refined methodology related to emissions post processing methodology that evaluated CO2. Reclamation continues to coordinate with WAPA on the research efforts to generate accurate grid emission profiles for both CO2 and other constituents. Reclamation is nearing finalization of the emissions offsetting model by including SWP operations. Once the model has been completed, it may become a candidate for replacement of the methodology currently used to evaluate impacts in the EIS. Reclamation currently only has access to CO2 grid emission profiles provided by WAPA sourced from CAISO. Those emissions profiles can be used by the model to generate a more accurate CO2 emissions offset. The results of those model runs can use the same scaler relationships between CO2 and other emission constituents that the current model used in the EIS. More accurate constituent modeling would require similar emissions profiles to those WAPA provided for CO2. Reclamation supports WAPAs efforts for obtaining those profiles.
75-2	Suggested Changes to Emissions Single Factors Until the Refined Hourly Post-Process of LT-Gen methodology becomes available we continue to recommend that the analysis consider emissions of a marginal gas-fired power plant that would be dispatched to replace the generation lost from any decreases in net hydro generation. Compared with using the average emissions factor of the whole fleet of power plants the marginal emissions factor	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis and reliable information. Reclamation's Emission Footprint Methodology, currently in development, accounts for marginal emissions. Reclamation intends to continue to develop the Emission Footprint

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	provides a more accurate assumption. It recognizes that all non-emitting resources are already operated to the full extent possible since they have no fuel costs and that the marginal response to a decrease in net hydro production is to increase the next resource that is available. This is typically a gas-fired combined cycle power plant.	Methodology for potential use in future analyses. An example of this methodology was used in the Draft EIS. See Appendix M, Greenhouse Gas Emissions, Section M.3.3, Refined Methodology.
75-3	We also continue to recommend that the GHG analysis consider the upstream leakage of methane associated with collecting treating compressing transporting storing and distributing methane from wells to power plants hundreds of miles away on average and that it includes any unburned methane in power plant exhaust. Research by Howarth et al. (2022) has found leakage rates of methane from well through combustion to be in the order of 9% in the Southwestern US where California power plants compete for the supply of gas (see Attachment D). Recognizing the leakage and its impacts is important since it can have global warming impacts as large or larger than the combustion impacts that are normally accounted for.	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis and the use of reliable data. Reclamation will consider including emissions from methane leakage in future required environmental compliance.
75-4	The emissions factors in Table M.3 reflect the average grid emissions rates. Should the single emissions factors in Table M.3 reflect the marginal emissions as discussed in WAPA's cooperating agency EIS comments Appendix D? Should the upstream emissions also be used as described in WAPA's cooperating agency EIS comments Appendix D?	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis and the use of reliable data. Reclamation intends to continue to develop the Emission Footprint Methodology for potential use in future required environmental compliance.
75-5	Monthly Uniform Releases Assumption Dr. Yash Amonkar at the University of North Carolina Chapel Hill has conducted a preliminary monthly uniform release assumption bias analysis. This analysis is entitled Monthly Uniform Release Assumption Preliminary Bias Analysis and is attached as a presentation and Jupyter Notebook. The analysis found that reservoir models on a monthly timestep can overestimate power generation by	The modeling assumptions and results for the CalSim 3 modeling analysis are included in Appendix F, Modeling. As indicated in this appendix, CalSim is a comparative planning model used to inform the potential effects of CVP and SWP operations changes for the alternatives addressed in the EIS. The CalSim model and the methodology identified in Appendix F is the best available approach for estimating the potential

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	underestimating spill due to model bias from using a monthly uniform release assumption. The preliminary analysis quantified the bias at various reservoirs in the SWP and CVP using historical data. The analysis indicates significant expected error in the calculation of flows through the penstocks as a result of the monthly uniform release assumption bias. During the calendar months December through April this flow is expected to be significantly overestimated as shown in the table below for Shasta. Does CalSim use a monthly uniform release assumption? If so is there anything being done to correct the issue of expected overestimation bias in flows through the penstocks? This overestimation bias would be expected to vary between alternatives as it would be a function of reservoir operations and other factors.[See original comment for table: Penstock flow overestimation in % for Shasta by month & water year type WY 1997-2023]	impacts of operational changes on the quality of the human environment. Please refer to Standard Response 6, Hydrologic Modeling and Surface Water Resources, regarding the appropriate use of modeling.
75-6	Refined Hourly Post-Process of LT-Gen for Hydropower Economics The Refined Hourly Post-Process of LT-Gen described in section M.3 of Appendix M should be applied to Hydropower Economics with available Locational Marginal Price data. WAPA is working with the National Renewable Energy Laboratory to develop the appropriate pricing information. Funding has not yet been secured for this effort.	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis and the use of reliable data. Reclamation's Emission Footprint Methodology, currently in development, accounts for marginal emissions. Reclamation intends to continue to develop the Emission Footprint Methodology for potential use in future analyses.
75-7	Emissions trade-offs between Project Use and Groundwater Pumping Base Resource is reduced by an increase in Project Use. The increase in Project Use is assumed to reduce groundwater pumping and its corresponding emissions. CVP power customers consider accurate accounting of groundwater pumping emissions to be a vital factor in weighing the trade-off between reductions in Base Resource and the increases in Project Use in the impact analysis of the EIS. If the projected benefits from groundwater pumping emissions reduction associated with an increase in	Table L-8 in Appendix L, Air Quality Technical Appendix, provides a summary of the relative potential increase or decrease of fossil fuels emissions from changes in groundwater pumping related to implementing the range of EIS alternatives. These analyses are intended to provide information about the relative magnitude of emissions changes compared to the No Acton Alternative and generally indicated that emissions changes would be small and not likely to result in adverse air quality effect. Additional detail or accuracy is not needed to

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	Project Use is overstated it will negate an accurate assessment of the corresponding reduction in Base Resource and the associated potential increase in emissions impacts. Changes to Project Use must be fairly weighed with corresponding changes to Base Resource. Thus an accurate assessment of emissions related to groundwater pumping is critical.	reach these conclusions.
75-8	Is the State Groundwater Management Act (SGMA) being considered in assumptions leading to the calculation of net emissions (specifically emissions related to volume of groundwater pumping between alternatives)?	The C2VSim model does not simulate local groundwater pumping limitations that may be in place per GSPs and SGMA. The groundwater pumping emissions estimate is based on the groundwater modeling and is limited by the available data on how agricultural users could respond to changes in water availability and cost.
75-9	Are the assumptions leading to the calculation of emissions related groundwater pumping reasonable specifically key assumptions #1 and #2 in Attachment C provided by WAPA [Western Area Power Administration] in the Second Cooperating Agency Comments of this EIS?	The groundwater pumping emissions estimate is based on the groundwater modeling and is limited by the available data on how agricultural users could respond to changes in water availability and cost.
75-10	Can the emissions related to groundwater pumping term be considered separately in the net emissions calculation due to high levels of uncertainty?	Emissions from net generation and from groundwater pumping are considered separately. Emissions from net generation are shown in Appendix L, Air Quality Technical Appendix, Table L-4; emissions from groundwater pumping are shown in Appendix L, Table L-6; and net emissions are shown in Appendix L, Table L-7.
75-11	Emissions Calculation for Groundwater Pumping Should the emissions factor related to groundwater pumping be reduced due to factors described in Attachment C key assumption #3? Can the Average CAISO Emissions Data be used in conjunction with a refined methodology analogous to section M.3 to calculate a new emissions factors related to groundwater pumping?	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis and the use of reliable data.
75-12	Trinity and other considerations Alternative 2 provides the ability to flexibly manage the CVP through a Multi-Agency Consensus to	All of the alternatives evaluated in the Draft EIS include the continued implementation of the 2000 Trinity River flows. Please

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	meet environmental and water supply constraints on the Sacramento River. Shasta Reservoir and a portion of Trinity Reservoir (via the diversion to the Sacramento) operate in parallel to meet goals and objectives on the Sacramento River. The parallel operations creates a need to combine the analysis and include both basins in the EIS. The parallel operations also creates innumerable potential solutions increasing the need to evaluate through exploratory modeling more viable sets of solutions that ensure hydropower generation is considered when weighing potential multiple solutions for water supply and environmental constraints with varying effects to hydropower. It would also require a look at the bookends (extreme possibilities) that Alternative 2 could bring (given the ambiguity in operations due to operator discretion). WAPA has provided Alternative 5 Low Emissions with Flexible Management (provided during the first Cooperating Agency Draft EIS) as an example of such exploratory modeling.	refer to Standard Response 8, Trinity River, regarding the steps for future proposed modifications to Trinity River Division Operations, including alternatives submitted for that effort.
75-13	Are there any assumed changes to the Trinity Diversion within any of the modeled alternatives?	Under all alternatives in the LTO EIS, the Trinity River operations follow the 2000 Trinity ROD. Any potential observed changes to the Trinity River are due to the dynamic system operation. Assumptions are consistent throughout; however, different system operations result in differing outputs.
75-14	Can there be modeled changes to Shasta operations and assumed no changes to Trinity operations (given both reservoirs operate in parallel and meet environmental and supply objectives on the Sacramento River)?	The Trinity River Division is part of the CVP. Refer to Standard Response 8, Trinity River, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives.
75-15	Given the flexibility and operator discretion of alternative 2 is a full and reasonable range of potential operational outcomes and effects considered in alternative 2?	Yes. Under Alternative 2, an Adaptive Management Program is included that will allow for modification of actions within the effects analyzed in this document. If modifications to the selected alternative have the potential to result in effects not analyzed in the EIS, Reclamation will evaluate the need for additional or modified environmental compliance

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		documentation.
75-16	Trinity reservoir storage/hydrology contribute to the water temperature flow conditions spawning habitat availability and predation stressors of species on the Sacramento. The operations of the Trinity Reservoir and Trinity River Diversions should be considered in the Bin Framework. The balance of storage between Shasta and Trinity Reservoirs is used to determine the operation of each and should be more explicit in the bin structure in both the modeling and actual operations.	The Trinity River Division is part of the CVP. Refer to Standard Response 8, Trinity River, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives.
75-17	The drought tool kit should include explicit rule sets as it relates to Trinity River and Trinity Diversions when balancing reservoirs within the CVP and SWP system including but not limited to the separate accounting of water within Trinity Reservoir to be held for the purpose of the Trinity and Sacramento Rivers and ensuring a long-term 50/50 split of Trinity Reservoir inflow between the two river basins as described in Alternative 5 provided during the first Cooperating Agency Draft EIS.	Refer to Standard Response 8, Trinity River, regarding the Trinity River. The cyclical nature of California hydrology and the resulting effect on federally listed species warrants special consideration for operation during droughts. Although each drought is unique, contingency planning can facilitate an adequate response. California experiences variable climate, and periods of droughts are a recurring feature. Water stored in CVP and SWP reservoirs and groundwater basins mitigate droughts. Multi-year droughts occur when two or more successive years are dry, and reservoirs and groundwater reserves are depleted. The Drought Toolkit in general is a common component to the LTO of the CVP. Within 18 months of executing a Record of Decision, Reclamation would coordinate with DWR to develop a drought toolkit, Reclamation in coordination with DWR would develope a Drought and Dry Year Planning Tool Kit which focuses on actions to implement as intervention measures during hydrologic years with drought and dry conditions. The Drought Toolkit includes actions that can either mitigate or avoid impacts throughout the Central Valley.

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		The drought toolkit recognizes that difficult trade-offs must be made to respond to year-specific conditions because decisions impact different resources. Where the tradeoffs have been fully developed and can be committed to, they are incorporated into the Proposed Action. The Drought Toolkit in general is a common component to the LTO of the CVP. Reclamation would meet and confer with the USFWS, NMFS, DWR, CDFW, and Sacramento River Settlement Contractors on voluntary measures to be considered for implementation if drought conditions continue into the following year, including measures that may be beyond Reclamation and DWR's discretion. If dry conditions continue, Reclamation would regularly meet with this group (and potentially other agencies and organizations) to evaluate current hydrologic conditions and the potential for continued dry conditions that may necessitate the need for development of a drought contingency plan (that may include actions from the toolkit) for the water year.
75-18	Does the EIS and DWR's Delivery Capability report have the same Baseline? Should the No Action Alternative results match DWR's Delivery Capability report? Can Reclamation provide a comparison? If they use different inputs can there be a model run using DWR's Delivery Capability report (inflow and other) inputs for comparison of the baselines?	The No Action Alternative is the appropriate baseline for analysis as explained in Standard Response 2, Related Regulatory Processes). The Delivery Capability Report is not an analysis conducted to comply with NEPA. A comparison between the baseline in the EIS and DWR's Delivery Capability Report is unrelated to the analysis in the EIS. The EIS provides the comparisons needed to evaluate potential impacts of the alternatives. Please see Standard Response 3, Baseline and No Action, regarding the adequacy of the baseline under NEPA.

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75-19	Sites Reservoir B.F. Sisk Dam Raise and Delta Conveyance Project Sites Reservoir B.F. Sisk Dam Raise and the Delta Conveyance Project (DCP) have the potential to affect the energy that WAPA [Western Area Power Administration] markets to its customers. The change to the baseline and a thorough analysis should be considered if any of them are constructed and operated.	Please refer to Chapter 18, Power, and associated Appendix U, Power Technical Appendix, Sections 18.3 and U.3, respectively, which addresses potential cumulative impacts. As discussed in Appendix Y, Cumulative Impacts Technical Appendix, both Sites Reservoir and the Delta Conveyance Project are considered in the cumulative analysis. This EIS includes a programmatic evaluation of the Sites Reservoir Project and the Delta Conveyance Project as part of Alternative 2 (see Appendix AA, Evaluation of Sites Reservoir Project Operations and Appendix Z, DCP Operations). Implementation of these projects (Sites and DCP) would require Reclamation to evaluate the need for future environmental compliance. Additionally, the operational components of B.F. Sisk Dam Raise are included as part of all action alternatives including the Proposed Action and is addressed at a project level and incorporated in the Power chapter in the analysis for Alternatives 1 through 4.
75-20	Governance Structure WAPA [Western Area Power Administration] is in agreement with its inclusion in the Sacramento River Group (SRG) to provide/discuss power-related considerations for pulse flow shaping temperature management fall flow smoothing and fall/winter base flows. The SRG should consider diversions from the Trinity Basin to the Sacramento. Diversions from the Trinity River basin are used to support the Sacramento River basin for environmental purposes. In addition the timing and magnitude of diversions to the Sacramento from the Trinity have significant impacts to hydropower. The Shasta Operating Team would be well-served to have WAPA providing advice on the impacts to	Reclamation appreciates WAPA's interest in the SHOT. WAPA is participating as a federal cooperating agency regarding CVP power. A discussion of the proposed governance process for each alternative is provided in EIS Chapter 3, Alternatives. Reclamations believes the proposed governance process will fairly take into consideration input from parties affected by changes in operations as well as the authorities of each respective agency. Reclamation appreciates WAPA input but was not able to identify a decision-making authority that WAPA would exercise through the SHOT.

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	hydropower and emissions and determining the magnitude and timing of the Trinity River Diversions.	
75-21	WAPA should have a role within the Adaptive Management Steering Committee (AMSC) to provide inputs on power-related issues. WAPA's involvement will improve the process to develop and evaluate the expected outcomes of proposed management actions to compare actual outcomes of actions with the expectations and to make evidence-based adjustments to future actions to improve their effectiveness related to hydropower if warranted.	Reclamation appreciates WAPA's interest in the AMSC. WAPA is participating as a federal cooperating agency regarding CVP power and would have valuable input. For the AMSC, Reclamation was not able to identify authorities and resources WAPA would be exercising to warrant a decision-making role.
75-22	WAPA [Western Area Power Administration] appreciates the opportunity to be engaged in the review of the RoC on LTO Public Draft EIS. WAPA's comments are provided in the attached document #1. Attached documents #2 to #5 are referenced in WAPA's comments.1. WAPA Comments on the Public Drat EIS_2024.09.09_FINAL.pdf2. Attachment C_Comments for 2nd Draft EIS.docx3. Attachment D_Comments for 2nd Draft EIS.docx4. 24-8-28_Monthly_Uniform_Spill_Analysis_No_Animations.pptx5. Release_Assumption_Bias_Code.zipWAPA-SNR looks forward to opportunities of working with Reclamation as a stakeholder in the RoC on LTO for the Central Valley Project and State Water Project.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
75-23	Why Groundwater Emissions Matter to CVP Power Customers: Base Resource is reduced by increased project use. Increased project use is assumed to reduce groundwater pumping emissions. Accurate accounting of groundwater pumping emissions is important to CVP Power Customers because they will be used to weigh the trade-off between reductions in Base Resource with increases in Project Use in the impact analysis in the EIS. If the projected groundwater pumping emissions reduction benefits of an increase in project use is overstated it will negate an accurate assessment of the corresponding reduction in Base Resource and the associated potential increase in emissions impacts. Changes to project use	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis and the use of reliable information. The groundwater pumping emissions estimate is based on the groundwater modeling, and it is limited by the available data on how agricultural users could respond to changes in water availability and cost.

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	must be fairly weighed with corresponding changes to base resource. Thus an accurate assessment of groundwater pumping related emissions is critical.	
75-24	Listed below are reasons why certain key assumptions for groundwater emissions may be inaccurate or invalid. Key Assumptions in EIS Groundwater Emission:1) Long-term average increases in Delta exports (as extension Project Use) will be offset by an equal long-term average decrease in groundwater pumping.2) Long-term average Decrease in Delta exports (as extension Project Use) will be offset by an equal long-term average increase in groundwater pumping. Reasons that key assumption #1 and #2 above are not valid: San Joaquin Valley groundwater basins are in overdraft. State Groundwater Management Act (SGMA) will require Groundwater Sustainability Agencies (GSA's) to stop groundwater overdraft in their respective basins. Stopping overdraft will require long-term decreases in groundwater pumping and/or increases in imported water (Delta exports). Delta exports water in wet years will be used to recharge groundwater and ensure long-term balance with groundwater pumping in dry years. Long-term decreases in Delta exports will result in forced long-term restrictions in groundwater pumping. Long-term restrictions in groundwater pumping without increases in Delta exports will result in land fallowing. Long-term increase in Delta exports water will result in increased groundwater recharge. Only if the increase in Delta exports is significant enough to reduce all land fallowing will there be any reduction in groundwater pumping. The increase in Delta exports used for recharge will be ultimately pumped in dry years. Some of the recharge will be actively recharged requiring additional energy and resulting in emissions.	SGMA prescribes that GSA) develop GSPs to bring medium- and high-priority basins into sustainable operation. Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium and high priority basins with overdraft conditions or 2042 for medium and high priority basins without overdraft. Each GSP that is either currently being developed or has been developed is specific to each groundwater basin/subbasin. The C2VSim groundwater model does not include specific actions for each GSP relative to parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decisions regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The C2VSim model represents effects to groundwater resources that may be more substantial than when GSP provisions are fully enacted. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives. C2VSim is the best available groundwater modeling tool given the geographic scale of the analysis and the complexity of linking to the CalSim 3 model analysis. The groundwater pumping emissions estimate is based on the

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		groundwater modeling and is limited by the available data on how agricultural users could respond to changes in water availability and cost.
75-25	3) The Emissions factor for electricity used for groundwater pumping can be derived from averaged daily long-term grid data. Reasons that key assumption #3 above is not valid: Timing of groundwater pumping for agricultural use is flexible through a given day. There is an abundance of solar energy supply in the San Joaquin Valley resulting solar generation curtailments during the irrigation season. There are planned expansion of solar generation farms in the San Joaquin Valley. PG&E provides Time-Of-Use rates for energy for agricultural users. Time-Of-Use rates encourage groundwater pumping when solar energy is abundant and grid emissions are low. Time-Of-Use rates discourage groundwater pumping when the cost of energy is high which are also when grid emissions are high. Therefore electricity used for pumping groundwater uses less emissions than the average daily long-term grid emissions data because 1) there is much less pumping during peak energy demand times with higher emissions and 2) there is more pumping during off-peak energy demand times with lower emissions when solar and other renewables are generating.	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis and the use of best available science. Reclamation intends to continue to develop the Emission Footprint Methodology for potential use in future analyses.
75-26	[See original comment for table: M.2-1. Average Source Emission Factors Commonly Used in GHG Emission Analysis Average from full Electric Generation Portfolio (lb/MWH) and Diesel Pump Engines (g/hp/hr)]Sources: electric generation U.S. Environmental Protection Agency 2023; diesel pump engines California Air Pollution Control Officers Association 2022.Notes: g/hp-hr = grams per horsepower-hour; lb/MWh = pounds per megawatt-hour; CO2 = carbon dioxide; CH4 = methane; N2O = nitrous oxide; CO2e = carbon dioxide equivalent. These common single value portfolio emissions factors are just the statistic calculated by dividing the exhaust emissions of a portfolio's fossil fired power plants by the	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis and the use of reliable data. Reclamation's Emission Footprint Methodology, currently in development, accounts for marginal emissions. Reclamation intends to continue to develop the Emission Footprint Methodology for potential use in future required environmental compliance. An example of this methodology was used in the Draft EIS. See Appendix M, Greenhouse Gas Emissions, Section M.3.3, Refined Methodology.

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	electrical output of all the power plants in the portfolio including nuclear hydro and other renewables. So using this type of average factor implicitly assumes nuclear and hydro magically throttle up if hydro is throttled down. But resources like hydro and nuclear are already dispatched as fully as possible so they cannot be further throttled up if there was less hydro. We can correct for the two shortcomings of using Table M.2-2 by first making a table to reflect achievable portfolios (increasing fossil generation if hydro is decreased) and secondly by reflecting the fugitive upstream emissions associated with procuring more fossil gas to run the fossil powerplants. These changes are important because they improve the accurate modeling of scenarios and the improvements are large enough to be impactful in optimal decision-making.	Reclamation will consider including fugitive upstream emissions (methane leakage) in future required environmental compliance.
75-27	Moving from grid average emissions to marginal emissions changes in emissions related to changes in hydropower generation would be best represented by the Day Ahead marginal emissions. That information has not yet been compiled and is not yet available. The emission rate for the Day Ahead marginal emission would be expected to be the gas-fired combined-cycle power plant emissions during a large portion of most days. During some hours of the day during some parts of the year renewables can be curtailed. The purpose of the Emission Footprint Methodology suggested by WAPA [Western Area Power Administration] is to identify when shifts in the timing of generation would be moved from a period with high Day Ahead marginal emissions (i.e. gas-fired combined-cycle power plant emissions) to a period low Day Ahead marginal emissions (i.e. curtailed renewables).	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis and the use of reliable data. Reclamation intends to continue to develop the Emission Footprint Methodology for potential use in future analyses. An example of this methodology was used in the Draft EIS. See Appendix M, Greenhouse Gas Emissions, Section M.3.3, Refined Methodology. An example of this methodology was used in the Draft EIS. See Appendix M, Greenhouse Gas Emissions, Section M.3.3, Refined Methodology.
75-28	In the absence of the Refined Hourly Post-Process of LT-Gen (previously referred to as the Emission Footprint Methodology) average source grid emissions should be replaced by the gas-fired combined-cycle power plant emissions to reflect the common marginal powerplant that will be throttled up or down (or	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis and the use of best available science. Reclamation has retained the use of grid average emission rates

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	activated) to replace changes in availability of hydropower generation brought about by alternative hydro operation rules. A typical heat rate of combined- cycle gas power plants = 8000 Btu/kWh which equates to 8000000 Btu of methane combustion per MWh of combined cycle gas powerplant output. The gas-fired combined-cycle exhaust emissions amount to 928 lb. CO2/MWh of combustion exhaust emissions (80 Therms of gas fuel per MWh times 11.6 lb. of CO2 exhaust per therm of gas combusted).This is 2.04 times as much exhaust emissions for the gas-fired power plants compared to the grid average grid power plant reflected in the average electric generation column of Table M.2-2. (928 lb. exhaust CO2 of an 8000 Btu/kWh combined cycle gas plant / 456 lb. CO2 exhaust of portfolio with renewables and gas = 2.04 times as much emissions as the average MWh on the grid). It makes sense to either A) use some particular combined cycle power plant's specific emissions factors directly as the marginal resource emission factor or to B) correct the grid average emission factor to represent the combined cycle plant by picking a heat rate and factoring the grid average exhaust emissions to match the heat rate selected. The method B of scaling to a selected heat rate is demonstrated below.By applying this 2.04 correction factor we can create the exhaust marginal emissions Table M.2- 2.5[See original attachment for table: M.2-2.5 Pollutant (lb/MWh) Diesel Pump Engines (g/hp/hr)]	for the EIS. Reclamation intends to continue to develop the Emission Footprint Methodology for potential use in future analyses. An example of this methodology was used in the Draft EIS. See Appendix M, Greenhouse Gas Emissions, Section M.3.3, Refined Methodology.
75-29	Including upstream emissions In addition to the gas-fired generator exhaust emissions counted in the eGRID model it now makes sense to also include the upstream emissions that occur in the process of extracting gathering processing compressing storing and transmitting the natural gas (primarily methane) from the incremental production gas fields to the gas-fired generators. The marginal source of natural gas for California is in the Permian Basin of the Southwest U.S. The upstream leakage of gas from that basin	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis and the use of reliable data. Reclamation will consider including emissions from methane leakage in future required environmental compliance.

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	is on the order of 9% of gas produced is leaked before the remainder arrives at its location of combustion (power plant). (source: Howarth et al*). Taking into account the 27.9 GWP (on the relaxed 100-year basis) of methane and correcting for the stoichiometric weight ratios of CO2 (44 grams/mole) and CH4 (16 grams/mole) shows that the upstream emissions for gas-fired power plants add an additional xx lbs/MWh.(80 Therms combusted/MWh + 80 x 9% leaked = 87.2 Therms extracted with 7.2 Therms leaked and 80 Therms delivered to the powerplant7.2 Therms/MWh leaked x 11.6 lb/therm (combustion) x 27.9 GWP x 16/44 = 847 lb CO2e/MWh for combined cycleSo we can create the Upstream and Exhaust Marginal emissionsTable M.2-2.7[See original attachment for table: M.2-2.7 Pollutant (lb/MWh) Diesel Pump Engines (g/hp/hr)]Table M.2-3 shows the estimated GHG emissions from fossil-fueled grid powerplants associated with net generation based on the net generation values given in Table M.2-1. Figure M.2-1 and Figure M.2-2 show the emissions of CO2e for grid power generation and the changes compared to the No Action Alternative respectively.	
75-30	Conclusion to get accurate assessments of emission impacts from different hydroelectric output changes we need to:A) Use the marginal change in emissions not the average grid emission factor.B) Include the upstream emissions to produce and deliver the fuel for the marginal generators effected by the hydroelectric output change.	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis and the use of best available science. Reclamation intends to continue to develop the Emission Footprint Methodology for potential use in future analyses. An example of this methodology was used in the Draft EIS. See Appendix M, Greenhouse Gas Emissions, Section M.3.3, Refined Methodology.
75-31	[Footnotes to text in tables please refer to original attachment]https://www.permianmap.orghttps://jpt.spe.org/permian-oil-fields-leak-enough-methane-7-million-homes https://www.research.howarthlab.org/documents/Howarth2022_EM	The commenter provided this weblink for reference purposes in support of the EIS comments. Comments specifically referencing this source are addressed in these responses to comments. Reclamation has reviewed and considered the information cited

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	_Magazine_methane.pdf https://greet.anl.govhttps://www.epa.gov/greenvehicles/fuels-learn-more-about-fuel-assumptions-choose- path-tool#:~:text=Upstream%20emissions%20include%20emissions%20associateddistribution%20o f%20the%20motor%20fuel	by the commenter.
75-32	We did not at this time find sufficient information to propose modifications to the criteria pollutant factors for PM10 PM 2.5 and ROG associated with electricity sources and diesel pumps because the data source proposed in the L2 document has values from a California Air Resources Board inventory produced for its 2013 report. We have no suggested changes to the PM10 PM 2.5 and ROG factors.	Reclamation appreciates this comment.
75-33	ATTACHMENT 3:[See original for Presentation]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
75-34	ATTACHMENT 4:[See original for zip file]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.

Table 4-76. Letter No. 76

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76-1	The Tehama-Colusa Canal Authority ("TCCA") on behalf of itself and its members listed in Attachment 1 appreciates the opportunity to review and comment on the Public Draft Environmental Impact Statement ("Draft EIS") for the Long-Term Operations of the Central Valley Project ("CVP") and State Water Project ("SWP"). TCCA is a joint powers authority whose members include all water service contractors on the Tehama-Colusa Canal and the Corning Canal and in that capacity provides the following comments on the Draft EIS.	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
76-2	TCCA is also aware that the United States Bureau of Reclamation's ("Reclamation") preferred alternative 2b is still in development and reserves the right to comment on the analyses of Alternative 2b when those analyses are made public.	The modeling in the Final EIS has been updated for Alternative 2 to include the assumptions and actions under Alternative 2B. The modeling provided in the Final EIS does not present effects significantly different from those presented in the Draft EIS.
76-3	TCCA opposes any proposed operation of the CVP that will cause reductions in CVP project allocations to TCCA's members in contravention of Reclamation's contractual obligations. Reclamation is contractually obligated to "make all reasonable efforts to optimize Project Water deliveries" (Art. 11) to the water service contractors including using "all reasonable means to guard against a Condition of Shortage in the quantity of Project Water to be made available" (Art. 12) to the water service contractor. See e.g. Colusa County Water District Water Service Contract No. 14-06-200-304-LTR1 at Art. 11 and Colusa County Water District WIIN Act Contract No. 14-06-200-A-P at Art. 12. Reclamation cannot comply with these provisions by voluntarily taking actions that reduce deliveries to TCCA's members.	Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, and Standard Response 4, Alternatives Formulation, regarding the purpose and need for Reclamation’s action and the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Reclamation appreciates this input and intends to comply with its contract. In doing so, Reclamation will comply with applicable federal laws and regulations.
76-4	However TCCA is concerned that Alternatives 2 3 and 4 of the Draft EIS involve proposed CVP operations that would reduce supplies to TCCA's member entities as a result of voluntary	The affected environment describes the conditions surrounding the action. Constraints on operations include hydrology, flood control, senior water rights, water quality requirements, among

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	actions that Reclamation is proposing. Draft EIS Water Supply at 5-3; see also Appendix H Water Supply Technical Appendix at H-26 Tables H-10 H-11 H-12 and H-13 (showing increased reductions to CVP agricultural water users under all phases of Alternative 2); id. at H-4344 Table H-38 (same for Alternative 3); id. at H-49 Table H-45 (same for Alternative 4). The Draft EIS does not identify or explain non-voluntary measures that require Reclamation to reduce deliveries to the water service contractors.	others. Please also see the Environmental Baseline in the Biological Assessment.
76-5	Moreover Alternatives 2 3 and 4 are inconsistent with Reclamation's stated Purpose and Need because they contravene Reclamation's contractual obligations to TCCA's member entities. The Draft EIS' stated Purpose and Need is "to continue the operation of the CVP and the SWP for authorized purposes in a manner that . . . [s]atisfies Reclamation['s] contractual obligations and agreements." Draft EIS Purpose and Need at 2-1. For the reasons stated above it is unclear how the proposed operations under Alternatives 2 3 and 4 are consistent with Reclamation's contractual obligations to TCCA's members. The Final EIS must ensure that these alternatives are consistent with TCCA's members' contracts because "it would turn NEPA on its head to interpret the statute to require that an agency conduct in-depth analyses of alternatives that are inconsistent with the agency's policy objectives." Westlands Water Dist. v. U.S. Dept. of Interior 376 F.3d 853 871 (9th Cir. 2004) (cleaned up).	Reclamation proposes to operate the CVP consistent with contractual obligations and agreements, as stated in the purpose and need.
76-6	TCCA further supports the management of groundwater resources in the Sacramento Valley. Many of TCCA's members are groundwater sustainability agencies ("GSAs") charged with managing the groundwater resources within their service areas pursuant to California's Sustainable Groundwater Management Act ("SGMA"). TCCA is committed to securing stable surface water supplies on behalf of its members to assist the GSAs in	Reclamation appreciates this comment. The Sacramento Valley is included in the information and analysis presented in Chapter 6, Groundwater, and Appendix I, Groundwater Technical Appendix.

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	sustainably managing groundwater resources in the Sacramento Valley. As such TCCA appreciates Reclamation's efforts in making surface water supplies available in the Sacramento Valley. TCCA requests that the Final EIS fully inform Reclamation and the public of the impacts to groundwater in the Sacramento Valley as it relates to the sustainability goals and requirements of SGMA.	
76-7	Lastly TCCA joins the comments made by the Sacramento River Settlement Contractors and the San Luis-Delta Mendota Canal Authority and additionally desires that Reclamation develop a Final EIS that complies with the requirements of the National Environmental Policy Act.	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis in the EIS, consistent with the requirements of the National Environmental Policy Act.
76-8	ATTACHMENT 1Tehama-Colusa Canal Authority Member Entities: Colusa County Water District Corning Water District Cortina Water District Davis Water District Dunnigan Water District 4-M Water District Glenn Valley Water District Glide Water District Holthouse Water District Kanawha Water District Kirkwood Water District La Grande Water District Myers-Marsh Mutual Water Company Orland Artois Water District Roberta Water District Thomes Creek Water District Westside Water District	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.

Table 4-77. Letter No. 77

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77-1	Thank you for the opportunity to comment on the U.S. Bureau of Reclamation's ("Reclamation") Draft Environmental Impact Statement for the Long-Term Operations of the Central Valley Project, dated July 2024 ("Draft EIS"). My Family has been farming in Newman California since 1968, I am a third generation farmer and very concerned for our Family Farm's future.	Reclamation appreciates this comment. This is an introductory comment that provides background information about the commenter.
77-2	As a South-of-Delta Landowner who receives water supplies dependent on the operation of the Central Valley Project (CVP), decisions currently being made and to be made in the future regarding those operations are of utmost concern to my family farm. Water supply reliability for our region of the CVP has decreased on average by over 50% over the last 30+ years and, it appears, will only further erode if the current "preferred" alternative is implemented. This certainly will impact the ability of all South-of-Delta farmers served by the CVP to remain financially viable, which would likely mean less safe and abundant food supply produced by California to feed our nation and the world. Information being circulated regarding the proposed preferred alternative indicates that not only does the alternative fail to strike an appropriate balance between species protection efforts and flexible operations of the State and Federal Water projects, it may also violate multiple existing laws, including the Central Valley Project Improvement Act. The alternative also proposes voluntary actions to be taken by Reclamation to coordinate operations with the State Water Project in ways that essentially apply requirements specified only for the State Water Project to the CVP, contrary to existing law, and possibly in violation of Reclamation's obligation to not impose conditions of shortage under existing CVP contracts, including the contract held by the	Refer to *Chapter 2 Purpose and Need*, regarding the purpose of the action to continue the operation of the CVP and the SWP. Refer to *Chapter 5, Water Supply,* for information on potential impacts of the alternatives on water supply, and *Appendix H, Section H.2.9*, for a detailed summary of water supply impacts. Please refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding the purpose and need for the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Also, refer to Standard Response 1 regarding comments that state opinions of general opposition to the project.

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	district from which my Lands receive service, the Del Puerto Water District.	
77-3	As a farmer who must adaptively manage my farm to account for changes in climate, laws, regulations and the agricultural economy, it is extremely frustrating to observe the current process, which continues to advance the failed strategy of the last 30 years of using flows only to address the multiple stressors, including predation, non-native invasive species, and climate change, to name a few, that are impacting the Delta ecosystem and the species that call the Delta home.	Please refer to *Appendix Y Cumulative Effects* for additional information and analysis of non-flow measures and habitat restoration actions.
77-4	As we do on the farm, Reclamation must modify its approach and implement scientifically based adaptive management to improve water supply reliability and protect the environment.	Refer to Chapter 3, Alternatives, Section 3.1, Common Components, regarding six common components of all alternatives, including adaptive management, which is a science and decision analytic-based approach to evaluate and improve actions, with the aim to reduce uncertainty over time and increase the likelihood of achieving and maintaining a desired management objective.
77-5	Similar to previous updates to the environmental documentation that governs operations of the CVP, along with other laws [and] regulations, the proposed preferred alternative has disproportionate impacts on the westside of the San Joaquin Valley, a region that is historically economically underdeveloped and least able to bear the burden of the water supply reductions. This makes no sense as a matter of national security, as this same region is responsible for producing much of our nation's food supply.	Refer to Chapter 17, Environmental Justice, regarding the effects of the alternatives on environmental justice communities in the study area, and Appendix T, Environmental Justice Technical Appendix, Section T.2.9, Summary of Impacts, for a summary of impacts of the alternatives, the magnitude and direction of those impacts, and potential mitigation measures for consideration. Refer to Chapter 5 and Appendix H, Water Supply, for the analysis of the alternatives impact on water supply. Refer to Chapter 14 and Appendix Q, Regional Economics, for an economic analysis associated with the alternatives.
77-6	In closing, the Proposed Action should be modified when Reclamation issues the Final Environmental Impact Statement to strike the appropriate balance between flexible project operations	Refer to the response to comment 77-2. Refer to Chapter 0, Summary, Background section and Alternatives section, regarding the background of the CVP and Reclamation's preparation of the

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	and species protection required by law, thereby ensuring the continued viability of California's small family farmers.	EIS in response to Executive Order 13990 and consideration of a range of reasonable alternatives, consistent with 40 CFR Section 1502.14, including a No Action Alternative that would continue implementation of the 2020 Record of Decision on the Reinitiation of Consultation on the Coordinated Long-Term Operation of the CVP and SWP.

Table 4-78. Letter No. 78

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78-1	[See Letter 61 for related content.] Attachment 1: CDWA Supplemental Comments on the May 2024 DEIR for the Long-Term Operations of the SWP regarding the alternatives selection. Attachment 2: CDWA Supplemental Comments on the May 2024 DEIR for the Long-Term Operations of the SWP regarding impacts related to water transfers. Attachment 3: Letter to DWR Re: CDWA Supplemental Comments on the DEIR for the Long-Term Operation of the SWP, dated January 6, 2020. Attachment 4: Letter from South Delta Water Agency (SDWA) to DWR Re: SDWA Comments on the DEIR for Long-Term Operation of the SWP, dated January 6, 2020.	These attachments are provided in support of the comments submitted by the Central Delta Water Agency. Reclamation has reviewed these comments which are relevant to the Department of Water Resources' SWP Long-Term Operations CEQA process. Updates regarding the CEQA process can be found on DWR's website, https://water.ca.gov/News/Public-Notices
78-2	[See Letter 61 for related content.] Attachment 5: Letter to DWR Re: CDWA Supplemental Comments on the Delta Conveyance Project Draft Environmental Impact Report, dated December 16, 2022. Attachment 1 to Attachment 5: Additional Supplemental Comments on the Delta Conveyance Project. Attachment 1 to Attachment 1 of Attachment 5: Slide Presentation from the 2022 Water Transfers Annual Meeting on December 9, 2022.	These attachments are provided in support of the comments submitted by the Central Delta Water Agency. Reclamation has reviewed these comments which are relevant to the Department of Water Resources' Delta Conveyance Project EIR. Please refer to Appendix Z, Delta Conveyance Operations regarding how Reclamation has considered the Delta Conveyance Project in this EIS. DWR has issued a final EIR and responses to comments are provided on the project website, https://www.deltaconveyanceproject.com/planning-processes/california-environmental-quality-act/final-eir/final-eir-document.

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	Attachment 2 to Attachment 5: Letter Re: CDWA's Comments on the Notice of Preparation of an Environmental Impact Report for the Delta Conveyance Project, dated April 17, 2020. Attachment 3 to Attachment 5: Report titled "Economic Analysis of the California WaterFix: Benefits and Costs to Project Participants" prepared for DWR by D. Sunding, dated September 20, 2018.	

Table 4-79. Letter No. 79

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79-1	The SRS Contractors [Sacramento River Settlement Contractors] previously submitted two sets of comments on the prior iterations of the Draft EIS. See Attachments B & C. The Draft EIS does not address the SRS Contractor's concerns in the prior comment letters and thus the SRS Contractors re-incorporate those comments here. The SRS Contractors remain opposed to any action that conflicts with or impairs Reclamation's ability to meet its contractual obligation to furnish water to satisfy the SRS Contractor's underlying water rights to the Sacramento River. Specifically Reclamation's CVP Operations under Alternatives 3 and 4 include components that would reduce the amount of water available to Reclamation to satisfy its obligations under the Sacramento River Settlement Contracts ("SRS Contracts") absent the SRS Contractors' agreement. Reclamation does not have the ability to unilaterally modify its performance of the SRS Contracts. Natural Resources Defense Council v. Haaland 102 F.4th 1045 107579 (9th Cir. 2024). Unless it is a Critical Year as defined in the SRS Contracts Reclamation must make the full contract amount available to the SRS Contractors for diversion. Id. at 1076. Otherwise any reduction in water supplies must result from a voluntary action by the SRS Contractors. See id. Reclamation simply lacks the operational discretion to implement an action that breaches its obligations under the SRS Contracts.	Reclamation carefully reviewed each comment received for each Cooperating Agency Draft EIS. Comments as appropriate are reflected in the text of the Draft EIS. Comments not reflected in the Draft EIS were still considered by Reclamation, but it was deemed that they did not require a text modification. Please refer to Standard Response 4, Alternatives Formulation, regarding the feasibility of the alternatives included in the range of reasonable alternatives analyzed in this EIS. Reclamation is a federal agency and operates consistent with applicable law, contracts, and agreements.
79-2	In addition the SRS Contractors reiterate their positionand Reclamation's position in the stayed California Natural Resources Agency v. Raimondo No. 1:20-cv-00426-JLT-EPG (E.D. Cal.) litigationthat Reclamation is not subject to the California Endangered Species Act ("CESA"). Only Congress can waive Reclamation's sovereign immunity via clear and unambiguous	Reclamation and the CVP are not subject to requirements under CESA. Please see Standard Response 2, Related Regulatory Processes, regarding related regulatory processes.

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	legislation authorizing state regulation. Plaskett v. Wormuth 18 F.4th 1071 1086 (9th Cir. 2021). As Reclamation extensively briefed in the CNRA v. Raimondo action there is no clear and unambiguous legislation subjecting Reclamation to CESA's requirements. Attachment B (Fed. Defs.' Mot. Dismiss 522 ECF No. 117). Reclamation cannot by itself voluntarily waive immunity to regulation under CESA by seeking to "voluntarily harmonize CVP operating criteria" with CESA's requirements. Draft EIS Purpose and Need at 2-1. The SRS Contractors agree with the comments of the San Luis-Delta Mendota Water Authority on this issue and urge Reclamation to reformulate its Purpose and Need statement accordingly.	
79-3	Lastly absent an agreement with the SRS Contractors to implement the proposed Shasta Framework Alternatives 2 3 and 4 are inconsistent with the Draft EIS' Purpose and Need because they depend on components that would result in Reclamation's breach of contract. [Footnote 2: Additionally the Draft EIS' modeling results show reductions to SRS Contractor deliveries during non-Critical Years under Alternatives 2 3 and 4. See Draft EIS Appendix H Water Supply Technical Appendix at Tables H-10 H-38 & H-45.] For example Alternative 2 would reduce water available to satisfy SRS Contract totals below 75% in order to meet end-of-September Shasta storage targets for carryover purposes. Draft EIS Appendix E Draft Alternatives at E-80. Alternative 4 would similarly reduce deliveries from storage to meet SRS Contractors' demands to 60% of contract totals in order to meet end-of- September storage targets. Id. at E-170. And Alternative 3 would reduce deliveries from storage and instead bypass Shasta inflow to increase instream flows and further delay and deprioritize SRS Contract deliveries. Id. at E-163. The Purpose and Need states that the purpose of the action is to continue to operate the CVP for congressionally authorized purposes in a manner that "[s]atisfies Reclamation['s]	Please see Standard Response 4, Alternatives Formulation, for additional discussion regarding the adequacy of the Purpose and Need statement and the feasibility of the alternatives evaluated in detail in the EIS. Reclamation is a federal agency and operates consistent with applicable law, contracts, and agreements. Alternative 2 includes coordination with the Sacramento River Settlement Contractors for voluntary reductions in water deliveries and also includes work on the Winter Run Action Plan to address stressors on listed species. Voluntary reductions are consistent with contracts.

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	contractual obligations and agreements." Draft EIS Purpose and Need at 2-1. However none of the components in Alternatives 2 3 and 4 that reduce SRS Contract diversions are allowed by the terms of the SRS Contracts and would require a separate agreement. As the SRS Contractors have previously commented Reclamation should have dismissed Alternatives 3 and 4 because "it would turn NEPA on its head to interpret the statute to require that an agency conduct in-depth analyses of alternatives that are inconsistent with the agency's policy objectives." Westlands Water Dist. v. U.S. Dept. of Interior 376 F.3d 853 871 (9th Cir. 2004).	
79-4	The Draft EIS fails to fully inform Reclamation of Alternative 2b's environmental impacts. The Draft EIS' evaluation of the alternatives does not meet NEPA's "hard look" standard. NEPA requires federal agencies take a "hard look" at their proposed actions' environmental consequences in advance of deciding whether and how to proceed. Robertson v. Methow Valley Citizens Council 490 U.S. 332 35051 (1989). An agency's environmental impact statement complies with the "hard look" standard when it contains a sufficient discussion of the relevant issues and opposing viewpoints and the agency's decision is fully informed and well-considered. Id. at 34951. The Draft EIS' assessment of the alternatives does not meet this standard. The Draft EIS does not meet the "hard look" standard because does not "rigorously explore and objectively evaluate" the environmental impacts of Reclamation's preferred alternative 2b. 40 C.F.R. 1502.14(a). Alternative 2b includes operational components designed to harmonize CVP operations with SWP operations as modified by the California Department of Fish and Wildlife's incidental take permit requirements. Draft EIS Draft Alternatives at 3-43. Unlike the No Action Alternative ("NAA") and Alternatives 1 2 3 and 4 the Draft EIS does not quantitatively assess or describe the environmental impacts of Alternative 2b. Id. Instead Reclamation describes	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis consistent with the requirements of the National Environmental Policy Act. Refer to Standard Response 4, Alternatives Formulation for a description of the process used to identify, evaluate, refine, and select a reasonable range of alternatives to be evaluated in the LTO EIS. For the FEIS, Reclamation has conducted quantitative analysis by modeling the additional actions under 2B as part of Alternative 2. The quantitative analysis is consistent with the qualitative analysis presented in the DEIS.

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	qualitatively the expected impacts that Alternative 2b may have. Id.The qualitative descriptions of Alternative 2b's expected impacts fail to provide Reclamation with "detailed information concerning significant environmental impacts." Robertson v. Methow Valley Citizens Council 490 U.S. at 349 (explaining NEPA's requirements). This is because the qualitative analyses are equivocal on the expected impacts. For example the Draft EIS's description of water supply impacts under Alternative 2b note that due to the extension of the CCF operation period export restrictions may or may not increase. Draft EIS Water Supply at 5-6. Thus the qualitative description does not inform Reclamation or the public at large whether Alternative 2b will in fact increase or decrease water supplies. The Draft EIS' failure to provide a quantitative analysis of Alternative 2b's environmental impact means that Reclamation may be impermissibly omitting consideration of environmental impacts to water supplies terrestrial species and regional economics. Center for Biological Diversity v. Bernhardt 982 F.3d 723 73740 (9th Cir. 2020) (holding the failure to quantitatively assess environmental impact when data available violates NEPA). The Draft EIS does not describe why Reclamation did not model Alternative 2b's impacts. Id. at 739. Nor does the Draft EIS state that Reclamation lacks information. Id. (citing Department of Interior regulation addressing how to analyze impacts when facing "incomplete or unavailable information."). To the contrary the Draft EIS describes the specific actions that Reclamation would change from Alternative 2 to Alternative 2b in order to "harmonize" CVP operations with CESA. Draft EIS Appendix E Draft Alternatives at E-15761. Reclamation therefore should include a quantitative analysis of Alternative 2b's environmental impacts. Center for Biological Diversity v. Bernhardt 982 F.3d at 73940.Lastly any harmonization of CVP operations with CDFW's requirements for SWP operations cannot come at the expense of water supplies needed to meet the SRS Contractors' contractual rights. As explained above the SRS	

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	Contractors oppose selecting an alternative that voluntarily subjects CVP operations to CESA's requirements.	
79-5	The Draft EIS fails to fully inform Reclamation of impacts resulting from reductions in water supply under Alternatives 2 3 and 4. Alternatives 2 3 and 4 each involve reductions in available water supply to the SRS Contractors. Draft EIS Appendix E Draft Alternatives at E-8081 (describing Alternative 2 to involve reductions in available water supply from 75% to 50% of contract quantities); E-163 (describing Alternative 3 to involved reduced deliveries from storage); E-170 (describing Alternative 4 to involve reductions in Project Water to about 60% of SRS Contract totals).However the Draft EIS fails to fully analyze and disclose potential impacts resulting from the reduction in water supply in the Sacramento Valley. For example the Draft EIS acknowledges that "Alternatives 2 3 and 4 propose reductions in total diversions to SRS Contractors that is anticipated to result in fallowed rice lands during dry and critical years" Draft EIS Terrestrial Biological Resources at 13-5 but only identifies impacts associated with the fallowing expected to occur in connection with the VAs and not water supply reductions described in Alternatives 2 3 and 4 see Appendix P Terrestrial Biological Resources at P-69 (referencing Table E.5.10 summary of water contributions under the VA program). In this way the Draft EIS fails to fully inform Reclamation and the public of the potential impacts of Alternatives 2 3 and 4. To the extent that Reclamation plan to address the impacts of fallowing in the Sacramento Valley in a separate environmental document that decision should be explained in the Final EIS.	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis in the EIS consistent with the requirements of the National Environmental Policy Act. A good-faith evaluation of direct, indirect and cumulative impacts associated with the Proposed Action and alternatives is provided in Chapter 5, Water Supply and Appendix H, Water Supply Technical Appendix. Specifically, Chapter 5, Section 5.2.2 address potential water supply impacts on the Trinity River, Sacramento River, Clear Creek and the American River and Section 5.4 addressed cumulative impacts. Other water supply associated impacts, such as those on visual resources, economics, land use, recreation, environmental justice and public health, are evaluated and disclosed in Chapter 11, 14, 15, 16, 17 and 21, respectively. A federal action related to voluntary SRSC reductions must complete applicable environmental compliances such as NEPA and ESA. Reclamation is coordinating with SRSCs to operationalize reductions. Compliance efforts are currently underway.
79-6	The Draft EIS' regional economic impact analysis requires additional explanation and information. The Draft EIS' economic impact analysis does not take a "hard look" at the regional agricultural economic impacts because it does not consider leading agronomic research and does not fully explain the assumptions	40 Code of Federal Regulations (CFR) § 1502.15 states that an environmental impact statement shall succinctly describe the environment of the area(s) to be affected by the alternatives under consideration, including the reasonably foreseeable environmental trends and planned actions in the area(s).

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	underlying its analysis. 40 C.F.R. 1506.6(b).First the economic impact analysis does not consider leading research assessing the agricultural economic impacts resulting from surface water shortages. Researchers at the University of California and the Public Policy Institute of California ("PPIC") recently published a comprehensive report titled: Economic Impacts of the 2020-22 Drought on California Agriculture. Medelln-Azuara J. et al. Water Systems Management Lab University of California Merced Economic Impacts of the 2020-22 Drought on California Agriculture A report for the California Department of Food and Agriculture (2022) (Attachment D). In addition the PPIC published a policy brief describing surface water shortage's economic impact on California agriculture. Escriva-Bou A. et al. PPIC Policy Brief: Drought and California's Agriculture (2022) http://ppic.org/publication/policy-brief-drought-and-californias-agriculture/ (Attachment E). Reclamation should consider and rely on both reports as they contain "high-quality information reliable data and resources [and] models" regarding the effects of surface water shortages on regional agronomics. 40 C.F.R. 1506.6(b).	Furthermore, 40 CFR § 1502.2(a) states that environmental impact statements shall not be encyclopedic. Reclamation has reviewed the information provided in the papers mentioned in the comment and believes the environmental impact statement contains sufficient information about regional economic development impacts for understanding the potential impacts of the action alternatives. The Medellin-Azuara report cited in the comment used similar methods to those used in the agricultural economic analysis for the EIS. However, the Medellin-Azuara report evaluated effects of a particularly severe drought sequence that was not evaluated for the EIS and thus would generate different results.
79-7	Second the Final EIS should explain the assumptions underlying the Draft EIS' economic impacts analyses and reconcile these conclusions with the reports' conclusions. The Medellin-Azuara et al. report concludes that the Sacramento Valley alone lost $358 million in gross crop revenue in 2021 and $659 million in 2022. Attachment D at p. 15. Comparatively the Draft EIS concludes that Alternatives 2 and 3 may result in increased gross crop revenue in dry years. Draft EIS Regional Economics at 14-6 & Table 14-3; Draft EIS Appendix Q Regional Economics at Q-20 Q-40 Table Q-42 & Table Q-61. The Draft EIS reaches this conclusion by assuming that farmers will transition from rice to higher-value crops like fruits and vegetables. The Final EIS should explain the basis for this assumption and further explain whether the model considers	Please refer to Chapter 1, Regional Economics, and Appendix Q, Regional Economics Technical Appendix, as well as Appendix Q – Attachments 1 through 3. The Medellin-Azuara report cited in the comment used similar methods to those used in the agricultural economic analysis for the EIS. However, the Medellin-Azuara report evaluated effects of a particularly severe drought sequence that was not evaluated for the EIS. Differences in results would be expected because: the analysis for the EIS is based on 2040 conditions, including full SGMA

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	externalities like the agricultural production infrastructure or programs that incentive riceland habitat for listed and migratory species that may incentivize farmers to retain rice acreage. Sierra Club v. Federal Energy Regulatory Comm'n 867 F.3d 1357 1374 (D.C. Cir. 2017) (holding agency abused discretion by not disclosing key assumptions of environmental impact analysis).	implementation. The regional and temporal pattern of water supply effects during the 2020–2022 drought were different from those evaluated for the EIS alternatives. For example, the water operations analysis for the EIS alternatives did not show the very substantial water supply cuts suffered by Settlement Contractors in 2022, nor was the important land idling due to voluntary (and compensated) water transfers from the Sacramento Valley in 2021 assumed in the EIS analysis. The Medellin-Azuara secondary impact analysis evaluated so-called forward-linked effects (such as on agricultural product processing sectors) that are not built into the IMPLAN model and were not evaluated quantitatively for the EIS. The increased crop revenue estimated by SWAP for some alternatives is entirely due to the market effects on crop prices. Many crops are grown in both the Sacramento and San Joaquin Valleys. If production declines in one region, the economic effect on market price can induce crop shifts and increased production in another region. This is the nature of an economic model. Substantial reductions in crop production in the San Joaquin Valley due to water supply reductions under some alternatives therefore induced increased production and/or revenue for the same crops (fruits and vegetables) in the Sacramento Valley. The economic modeling predicts the Sacramento Valley would benefit from this comparative advantage in water supply, at least under the water supply conditions modeled for the EIS. This may not occur in severe drought conditions where

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		Sacramento Valley water supply was severely restricted. Regarding whether any estimated acreage shift from rice to fruits and vegetables could be accommodated within the existing infrastructure and institutions (including incentives to provide rice land habitat), the following points are relevant: 1. The overall acreage shift is small relative to the total rice acreage. In Alternative 3, the estimated rice acreage declines by about 5,000 acres out of a total of over 420,000 acres in the No Action Alternative (just over 1% change) 2. 5,000 acres of change is well within the observed annual variation in rice acreage over recent years.
79-8	Reclamation must accurately characterize the SRS Contract terms as interpreted by the Ninth Circuit.The SRS Contractors appreciate that Reclamation included a more comprehensive description of the SRS Contracts in the Draft EIS. However the description of Reclamation's contractual liability in Appendix C requires refinement. Appendix C states:Additionally Reclamation is shielded from any liability due to a shortage of Project Water or Base Supply caused by a drought. Reclamation is also shielded from any liability due to a shortage of Project Water but not Base Supply caused by any action of Reclamation to comply with a relevant legal obligation.Appendix C Facilities Descriptions at C-43.The Draft EIS presumably is referencing Article 3(h) and 3(i) both of which were recently construed by the Ninth Circuit in Natural Resources Defense Council v. Haaland. See 102 F.4th 1045 107576 (9th Cir. 2024). There the Ninth Circuit determined that these two provisions are force majeure clauses that apply in very narrow circumstances. Id. Critically neither of these provisions "allow Reclamation to alter the amount of water diverted at its discretion." Id. At 1076.The SRS Contractors request Reclamation delete the quoted language in	Thank you for your review of the appendix. The requested edit has been made in the Final EIS.

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	Appendix C as it is unnecessary to the Appendix's content and the analyses therein. Otherwise the language should be amended to mirror the Ninth Circuit's binding construction of Articles 3(h) and 3(i).	
79-9	The Draft EIS requires refinement of its assessment of impacts to winter-run Chinook.The SRS Contractors appreciate Reclamation's efforts to better explain the factors that affect the viability of Sacramento River winter-run Chinook salmon ("winter-run"). The Draft EIS discloses numerous studies and quantitative results of the effects of the NAA and Alternatives 1 2 3 and 4 on the various life stages of winter-run Chinook. However the Draft EIS does not take a hard look at the issues of managing the CVP to reduce temperature dependent mortality ("TDM") at the expense of other critical egg-to-fry survival metrics.The Draft EIS' description of the draft alternatives' impact on winter-run is not a "rigorous evaluation of the indirect direct and cumulative effects of the selected alternatives." Center for Biological Diversity v. Bernhardt 982 F.3d at 73840 (cleaned up). Not only are modeled TDM estimates a poor metric for assessing how the alternatives will impact winter-run Chinook as explained below but the Draft EIS should connect the dots between how operational decisions driven by TDM estimates canand doimpact other winter-run survival metrics. For example CVP operations focused solely on reducing TDM estimates in 2022 resulted in the lowest egg-to-fry survival rates on record. See Attachment F. The present analysis does not rigorously evaluate these issues and as a result does not facilitate fully informed decision-making. Center for Biological Diversity v. Bernhardt 982 F.3d at 735.The SRS Contractors emphasize that modeled estimates of temperature-dependent mortality of winter run are poor indicators for winter-run viability and operational decision-making. Attachments A G.. There is considerable uncertainty associated with the modeled estimates of TDM and the	Water temperature metrics for the TDM analysis were based on scientific literature and best available science. These are described for the alternatives in the water temperature analysis line of evidence to consider potential operational effects on egg/alevin incubation. Other lines of evidence evaluated and summarized in the Draft EIS with TDM and the water temperature analysis include life cycle models, redd dewatering analysis, and spawning habitat analysis. Once juveniles emerge for redds, more lines of evidence are considered with life cycle models and the water temperature analysis, including the winter run juvenile production index model, fry rearing habitat analysis, fry stranding analysis, and multiple survival models. Uncertainty associated with the TDM model is provided in Attachment L.2, Egg-to-fry Survival and Temperature-Dependent Mortality, in Sections L.2.1.2 and L.2.1.3. Uncertainties associated with each of these models are described in the specific line of evidence attachments. Please see Standard Response 5, Adequacy of the Analysis and Mitigation.

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	environmental impacts reported for each alternative should be described with the proper context. See Sierra Club v. Federal Energy Regulatory Comm'n 867 F.3d at 1374 (holding that environmental impact statement that did not disclose agency assumptions of estimates violated NEPA). In particular the impacts analysis should explain that modeled TDM estimates assume background mortality is constant and convey that mortality may be occurring because of other stressors besides temperature. See Attachment G.	
79-10	Additionally the SRS Contractors understand that Reclamation is providing TDM estimates as just one of many lines of evidence to support the evaluation of EIS alternatives. However in furtherance of NEPA's requirement that the agency rely on "accurate scientific analysis" 40 CFR 1500.1(b) and prepare the Draft EIS with "scientific integrity using reliable data and resources" 40 CFR 1506.5(a) the SRS Contractors provide the following suggested revisions and additions to Draft EIS - Lines of Evidence Attachment L.2:L.2.1.1 Model OverviewAfter the sentence:"Model parameters were estimated using known redd locations estimated temperatures and annual estimates of egg-to-fry survival from either 1996-2015 (Martin et al. 2017) or 2002-2020 (e.g. Poytress 2016; Anderson et al. 2022)."Add the following:"It is important to note that no direct estimates of TDM or egg incubation survival are available for winter-run Chinook salmon. Redd locations used for modeling are a subset of total redds that can be observed from the air and underrepresent deepwater spawning known to occur near Keswick Dam. Female spawners and fry-equivalent abundance are the biological field data used for fitting both TDM models. The egg-to-fry survival metriccalculated by dividing estimated fry-equivalent abundance by estimated number of eggs deposited by female spawnersmultiple life stages (adults eggs fry smolts) which are exposed to a variety of stressors and mortality sources in the 95	Uncertainty associated with the TDM model parameter is provided in Attachment L.2 in Section L.2.1.4. Section L.2.1.2, Assumptions/Uncertainty, was added to the attachment. Please refer to the Final EIS for the updated text.

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	km between Keswick Dam and Red Bluff. These gaps in biological field data and use of data that span multi-life stages requires an assumption. Specifically estimating TDM from available biological field data requires the assumption that all sources of mortality not attributable to temperature effects on eggs are a constant value (i.e. "background survival") that does not vary from year-to-year and therefore is not influenced by factors like river flows temperatures after emergence or other environmental covariates (Martin et al. 2017; Gore et al. 2018). For example the Martin and Anderson models assume that survival after fry emerge from spawning gravels is the same in a year with low flows (e.g. 2022) as it is in a year with higher flows (e.g. 2023). The "background survival" constant can be scaled for density-dependence but this only occurs when female abundance is higher than 9100 fish and this scaling is unrelated to the influence of other environmental conditions. The assumption that survival of salmon eggs and juveniles is independent of river flows (for example) was questioned by Gore et al. 2018 and the validity of the assumption has not been demonstrated by any studies conducted since the TDM models were originally developed.	
79-11	L.2.1.2 Analyzing TDM without Parameter/Model UncertaintyDelete this sentence:"Modeling results are summarized for each WY using either the full range of estimated TDM values or using the 80th percentile of TDM estimates as a conservative expected TDM value."Replace with the following:"Modeling results are summarized for each WY using either the full range of estimated TDM values or using the 80th percentile of TDM estimates. These values are provided to help inform qualitative assessment of TDM differences between scenarios. Variation in TDM estimates resulting from these analyses do not represent actual statistical uncertainty associated with TDM estimates (see L.2.1.3)."	Uncertainty associated with the TDM model parameter is provided in Attachment L.2 in Section L.2.1.4. Section L.2.1.2, Assumptions/Uncertainty, was added to the attachment from comment 79-10. Please refer to Final EIS for the updated text.

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79-12	L.2.1.3 Analyzing Stage-Independent TDM with Parameter Uncertaintyp. L.2-3 second paragraph: replace "Parameter staff" with "Reclamation staff."	The text update to “Reclamation staff” in Attachment L.2, Egg-to-fry Survival and Temperature-Dependent Mortality, will be included in the Final EIS.
79-13	FiguresAdd the following sentence to the figure caption in Figures L.2-1 L.2-2 L.2-3 L.2-10 L.2-10 L.2-11 and L.2-12:"TDM estimate uncertainty shown in this figure does not represent actual statistical uncertainty associated with TDM estimates (see L.2.1.3)."Add the following sentence to the figure caption in Figures L.2-8 L.2-9 L.2-17 and L.2-17:"Posterior parameters used for this analysis were narrowed by arbitrarily applying priors to the estimates of critical temperature and density dependence to generate estimates of uncertainty that appeared reasonable. TDM uncertainty shown in this figure understates the actual statistical uncertainty associated with these estimates (see L.2.1.3)."	Uncertainty associated with the TDM model parameter is provided in Attachment L.2, Egg-to-Fry Survival and Temperature-Dependent Mortality, in Section L.2.1.4. Section L.2.1.2, Assumptions/Uncertainty, was added to the attachment from comment 79-10.
79-14	ATTACHMENT 1:[See original comment for Attachment A - List of Sacramento River Settlement Contractors]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
79-15	[Comment on Cooperating Agencies Draft EIS for 2021 ROC on LTO]The Draft EIS Lacks Meaningful Analysis or Discussion of the Environmental Effects of the AlternativesThe SRS Contractors appreciate the monumental effort that is required for the analysis and production of these complex documents. At this stage however the Draft EIS is materially incomplete. The Draft EIS lacks meaningful analysis of the environmental effects of the alternatives. While most of the chapters on effects of the alternatives lack content or are partially incomplete the SRS Contractors seek to provide helpful feedback and comments on Reclamation's analysis as partners in CVP operations. As such the SRS Contractors request the opportunity to review a draft that contains sufficient analysis and detail to enable meaningful feedback and comments before the release of a public draft environmental impact statement.	Chapters in the Draft EIS are complete, and additional information is provided in the corresponding appendix. Please refer to Standard Response 1, Response to General Comments and Comments about Public Outreach, for additional information regarding the structure of the Draft EIS.

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79-16	[Comment on Cooperating Agencies Draft EIS for 2021 ROC on LTO]The Purpose and Need Section Should Omit References to the California Endangered Species ActChapter 2 of the Draft EIS states Reclamation requested reinitiation of the LTO consultation because of anticipated modifications to the previous Proposed Action due to "voluntary harmonization of CVP operating criteria with requirements of the [State Water Project] under the California Endangered Species Act." Draft EIS at 2-1. This statement should be supplemented to reflect Reclamation's position that the CVP is not subject to the requirement of the California Endangered Species Act (CESA). In the stayed litigation challenging the adequacy of the 2019 consultation California Natural Resources Agency v. Raimondo No. 1:20- cv-00426-JLT-EPG (E.D. Cal.) Reclamation in its motion to dismiss the fifth claim in the State of California's complaint extensively briefed its legal position that the CVP is not subject to state regulation and permitting under CESA. See Fed. Defs.' Mem. of Points and Authorities in Supp. of Mot. to Dismiss Fifth Claim included as Attachment A. The court has not decided the issue. The State and Reclamation reached an agreement to enter into the interim operations plan the motion was held in abeyance and the case was stayed. The Purpose and Need statement in the Draft EIS suggests that Reclamation is voluntarily complying with the requirements of CESA. However only Congress may waive the United States' sovereign immunity and Reclamation cannot voluntarily waive its immunity from regulation under CESA. The SRS Contractors agree with the comments of the San Luis Delta-Mendota Water Authority on this issue and urge Reclamation to reformulate its Purpose and Need statement without impermissibly submitting to regulation under CESA.	Reclamation and the CVP are not subject to requirements under CESA. Please see Standard Response 2, Related Regulatory Processes, regarding related regulatory processes.
79-17	[Comment on Cooperating Agencies Draft EIS for 2021 ROC on LTO]Alternatives in the Draft EIS Do Not Include Full Performance of Reclamation's Nondiscretionary Obligations Under the	Reclamation proposes to operate the CVP consistent with contractual obligations and agreements, as stated in the purpose and need. Please refer to Standard Response 4,

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	Sacramento River Settlement ContractsIn the Purpose and Need statement the Draft EIS describes the purpose of the action as continuing the operation of the CVP and the State Water Project (SWP) for authorized purposes in a manner that satisfies Reclamation's contractual obligations and agreements. Draft EIS at 2-1; see also id. at 1-5 (referring to the SRS Contractors' demands). The Draft EIS would benefit from more detail describing the different contractual obligations under the water service contracts the San Joaquin River Exchange Contracts and the Sacramento River Settlement Contracts (SRS Contracts). With respect to the SRS Contracts the Draft EIS should better explain that the contractual demands under the SRS Contracts are based on the SRS Contractors' underlying water rights in order to distinguish this nondiscretionary obligation compared to water service contract demands.More specifically the SRS Contractors and their predecessors-in-interest hold senior water rights to a significant portion of the Sacramento River during the irrigation season of April through Octoberwater rights that are senior to the CVP. When Reclamation applied for water rights to store water behind Shasta Dam the senior water right holders that became the SRS Contractors protested the application based on the project's effect on their senior water rights. After 20 years of negotiations and studies Reclamation and the SRS Contractors executed the original SRS Contracts in 1964 to resolve these protests. See Expert Report of Lee G. Bergfeld P.E. at 21-24 (Nov. 5 2018) in Nat. Res. Def. Council et al. v. Zinke No. 1:05-cv- 01207 LJO-EPG (E.D. Cal.) included as Attachment 2.In these contracts the SRS Contractors agreed to monthly limits on their diversions in part to facilitate the CVP's other goals. In return Reclamation agreed to make available stored water to the SRS Contractors during the drier summer months. Each contract specifies the monthly quantity of water to be diverted from the Sacramento River as "Base Supply" and "Project Water" amounts. These amounts may not be reduced	Alternatives Development for additional information regarding the formulation of alternatives with consideration of the purpose and need. For a description of Reclamation contractual obligations, please refer to Appendix C, Facilities Description.

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	unless it is a "Shasta Critical Year" as defined in the contracts during which contract amounts are reduced to 75 percent. In 2005 Reclamation and the SRS Contractors renewed the contracts for an additional 40 years.The CVP cannot operate in compliance with state water lawand thus cannot operate in compliance with federal lawunless Reclamation complies with the SRS Contracts and performs its agreements with the senior water right holders in the Sacramento Valley. See NRDC v. Kempthorne No. 1:05-cv-01207-LJO-GSA 2015 U.S. Dist. LEXIS 78036 at *35-36 (E.D. Cal. June 15 2015) (citing NRDC v. Kempthorne No. 1:05-cv-01207-OWW-TAG 2008 U.S. Dist. LEXIS 111588 at *86-105 (E.D. Cal. Nov. 19 2008)). Reclamation's performance of the SRS Contracts is nondiscretionary. See Nat. Res. Def. Council v. Norton 236 F. Supp. 3d 1198 1218 & n.8 (E.D. Cal. 2017). This includes releases from Shasta to accommodate the diversion of both Base Supply and Project Water in the amounts specified in Exhibit A to individual SRS Contracts.The 2019 LTO Consultation documents included more explanation on Reclamation's contractual obligations including the nondiscretionary obligations under the SRS Contracts. The SRS Contractors encourage Reclamation to include the same level of detail in the current documents. Furthermore operational actions should be linked to regulatory requirements and contractual obligations so reviewers are better able to distinguish between operational actions that are intended to comply with legal obligations versus operational actions that are voluntary and in the nature of enhancement and recovery.	
79-18	[Comment on Cooperating Agencies Draft EIS for 2021 ROC on LTO]Given the fundamental principles of the SRS Contracts Alternatives 3 and 4 do not satisfy Reclamation's nondiscretionary obligations. First Alternative 3Modified Natural Hydrographreorganizes Reclamation's statutory operational priorities listing furnishing of water for SRS Contract demands as	Please see Standard Response 4, Alternatives Formulation, regarding alternatives development and the range and feasibility of the alternatives evaluated in the EIS. Refer to Appendix E, Draft Alternatives, for a description of the screening process used to focus and refine each of the alternatives carried forward for detailed analysis.

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	the second most junior priority after instream flow requirements "storage requirements" and delivery of water for wildlife refuges among other things. Draft EIS at 3-62 E-137. Alternative 3 also provides that Reclamation would not begin deliveries until "operational plans show the targets in 7.1.1 and 7.1.2 are likely to be met or exceeded." Draft EIS at 3-63. This reordering of operational priorities is inconsistent with the nondiscretionary obligation under the SRS Contracts and the SRS Contractors remain opposed to any proposed operation of the CVP that is inconsistent with the terms of the SRS Contracts.	
79-19	[Comment on Cooperating Agencies Draft EIS for 2021 ROC on LTO]Further there are no "storage requirements" for the CVP; this phrase should be revised to "storage targets" or something similar. Although qualified by statements like "subject to modeling" the implementation of unimpaired flow objectives combined with storage targets pulse flows and the timing of operational and allocation decisions appears to be operationally infeasible. The SRS Contractors recognize that as part of the National Environmental Policy Act process an agency can examine an alternative that is outside the legal jurisdiction of the agency if it is reasonable. Notice of Proposed Rulemaking 88 Fed. Reg. 49924 49948-49 49977 (July 31 2023) (revising 40 C.F.R. 1502.14 to add language regarding discretion to consider alternatives outside the jurisdiction of the agency). However Alternative 3 appears to be operationally economically and legally infeasible and is thus beyond what is reasonable to foster informed decision making. Reclamation should expressly find that Alternative 3 should be eliminated from further consideration for these reasons.	Please see Standard Response 4, Alternatives Formulation, regarding alternatives development and the range and feasibility of the alternatives evaluated in the EIS. Refer to Appendix E, Draft Alternatives, for a description of the screening process used to focus and refine each of the alternatives carried forward for detailed analysis. The terminology of a “storage requirement” is appropriate to the alternative. Feasibility is informed by modeling in Appendix F, Modeling.
79-20	[Comment on Cooperating Agencies Draft EIS for 2021 ROC on LTO]Alternative 4 provides that if reductions to water service contracts would not achieve 2.0 million acre-feet of storage in Shasta Reservoir by the end of September then Reclamation would	Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding support and opposition to the project. As required by NEPA, the Draft EIS includes a range of reasonable alternatives, including

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	reduce releases for the Project Water component of the SRS Contracts so that only 60 percent of Contract Totals would be available for diversion. As stated above the performance of the SRS Contracts including the release of water for diversion of Project Water to satisfy the SRS Contract amounts is nondiscretionary and the SRS Contractors remain opposed to operational criteria that are inconsistent with the terms of the SRS Contracts.	Alternative 4. Please refer to Standard Response 4, Alternatives Formulation, regarding the legality and feasibility of the alternatives considered in the EIS. Reclamation operates consistent with applicable law, contracts, and agreements.
79-21	[Comment on Cooperating Agencies Draft EIS for 2021 ROC on LTO]The Voluntary Actions of the SRS Contractors Can Only Be a Component of Alternative 2Alternative 2 of the Draft EIS relies on voluntary actions by the SRS Contractors pursuant to their "Resolution Regarding Salmon Recovery Projects in the Sacramento River Watershed Actions Related to Shasta Reservoir Annual Operations and Engagement in the Ongoing Collaborative Sacramento River Science Partnership Effort" (Resolution). Draft EIS at 3-49. There are three explicit actions that the SRS Contractors committed to evaluating in a meet-and-confer process in addition to the 25 percent reduction in Contract Totals during Shasta Critical Years: (1) the scheduling of spring diversions; (2) voluntary compensated water transfers subject to Reclamation approval; and (3) smoothed SRS Contractor diversions for rice straw decomposition during the fall months. Draft EIS at E-87. However any mutually agreeable proposed actions resulting from the meet-and-confer discussion must be consistent with the terms of the SRS Contracts. Id.The SRS Contractors are committed to the ongoing discussions to refine and implement the Multi-Agency Consensus operational proposal currently represented as Alternative 2 consistent with the terms of the SRS Contracts and other voluntary agreements. However as explained above Alternative 4 expressly includes an operational component to reduce Project Water to meet end-of-September storage targets which is inconsistent with provisions in the SRS Contracts that allow Reclamation to furnish	In response to receiving this comment on the first Cooperating Agency Draft EIS, Reclamation removed the "meet and confer" language from the description of Alternative 4 in Appendix E, Draft Alternatives, and in Chapter 3, Alternatives, in the Public Draft EIS. Please refer to Standard Response 4, Alternatives Formulation, regarding the steps Reclamation followed in developing the reasonable range of alternatives evaluated in the EIS. Alternative 2 (Multi-Agency Consensus Alternative) represents actions and tradeoffs made to reach consensus among Reclamation, DWR, USFWS, CDFW, and NMFS. At this time, Reclamation believes that Alternative 2 meets the screening criteria, including the purpose and need. If Reclamation determines that modifications are needed to the alternative selected in the ROD, Reclamation will then determine whether additional environmental compliance is needed.

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	less than full contract amounts. Accordingly mutually agreeable actions under the SRS Contractor Resolution which is conditioned on full contract performance cannot reasonably be a component of Alternative 4 and should be omitted from this alternative.	
79-22	[Comment on Cooperating Agencies Draft EIS for 2021 ROC on LTO]The Draft EIS Misstates the Navigation Requirement at Wilkins SloughThe Draft EIS states that "the 1937 Act includes consideration for navigation at Wilkins Slough." Draft EIS at 3-5; see also id. at E-10. This is not an accurate description of the navigation requirement under the 1937 Act.Congress initially authorized the construction of certain CVP facilities under the Rivers and Harbors Act of 1935 (1935 Act). 49 Stat. 1028 1038. The 1935 Act mandated in relevant part that "the following works of improvement of rivers . . . are hereby adopted and authorized . . . in accordance with the plans recommended in the respective reports hereinafter designated and subject to the conditions set forth in such documents . . . Sacramento River California; Rivers and Harbors Committee Document Numbered 35 Seventy-third Congress . . . ." 50 Stat. 1028 1038. As such the 1935 Act incorporates by reference and expressly requires the implementation of the recommendations of the Rivers and Harbors Committee Document No. 35. This document is a 1934 report from the Army Corps of Engineers' Chief Engineer recommending to Congress that Kennett Dam (predecessor to Shasta Dam) "shall be operated so as to provide a minimum flow of 5000 cubic feet per second between Chico Landing and Sacramento." See CVP Documents Part I 544 548 (Committee Doc. 35 73rd Cong.).Congress re-authorized the CVP under the Rivers and Harbors Act of 1937 (1937 Act). 50 Stat. 844 850. This re-authorization mandated in relevant part that:[T]he $12000000 recommended for expenditure for a part of the Central Valley project California in accordance with the plans set forth in Rivers	Reclamation is a federal agency and follows federal law when operating the CVP, including the applicable provisions of the Rivers and Harbor Act as well as the Central Valley Project Improvement Act. While the original report supporting the 1935 CVP authorization recommended federal appropriations for the project "if the flow of the river is increased to the minimum flow of 5,000 cfs through operation of [Shasta] dam," the 1937 CVP authorization did not mandate this recommendation, but rather referred to the DOI's plans for the project. These plans included the 5,000 cfs minimum, but not as an absolute, rather as a flow that could be obtained through operation of the project for its primary intended purpose of water supply and expressly noted that flow could not be obtained in "extremely dry years." This suggests that Reclamation has discretion to reduce the 5,000 cfs "minimum" when necessary for other project purposes, provided that does not impact the goal of "improved navigation." Please see Appendix C, Facilities Description, for further detail.

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	and Harbors Committee Document Numbered 35 Seventy-third Congress and adopted and authorized by the provisions of section 1 of the Act of August 30 1935 (49 Stat. 1028 at 1038) . . . shall when appropriated be available for expenditure in accordance with the said plans of the Secretary of Interior instead of the Secretary of War. 50 Stat. 844 850. As such the 1937 Act also incorporates by reference and expressly requires the implementation of the recommended minimum flow of 5000 cubic feet per second between Chico Landing and Sacramento. There has been no subsequent action by Congress that has "discontinued" or otherwise changed this minimum navigation flow requirement. And the Central Valley Project Improvement Act did not amend the first priority of the CVP of river regulation navigation and flood control when it made irrigation and domestic uses coequal in second priority with fish and wildlife purposes. Central Valley Project Improvement Act of 1992 3406(a)-(b) Pub. L. No. 102-575 (1992).The SRS Contractors understand that Reclamation now considers the minimum requirement of 5000 cubic feet per second between Chico Landing and Sacramento to be discretionary as flows at Wilkins Slough are reduced to build storage in the fall and winter months. However to avoid arbitrary and capricious decision making the Draft EIS should accurately summarize the law and include an adequate explanation for why Reclamation considers this requirement to be discretionary.	
79-23	[Comment on Cooperating Agencies Draft EIS for 2021 ROC on LTO]Future Drafts Should Include Discussion and Analysis of the Uncertainty Associated with Temperature-Dependent Mortality EstimatesAlternative 3 uses modeled estimates of temperature-dependent mortality (TDM) of winter-run Chinook salmon as indicators for a temperature management plan. Draft EIS at 3-63 to 3-64. The SRS Contractors anticipate that the currently incomplete effects chapters will also include TDM estimates using the Martin	Reclamation discloses TDM model uncertainty in Attachment L.2, Sections L.2.1.2 and L.2.1.3. Zeug et al. (2023) reviewed the laboratory and field data used as inputs to estimate survival of winter-run Chinook salmon during egg incubation. There is uncertainty associated with both data sources and assumptions necessary to make model predictions. Authors reported finding significant uncertainty in the data used to parameterize temperature-egg survival models, likely the effect of collection

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	or Anderson models. Experts from Cramer Fish Sciences recently provided Reclamation with their approved pre-print article evaluating the uncertainty in the laboratory data and field-derived data used to model the TDM estimates and discussing the confidence and prediction intervals for the TDM estimates. See Steven C. Zeug Alex Constandache Bradley Cavallo Considerations for the Use of Laboratory-Based and Field Based Estimates of Environmental Tolerance in Water Management Decisions for an Endangered Salmonid bioRxiv 2023.08.23.554483; doi: https://doi.org/10.1101/2023.08.23.554483. Reclamation should incorporate information from this article and report confidence and prediction intervals when using TDM estimates to evaluate the effects of the proposed Shasta operations. There is considerable uncertainty associated with these estimates and proper context is necessary to consider the information. Reclamation should also fully explain that the TDM estimates are calculated not measured. The language should convey that mortality may be occurring because of other stressors besides temperature as is shown by low survival numbers at the Red Bluff screw traps in years when there are favorable temperatures in the spawning section of the Sacramento River.	purpose: Laboratory data were collected to evaluate survival under differing but constant temperatures; field data consists of five separate model inputs each with a level of uncertainty used in aggregate to estimate egg survival. Similar analyses in Appendix L, Attachment L.2, describe uncertainties associated with data sources and assumptions. Winter-run Chinook salmon egg mortality in the upper Sacramento River may be occurring due to stressors outside water temperature. Survival estimates at the RBDD RSTs during years with favorable conditions (water temperatures within tolerable range) have been low in the spawning reaches of the Sacramento River, data that support the assertion mortality may be a function of other environmental factors. Zeug, S. C., A. Constandache, B. J. Cavallo, and Cramer Fish Sciences. 2023. Considerations for the use of laboratory-based and field-based estimates of environmental tolerance in water management decisions for an endangered salmonid. bioRxiv (August 2023). Available: https://www.semanticscholar.org/paper/Considerations-for-the-use-of-laboratory-based-and-Zeug-Constandache/3ba2ae45e3e70d3cc5248d4ed794009572f20176.
79-24	[Comment on Cooperating Agencies Draft EIS for 2021 ROC on LTO]For the spring pulse flow component of Alternative 2 the SRS Contractors request clarification in the next draft that the spring pulse flows in sections 3.4.1.4 and 3.4.1.5 are not additive and for section 3.4.1.5 the SRS Contractors will reduce diversions to replace the 100000 acre-feet.	Please see Appendix E, Draft Alternatives, for further discussion. These actions are additive and subject to real-time coordination (SRG & SHOT), which SRSC is identified as a member in Alt 2.
79-25	[Comment on Cooperating Agencies Draft EIS for 2021 ROC on LTO]In section 5.1.2 describing the facilities on the Sacramento River Reclamation should include non-Project facilities on the McCloud and Pit Rivers that are owned and operated by Pacific Gas	This is a comment on the administrative draft EIS that Reclamation submitted for review to cooperating agencies. No revisions are necessary.

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	& Electric (PG&E) and that limit the flow and temperature of water into Shasta Reservoir. Similarly Reclamation should clarify in section 12.1.2.1 that PG&E facilities blocked access upstream by winter-run Chinook salmon before the construction of Shasta Dam.Additionally for section O.1.3.4 the SRS Contractors are in the process of confirming whether the list of screened diversions is current with the most recent projects.	
79-26	[Comment on Cooperating Agencies 2nd Draft EIS]The Second Draft EIS Does Not Address Many of the SRS Contractors' Previous Comments.On October 31 2023 the SRS Contractors submitted comments to the Cooperating Agencies Draft Environmental Impact Statement (Draft EIS) the prior iteration of the Second Draft EIS. Among other comments the SRS Contractors asked the U.S. Bureau of Reclamation (Reclamation) to remove a reference in Alternative 4 to voluntary actions by the SRS Contractors pursuant to their "Resolution Regarding Salmon Recovery Projects in the Sacramento River Watershed Actions Related to Shasta Reservoir Annual Operations and Engagement in the Ongoing Collaborative Sacramento River Science Partnership Effort" (Resolution). Such reference appears to have been omitted from the Second Draft EIS. The SRS Contractors thank Reclamation for adopting this change.Although much of the analysis of environmental impacts has been added to the Second Draft EIS many of the SRS Contractors' remaining comments on specific sections of the first draft however have not been addressed in the Second Draft EIS. The SRS Contractors incorporate those comments herein and continue to request that Reclamation address each comment. [Footnote 1: Those comments as well as additional comments raised herein are also included in the comment matrix submitted to Reclamation herewith.]	Reclamation carefully reviewed and incorporated feedback, as appropriate, from the cooperating agencies on early drafts of the EIS, which is reflected in the 2024 Public Draft EIS. Comments not reflected in the Public Draft EIS were evaluated, but Reclamation determined that revisions in response to the comment were not appropriate. Reclamation believes that the 2024 Public Draft EIS provides a meaningful analysis of potential direct, indirect, and cumulative impacts of the alternatives.
79-27	[Comment on Cooperating Agencies 2nd Draft EIS for 2021 ROC on LTO]Future Drafts Should Include Discussion and Analysis of the	Section L.2.1.2, Assumptions/Uncertainty, was added to Attachment L.2 from comment 79-10. Zeug et al. (2023)

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	Uncertainty Associated with Temperature-Dependent Mortality Estimates.The SRS Contractors noted in their October 31 2023 letter that the Draft EIS uses estimates of temperature-dependent mortality (TDM) of winter-run Chinook salmon as indicators for a temperature management plan. The Second Draft EIS includes the same estimates relying on the Martin or Anderson models to analyze project alternatives. See e.g. Second Draft EIS 3.5.1.3 at pp. 62-63; id. at App'x O O.1.3.1 pp. O-25 to O-26; id. at App'x O part 5 at pp. 5- 6 39. Such analysis of TDM should include the same discussion and analysis of uncertainty associated with TDM estimates that the SRS Contractors offered in their prior letter. Experts from Cramer Fish Sciences recently provided Reclamation with their approved pre-print article evaluating the uncertainty in the laboratory data and field-derived data used to model the TDM estimates and discussing the confidence and prediction intervals for the TDM estimates. See Steven C. Zeug Alex Constandache Bradley Cavallo Considerations for the Use of Laboratory- Based and Field Based Estimates of Environmental Tolerance in Water Management Decisions for an Endangered Salmonid bioRxiv 2023.08.23.554483; doi: https://doi.org/10.1101/ 2023.08.23.554483.Reclamation should incorporate information from this article and report confidence and prediction intervals when using TDM estimates to evaluate the effects of the proposed Shasta operations. There is considerable uncertainty associated with these estimates and proper context is necessary to consider the information. Reclamation should also fully explain that the TDM estimates are calculated not measured. The language should convey that mortality may be occurring because of other stressors besides temperature as is shown by low survival numbers at the Red Bluff screw traps in years when there are favorable temperatures in the spawning reaches of the Sacramento River.	reviewed the laboratory and field data used as inputs to estimate survival of winter-run Chinook salmon during egg incubation. There is uncertainty associated with both data sources and assumptions necessary to make model predictions. Authors reported finding significant uncertainty in the data used to parameterize temperature-egg survival models, likely the effect of collection purpose: laboratory data were collected to evaluate survival under differing but constant temperatures; field data consists of five separate model inputs each with a level of uncertainty used in aggregate to estimate egg survival. Similar analyses in Appendix L, Attachment L.2 describe uncertainties associated with data sources and assumptions. Winter-run Chinook salmon egg mortality in the upper Sacramento River may be occurring due to stressors outside water temperature. Survival estimates at the RBDD RSTs during years with favorable conditions (water temperatures within tolerable range) have been low in the spawning reaches of the Sacramento River; data that support the assertion mortality may be a function of other environmental factors. The TDM model was derived from scientific literature and is adequate for NEPA purposes. Please see Standard Response 5, Adequacy of Analysis and Mitigation. Zeug, S. C., A. Constandache, B. J. Cavallo, and Cramer Fish Sciences. 2023. Considerations for the use of laboratory-based and field-based estimates of environmental tolerance in water management decisions for an endangered salmonid. bioRxiv (August 2023). Available: https://www.semanticscholar.org/paper/Considerations-for-the-use-of-laboratory-based-and-Zeug-Constandache/3ba2ae45e3e70d3cc5248d4ed794009572f20176.

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79-28	[Comment on Cooperating Agencies 2nd Draft EIS for 2021 ROC on LTO]Additional Time is Necessary to Review and Analyze the Substantial New Material Included in the Second Draft EIS.Reclamation has added significant amounts of new information in the Second Draft EIS including extensive new modeling results. The SRS Contractors have initiated a review of the new information and offer several new comments based on their cursory review of the SDEIS but the review was not comprehensive. The SRS Contractors note that Appendix O (Fish Aquatic Resources Technical Appendix) to the original Cooperating Agencies Draft EIS has been expanded significantly and Appendix F to the Second Draft EIS now includes an extensive modeling report. The subject matter of both appendices is highly relevant to the SRS Contractors' interests and the SRS Contractors are in the process of carefully reviewing both sections.Based on the ongoing review of these substantial sections the SRS Contractors may supplement these comments before another draft is available. Further the SRS Contractors understand that the Second Draft EIS is an interim document and that they will have an additional opportunity to comment on the final draft before Reclamation certifies a final environmental impact statement. In that spirit the SRS Contractors appreciate Reclamation's efforts to solicit the SRS Contractors' input in the environmental review process and welcome further discussion with Reclamation.	Reclamation appreciates the comments submitted by the Sacramento River Settlement contractors throughout the environmental review process. Please refer to Standard Response 1, General Comments and Comments about Public Outreach, regarding the duration of the comment period.
79-29	ATTACHMENT 4[See original comment for Attachment D - Economic Impacts of the 202022 Drought on California Agriculture]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
79-30	ATTACHMENT 5[See original comment for Attachment E - Drought and California's Agriculture]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
79-31	ATTACHMENT 6[See original comment on Attachment F - court case]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are

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		addressed in these responses to comments.
79-32	[2021 LTO Cooperating Agencies Draft EIS Comment Matrix]Chapter Number/ Appendix Letter: Chapter 2Section Number and Title: 2.1Paragraph (P) # Sentence (S) # Figure # or Table #:Page Number: 2Comment/Text Insert: Chapter 2 of the Cooperating Agencies Second Draft Environmental Impact Statement (Second Draft EIS) for the Long-Term Operation (LTO) of the Central Valley Project (CVP) states that the U.S. Bureau of Reclamation (Reclamation) requested reinitiation of the LTO consultation because of anticipated modifications to the previous Proposed Action due to "voluntary harmonization of CVP operating criteria with requirements of the [State Water Project] under the California Endangered Species Act." This statement should be [s]upplemented to reflect Reclamation's position that the CVP is not subject to the requirement of the California Endangered Species Act (CESA). In the stayed litigation challenging the adequacy of the 2019 consultation California Natural Resources Agency v. Raimondo No. 1:20-cv-00426-JLT-EPG (E.D. Cal.) Reclamation in its motion to dismiss the fifth claim in the State of California's complaint extensively briefed its legal position that the CVP is not subject to state regulation and permitting under CESA. See Fed. Defs.' Mem. of Points and Authorities in Supp. of Mot. to Dismiss Fifth Claim included as Attachment A to Oct. 31 2023 SRS Contractors' comment letter on the Cooperating Agencies Draft Environmental Impact Statement (Draft EIS). The court has not decided the issue. The State and Reclamation reached an agreement to enter into the interim operations plan the motion was held in abeyance and the case was stayed. The Purpose and Need statement in the Draft EIS suggests that Reclamation is voluntarily complying with the requirements of CESA. However only Congress may waive the United States' sovereign immunity and Reclamation cannot voluntarily waive its immunity from	Reclamation and the CVP are not subject to requirements under CESA. Please see Standard Response 2, Related Regulatory Processes, regarding related regulatory processes.

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	regulation under CESA. The SRS Contractors agree with the comments of the San Luis Delta-Mendota Water Authority on this issue and urge Reclamation to reformulate its Purpose and Need statement without impermissibly submitting to regulation under CESA.	
79-33	[2021 LTO Cooperating Agencies Draft EIS Comment Matrix]Chapter Number/ Appendix Letter: Chapter 3Section Number and Title: 3.5Paragraph (P) # Sentence (S) # Figure # or Table #: Page Number: 61Comment/Text Insert: Given the fundamental principles of the SRS Contracts set forth in the SRS Contractors' Oct. 31 2023 comment letter Alternatives 3 and 4 do not satisfy Reclamation's nondiscretionary obligations. First Alternative 3Modified Natural Hydrographreorganizes Reclamation's statutory operational priorities listing furnishing of water for SRS Contract demands as the second most junior priority after instream flow requirements "storage requirements" and delivery of water for wildlife refuges among other things.	Please see Standard Response 4, Alternatives Formulation, regarding alternatives development and the range and feasibility of the alternatives evaluated in the EIS. Refer to Appendix E, Draft Alternatives, for a description of the screening process used to focus and refine each of the alternatives carried forward for detailed analysis.
79-34	[2021 LTO Cooperating Agencies Draft EIS Comment Matrix]Chapter Number/ Appendix Letter:Chapter 3Section Number and Title:3.5Paragraph (P) # Sentence (S) # Figure # or Table #:Page Number: 61Comment/Text Insert: Alternative 3 also provides that Reclamation would not begin deliveries until "operational plans show the targets in 7.1.1 and 7.1.2 are likely to be met or exceeded." This reordering of operational priorities is inconsistent with the nondiscretionary obligation under the SRS Contracts as set forth in the SRS Contractors' Oct. 31 2023 comment letter and the SRS Contractors remain opposed to any proposed operation of the CVP that is inconsistent with the terms of the SRS Contracts.	NEPA requires a range of reasonable alternatives to fully inform decisions. Reclamation believes that it is appropriate to include alternatives with different approaches to Shasta Reservoir water temperature management. Refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of alternatives to ensure a range of reasonable alternatives.
79-35	[2021 LTO Cooperating Agencies Draft EIS Comment Matrix]Chapter Number/ Appendix Letter: Chapter 3Section Number and Title: 3.5Paragraph (P) # Sentence (S) # Figure # or	Please refer to Standard Response 4, Alternatives Formulation, regarding alternatives development and the range and feasibility of the alternatives evaluated in the EIS.

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	Table #:Page Number: 61-72Comment/Text Insert:There are no "storage requirements" for the CVP; this phrase should be revised to "storage targets" or something similar. Although qualified by statements like "subject to modeling" the implementation of unimpaired flow objectives combined with storage targets pulse flows and the timing of operational and allocation decisions appears to be operationally infeasible. The SRS Contractors recognize that as part of the National Environmental Policy Act process an agency can examine an alternative that is outside the legal jurisdiction of the agency if it is reasonable. Notice of Proposed Rulemaking 88 Fed. Reg. 49924 49948-49 49977 (July 31 2023) (revising 40 C.F.R. 1502.14 to add language regarding discretion to consider alternatives outside the jurisdiction of the agency). However Alternative 3 appears to be operationally economically and legally infeasible and is thus beyond what is reasonable to foster informed decision making. Reclamation should expressly find that Alternative 3 should be eliminated from further consideration for these reasons.	The terminology of a "Storage Requirement" is appropriate to the alternative. Feasibility is informed by modeling in Appendix F, Modeling.
79-36	[2021 LTO Cooperating Agencies Draft EIS Comment Matrix]Chapter Number/ Appendix Letter: Chapter 3Section Number and Title: 3.6.1.1Paragraph (P) # Sentence (S) # Figure # or Table #:Page Number: 68Comment/Text Insert: Alternative 4 provides that if reductions to water service contracts would not achieve 2.0 million acre-feet of storage in Shasta Reservoir by the end of September then Reclamation would reduce releases for the Project Water component of the SRS Contracts so that only 60 percent of Contract Totals would be available for diversion. As stated above the performance of the SRS Contracts including the release of water for diversion of Project Water to satisfy the SRS Contract amounts is nondiscretionary and the SRS Contractors remain opposed to operational criteria that are inconsistent with the terms of the SRS Contracts.	Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, regarding support and opposition to the project. As required by NEPA, the Draft EIS includes a range of reasonable alternatives, including Alternative 4. Please refer to Standard Response 4, Alternatives Formulation, regarding the legality and feasibility of the alternatives considered in the EIS. Reclamation operates consistent with applicable law, contracts, and agreements.

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79-37	[2021 LTO Cooperating Agencies Draft EIS Comment Matrix]Chapter Number/ Appendix Letter: Chapter 3Section Number and Title: 3.1.1.1Paragraph (P) # Sentence (S) # Figure # or Table #:Page Number: 5Comment/Text Insert: The Second Draft EIS states that "the 1937 Act includes consideration for navigation at Wilkins Slough." Second Draft EIS at 3-5. This is not an accurate description of the navigation requirement under the 1937 Act. Congress initially authorized the construction of certain CVP facilities under the Rivers and Harbors Act of 1935 (1935 Act). 49 Stat. 1028 1038. The 1935 Act mandated in relevant part that the following works of improvement of rivers . . . are hereby adopted and authorized . . . in [a]ccordance with the plans recommended in the respective reports hereinafter designated and subject to the conditions set forth in such documents . . . Sacramento River California; Rivers and Harbors Committee Document Numbered 35 seventy-third Congress . . . ." 50 Stat. 1028 1038. As such the 1935 Act incorporates by reference and expressly requires the implementation of the recommendations of the Rivers and Harbors Committee Document No. 35. This document is a 1934 report from the Army Corps of Engineers' Chief Engineer recommending to Congress that Kennett Dam (predecessor to Shasta Dam) "shall be operated so as to provide a minimum flow of 5000 cubic feet per second between Chico Landing and Sacramento." See CVP Documents Part I 544 548 (Committee Doc. 35 73rd Cong.). Congress re-authorized the CVP under the Rivers and Harbors Act of 1937 (1937 Act). 50 Stat. 844 850. This re-authorization mandated in relevant part that: "[T]he $12000000 recommended for expenditure for a part of the Central Valley project California in accordance with the plans set forth in Rivers and Harbors Committee Document Numbered 35 Seventy-third Congress and adopted and authorized by the provisions of section 1 of the Act of August 30 1935 (49 Stat. 1028 at 1038) . . . shall when appropriated be available for expenditure in accordance with the said plans of	Reclamation is a federal agency and follows federal law when operating the CVP, including the applicable provisions of the Rivers and Harbor Act as well as the Central Valley Project Improvement Act. While the original report supporting the 1935 CVP authorization recommended federal appropriations for the project "if the flow of the river is increased to the minimum flow of 5,000 cfs through operation of [Shasta] dam," the 1937 CVP authorization did not mandate this recommendation, but rather referred to the DOI's plans for the project. These plans included the 5,000 cfs minimum, but not as an absolute, rather as a flow that could be obtained through operation of the project for its primary intended purpose of water supply and expressly noted that flow could not be obtained in "extremely dry years." This suggests that Reclamation has discretion to reduce the 5,000 cfs "minimum" when necessary for other project purposes, provided that does not impact the goal of "improved navigation." Please see Appendix C, Facilities Description, for further detail.

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	the Secretary of Interior instead of the Secretary of War." 50 Stat. 844 850. As such the 1937 Act also incorporates by reference and expressly requires the implementation of the recommended minimum flow of 5000 cubic feet per second between Chico Landing and Sacramento. There has been no subsequent action by Congress that has "discontinued" or otherwise changed this minimum navigation flow requirement. And the Central Valley Project Improvement Act did not amend the first priority of the CVP of river regulation navigation and flood control when it made irrigation and domestic uses coequal in second priority with fish and wildlife purposes. Central Valley Project Improvement Act of 1992 3406(a)-(b) Pub. L. No. 102-575 (1992).The SRS Contractors understand that Reclamation now considers the minimum requirement of 5000 cubic feet per second between Chico Landing and Sacramento to be discretionary as flows at Wilkins Slough are reduced to build storage in the fall and winter months. However to avoid arbitrary and capricious decision making the Second Draft EIS should accurately summarize the law and include an adequate explanation for why Reclamation considers this requirement to be discretionary.	
79-38	[2021 LTO Cooperating Agencies Draft EIS Comment Matrix]Chapter Number/ Appendix Letter: Chapter 3Section Number and Title: 3.5.1.3Paragraph (P) # Sentence (S) # Figure # or Table #:Page Number: 62-63Comment/Text Insert: Alternative 3 uses modeled estimates of temperature-dependent mortality (TDM) of winter-run Chinook salmon as indicators for a temperature management plan. Second Draft EIS Ch. 3 at 62 to 63. The SRS Contractors anticipate that the currently incomplete effects chapters will also include TDM estimates using the Martin or Anderson models. Experts from Cramer Fish Sciences recently provided Reclamation with their approved pre-print article evaluating the uncertainty in the laboratory data and field-derived	This comment was considered in preparation of the Draft EIS when it was submitted as a comment on the cooperating agencies draft EIS. Refer to the discussion in Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.1.3.1 under the heading Water Temperature. This section incorporates consideration of Zeug et al. 2023. Zeug, S. C., A. Constandache, B. J. Cavallo, and Cramer Fish Sciences. 2023. Considerations for the use of laboratory-based and field-based estimates of environmental tolerance in water management decisions for an endangered salmonid. bioRxiv (August 2023). Available:

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	data used to model the TDM estimates and discussing the confidence and prediction intervals for the TDM estimates. See Steven C. Zeug Alex Constandache Bradley Cavallo Considerations for the Use of Laboratory-Based and Field Based Estimates of Environmental Tolerance in Water Management Decisions for an Endangered Salmonid bioRxiv 2023.08.23.554483; doi:https://doi.org/10.1101/2023.08.23.554483. Reclamation should incorporate information from this article and report confidence and prediction intervals when using TDM estimates to evaluate the effects of the proposed Shasta operations. There is considerable uncertainty associated with these estimates and proper context is necessary to consider the information. Reclamation should also fully explain that the TDM estimates are calculated not measured. The language should convey that mortality may be occurring because of other stressors besides temperature as is shown by low survival numbers at the Red Bluff screw traps in years when there are favorable temperatures in the spawning section of the Sacramento River.	https://www.semanticscholar.org/paper/Considerations-for-the-use-of-laboratory-based-and-Zeug-Constandache/3ba2ae45e3e70d3cc5248d4ed794009572f20176.
79-39	[2021 LTO Cooperating Agencies Draft EIS Comment Matrix]Chapter Number/ Appendix Letter: Chapter 3Section Number and Title: 3.4.1.4 3.4.1.5Paragraph (P) # Sentence (S) # Figure # or Table #:Page Number: 46Comment/Text Insert: For the spring pulse flow component of Alternative 2 the SRS Contractors request clarification in the next draft that the spring pulse flows in sections 3.4.1.4 and 3.4.1.5 are not additive and for section 3.4.1.5 the SRS Contractors will reduce diversions to replace the 100000 acre-feet.	These components (Sacramento River Pulse Flow (150TAF and SRSC VA Spring Pulse Flows 100TAF) described in Alternative 2 are additive for a total of 250 TAF. These actions are subject to real-time coordination through SRG & SHOT groups which SRSC is identified as a member.
79-40	[2021 LTO Cooperating Agencies Draft EIS Comment Matrix]Chapter Number/ Appendix Letter: Chapter 5Section Number and Title: 5.1.2Paragraph (P) # Sentence (S) # Figure # or Table #:Page Number: 5-1Comment/Text Insert: In section 5.1.2 describing the facilities on the Sacramento River Reclamation	This is a comment on the administrative draft EIS that Reclamation submitted for review to cooperating agencies. No revisions are necessary.

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	should include non-Project facilities on the McCloud and Pit Rivers that are owned and operated by Pacific Gas & Electric (PG&E) and that limit the flow and temperature of water into Shasta Reservoir.	
79-41	[2021 LTO Cooperating Agencies Draft EIS Comment Matrix]Chapter Number/ Appendix Letter: Chapter 12Section Number and Title: 12.1.2.1Paragraph (P) # Sentence (S) # Figure # or Table #:Page Number: 12-6 to 12-7Comment/Text Insert: Reclamation should clarify in section 12.1.2.1 that PG&E facilities blocked access upstream by winter-run Chinook salmon before the construction of Shasta Dam.	This is a comment on the administrative draft EIS that Reclamation submitted for review to cooperating agencies. No revisions are necessary.
79-42	[2021 LTO Cooperating Agencies Draft EIS Comment Matrix]Chapter Number/ Appendix Letter: Appendix OSection Number and Title: O.1.3.5Paragraph (P) # Sentence (S) # Figure # or Table #:Page Number: O-45 to O-46Comment/Text Insert: The SRS Contractors are in the process of confirming whether the list of screened diversions is current with the most recent projects.	This is not a substantive comment on the Draft EIS. No response needed. Reclamation appreciates the information.
79-43	[2021 LTO Cooperating Agencies Draft EIS Comment Matrix]Chapter Number/ Appendix Letter: Appendix OSection Number and Title: O.1.3.1Paragraph (P) # Sentence (S) # Figure # or Table #:Page Number: O-25 to O-26Comment/Text Insert: The SRS Contractors noted in their October 31 2023 letter that the Draft EIS uses estimates of temperature-dependent mortality (TDM) of winter-run Chinook salmon as indicators for a temperature management plan. The Second Draft EIS includes the same estimates relying on the Martin or Anderson models throughout the document. See e.g. Second Draft EIS App'x O O.1.3.1 pp. O-25 to O-26; id. at App'x O part 5 at pp. 5-6 39. Appendix O's analysis for example should include the same discussion and analysis of uncertainty associated with TDM estimates that the SRS Contractors offered in their prior letter. Experts from Cramer Fish Sciences recently provided Reclamation with their approved pre-print article evaluating the uncertainty in	Reclamation discloses TDM model uncertainty in Attachment L.2, Sections L.2.1.2 and L.2.1.3. Zeug et al. (2023) reviewed the laboratory and field data used as inputs to estimate survival of winter-run Chinook salmon during egg incubation. There is uncertainty associated with both data sources and assumptions necessary to make model predictions. Authors reported finding significant uncertainty in the data used to parameterize temperature-egg survival models, likely the effect of collection purpose: Laboratory data were collected to evaluate survival under differing but constant temperatures; field data consists of five separate model inputs each with a level of uncertainty used in aggregate to estimate egg survival. Similar analyses in Appendix L, Attachment L.2, describe uncertainties associated with data sources and assumptions. Winter-run Chinook salmon egg mortality in the upper Sacramento River may be occurring due to stressors outside water temperature. Survival estimates

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	the laboratory data and field-derived data used to model the TDM estimates and discussing the confidence and prediction intervals for the TDM estimates. See Steven C. Zeug Alex Constandache Bradley Cavallo Considerations for the Use of Laboratory-Based and Field Based Estimates of Environmental Tolerance in Water Management Decisions for an Endangered Salmonid bioRxiv 2023.08.23.554483; doi: https://doi.org/10.1101/2023.08.23.554483. Reclamation should incorporate information from this article and report confidence and prediction intervals when using TDM estimates to evaluate the effects of the proposed Shasta operations. There is considerable uncertainty associated with these estimates and proper context is necessary to consider the information. Reclamation should also fully explain that the TDM estimates are calculated not measured. The language should convey that mortality may be occurring because of other stressors besides temperature as is shown by low survival numbers at the Red Bluff screw traps in years when there are favorable temperatures in the spawning reaches of the Sacramento River.	at the RBDD RSTs during years with favorable conditions (water temperatures within tolerable range) have been low in the spawning reaches of the Sacramento River, data that support the assertion mortality may be a function of other environmental factors. The TDM model was derived from scientific literature and are adequate for NEPA purposes. Please see Standard Response 5, Adequacy of Analysis and Mitigation. Zeug, S. C., A. Constandache, B. J. Cavallo, and Cramer Fish Sciences. 2023. Considerations for the use of laboratory-based and field-based estimates of environmental tolerance in water management decisions for an endangered salmonid. bioRxiv (August 2023). Available: https://www.semanticscholar.org/paper/Considerations-for-the-use-of-laboratory-based-and-Zeug-Constandache/3ba2ae45e3e70d3cc5248d4ed794009572f20176.
79-44	[2021 LTO Cooperating Agencies Draft EIS Comment Matrix]Chapter Number/ Appendix Letter: Appendix OSection Number and Title: O.1.3.3Paragraph (P) # Sentence (S) # Figure # or Table #:Page Number: O-27 to O-28Comment/Text Insert: In Appendix O describing the facilities on the Sacramento River Reclamation should include non-Project facilities on the McCloud and Pit Rivers that are owned and operated by Pacific Gas & Electric (PG&E) and that limit the flow and temperature of water into Shasta Reservoir. Reclamation should clarify that PG&E facilities blocked access upstream by winter-run Chinook salmon before the construction of Shasta Dam.	This is a comment on the administrative draft EIS that Reclamation submitted for review to cooperating agencies. No revisions are necessary.

Table 4-80. Letter No. 80

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80-1	September 9 2024 VIA EMAILU.S. Bureau of Reclamation Bay-Delta Plan Office Attention: Tim Warner801 I Street Suite 140Sacramento CA 95814-2536 Email: sha-MPR-BDO@usbr.gov Re: Draft Environmental Impact Statement for the Long-Term Operations of the Central Valley Project Dear Mr. Warner: The San Luis & Delta-Mendota Water Authority Westlands Water Authority Del Puerto Water District Henry Miller Reclamation District 2131 and San Joaquin River Exchange Contractors Water Authority (collectively "Water Authority") appreciate the opportunity to provide these comments in response to the U.S. Bureau of Reclamation's ("Reclamation") Draft Environmental Impact Statement for the Long-Term Operations of the Central Valley Project dated July 2024 ("Draft EIS"). The Water Authority is among the local agencies Reclamation has identified as a cooperating agency and provides input on the Draft EIS through this role.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
80-2	Through this ongoing National Environmental Policy Act ("NEPA") process Reclamation will be making policy decisions on a matter of vital importance to the future of California including its protected fish and wildlife species millions of people and millions of acres of prime farmland. The Water Authority operates key Central Valley Project ("CVP") infrastructure and its member agencies depend upon the CVP as the principal source of water they provide to users within their service areas. That water supply serves approximately 1.2 million acres of agricultural lands within areas of San Joaquin Stanislaus Merced Fresno Kings San Benito and Santa Clara Counties a portion of the water supply for nearly 2 million people including in urban areas within Santa Clara County referred to as the "Silicon Valley" and millions of waterfowl that depend upon nearly 200000 acres of managed wetlands and other critical habitat	Reclamation appreciates the concerns expressed by the comment. Please refer to Chapter 5, Water Supply, and Appendix H, Water Supply Technical Appendix, regarding potential effects on water supply from the alternatives. Refer to Standard Response 4, Alternatives Formulation, for the rigorous approach Reclamation undertook in formulating alternatives to ensure a range of reasonable alternatives were evaluated. Water Supply impacts and protection of listed species are among the key considerations that will be guiding the selection in the ROD of the alternative to be implemented.

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	within the largest contiguous wetland in the western United States. A list of the Water Authority's member agencies is attached as Exhibit A. Over the last thirty years the Water Authority's member agencies and the region they serve have suffered a dramatic decline in the volume and reliability of CVP water supplies provided through annual contract allocations. That decline has resulted from increasing regulatory restrictions on CVP operations that reduce the water supply available for delivery under a given set of hydrological conditions. The loss of supply suffered by CVP contractors located south of the Delta has been disproportionately large; agricultural repayment and water service contractors south of the Delta receive the lowest average annual allocations of any group of CVP contractors with commensurate harm being experienced by the communities reliant on this supply including some of the most economically underdeveloped communities in California. [Footnote 1: See Figure 5 at https://www.census.gov/content/dam/Census/library/publications/2023/acs/acsbr-016.pdf (Page 7 of 15).] Any reasonable plan for future CVP operations would account for and seek to avoid further harm to an already distressed region. Yet the preferred alternative identified in the Draft EIS Alternative 2b once again concentrates further losses of supply on these contractors and the region they serve. While there are many reasons for rejecting Alternative 2 (including variant 2b) the disproportionately large reduction in CVP water supply Alternative 2 would inflict on the region served by the Water Authority's member agencies is reason enough to reject it.	
80-3	The Water Authority recognizes that Alternative 2 does include implementation of the Healthy Rivers and Landscapes program ("HRL Program") previously referred to as the "Voluntary Agreements." The Water Authority is supportive of the HRL Program and the Final EIS and Record of Decision should contain sufficient analysis to allow the HRL Program to be implemented if	Please refer to Chapter 3, Alternatives, and Appendix E, Draft Alternatives, for a detailed description of the components for each of the alternative analyzed in the DEIS. Please also see Standard Response 10, Voluntary Agreements, for a discussion on the HRL Program.

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	approved by the State Water Resources Control Board. But Reclamation's NEPA analysis must comply with NEPA requirements and describe which components of the preferred alternative and other alternatives are components of the HRL Program and which components are something else actions to "harmonize operations of the CVP and SWP" or actions to comply with federal Endangered Species Act ("ESA") requirements. Without understanding the "need" for the various components of the alternatives the public cannot understand the difference in impacts from the same.	
80-4	Notwithstanding the Water Authority's support of the HRL Program issues with the NEPA analysis in the Draft EIS warrant these significant comments. The Water Authority provides eight main comments on the following topics: (1) the Draft EIS does not adequately respond to the Water Authority's prior comments on the Draft EIS; (2) actions proposed with the intent to benefit fish should reflect the best available science and the expected benefits of each alternative should be quantified for comparison; (3) the alternatives analysis is incomplete; (4) the Draft EIS does not adequately address environmental impacts to south-of-Delta communities and resources; (5) potential changes to Trinity River Division operations should be included in the cumulative effects analysis; (6) NEPA requires a more robust evaluation of the feasibility of mitigation measure AG- 1; (7) NEPA requires Reclamation to determine if adverse impacts from loss of water supply can be avoided through mitigation; and (8) durable legally defensible environmental review is in the collective interests of the federal agencies and water users. Additional detailed comments on the Draft EIS are provided in the spreadsheet submitted with this letter as Exhibit B.	Reclamation carefully reviewed and incorporated feedback, as appropriate, from the cooperating agencies on early drafts of the EIS, which is reflected in the 2024 Public Draft EIS. Comments not reflected in the Public Draft EIS were evaluated, but Reclamation did not consider it appropriate to revise the text in response to the comments. Reclamation believes that the 2024 Public Draft EIS provides a meaningful analysis of potential direct, indirect, and cumulative impacts of the alternatives. Reclamation also believes the Draft EIS is legally adequate. Chapters 4–22 and their associated technical appendices specifically discuss potential impacts on environmental resources south-of-the Delta. As shown in Chapter 1, Introduction, and Chapter 2, Section 2.2, the Study Area location and description includes the CVP and SWP service areas south of the Delta. Refer to Standard Response 4, Alternatives Formulation, for a description of the process used to identify, evaluate, refine, and select a reasonable range of alternatives to be evaluated in the LTO EIS. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis in the EIS,

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		including the use of reliable data to identify potential adverse impacts and to formulate effective mitigation measures consistent with the requirements of NEPA. The Draft EIS alternatives include continued implementation of the 2000 Trinity ROD. Please refer to Standard Response 8, Trinity River Division, regarding the steps for proposed future considerations of modifications to Trinity River Division operations.
80-5	1. The Draft EIS Does Not Adequately Respond to the Water Authority's Comments on the Administrative Versions of the Draft EIS The Water Authority submitted comments dated October 16 2023 and April 19 2024 on earlier administrative versions of the Draft EIS. Many of the comments in those two letters are still applicable to the Draft EIS. We incorporate by reference our comments made in the October 16 and April 19 letters and the attachments thereto. We briefly reiterate three of those prior comments in this letter.	Reclamation appreciates the review of the cooperating agency draft documents and the comments submitted by the Water Authority throughout this environmental review process. Reclamation reviewed and considered all comments submitted on the cooperating agency draft versions of the Draft EIS.
80-6	First the description of Alternative 2 (including Alternative 2b) in the Draft EIS still suggests that Reclamation will operate the CVP to conform to the standards and requirements of the California Endangered Species Act ("CESA") and the determinations of the California Department of Fish and Wildlife ("CDFW"). The Draft EIS says: "Alternative 2B was developed through a multi-agency consensus process including California Department of Fish and Wildlife DWR NMFS and USFWS Alternative 2 incorporates the Delta criteria proposed in DWR's Incidental Take Permit for the Delta facilities of the SWP to harmonize operations of the CVP and SWP." (Draft EIS at 1-3.) Any newly adopted changes to the operating regime for the CVP must make clear that harmonizing or reconciling CVP and SWP operations must not and will not result in imposing CESA requirements or standards on the CVP. The CVP is	Alternative 2 actions were developed to voluntarily harmonize operational requirements of the CVP with CESA requirements for the SWP as appropriate and consistent with Reclamation's authorities. As stated in the EIS, although Reclamation and DWR strive for a coordinated operation of the CVP and SWP, Reclamation and the CVP are not subject to requirements under CESA. Please refer to Standard Response 2, Related Regulatory Responses, regarding the Bureau of Reclamation's compliance with applicable laws and regulations.

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	not subject to regulation under CESA and Reclamation has no authority to voluntarily submit to CESA regulation. The CVP operating criteria should be clear that the CVP will not be operated to meet requirements and standards developed under CESA.	
80-7	Second the Draft EIS should be but has not been updated to clearly explain how each alternative meets the three-prong purpose and need described in Chapter 2. (Draft EIS at 2-2.) The Draft EIS should include an explanation whether the proposed components of each alternative are legally mandated or discretionary and identify the applicable legal authority for each. While Appendix C of the Draft EIS describes statutory regulatory and contractual requirements applicable to the CVP generally nothing in the Draft EIS relates those requirements to the specific changes to CVP operations described in the alternatives.	Refer to Standard Response 4, Alternatives Formulation, regarding development of alternatives, including the criteria used to screen alternatives. As listed in Standard Response 4, Reclamation considered how well each potential alternative component would meet the purpose and need. As discussed in greater detail in Appendix V of Long-Term Operation – Initial Alternatives (https://www.usbr.gov/mp/bdo/docs/lto-2021-initial-alt-2022-09-30-app-v.pdf), screening criteria guided Reclamation to identify components that could be combined into alternatives. Through implementation of this screening effort, Reclamation retained components to establish a reasonable range. Each criterion was considered consecutively, so if a component was screened out after the first criterion, it was not compared to the subsequent criteria. Meeting purpose and need served as Screening Criterion #1.
80-8	Third the description of the four variations of Alternative 2 remains difficult to decipher. Chapter 3 and Appendix E should be revised to include a complete description of the actions that are included in Alternative 2 and the four variations of Alternative 2. In addition to aid understanding of the differences among the alternatives the Draft EIS should include tables that provide side-by-side comparisons of the different actions included in each alternative.	Section E.5 in Appendix E, Draft Alternatives, states that the phases of Alternative 2 could be used under its implementation and that all four phases are considered in the assessment of Alternative 2 to demonstrate the range of potential impacts. Edits have been made in the Final EIS, in Appendix E. Please refer to Standard Response 10, Voluntary Agreements, regarding additional information on Voluntary Agreements implementation and representation on Alternative 2.
80-9	2. Actions Intended to Benefit Fish Should Reflect the Best Available Science and the Expected Benefits Should be Quantified for Comparison Actions intended to benefit various fish species in the Bay Delta watershed are a significant element of the proposed	The analysis of impacts on aquatic resources is based on reliable data and is appropriate for purposes of comparing impacts among the alternatives. Please see Standard Response 7, Aquatic Resources, for additional discussion regarding the

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	CVP and SWP operations described in each alternative. These actions address some species at low levels of abundance such as the delta smelt and winter-run Chinook salmon. Actions intended to benefit fish have taken a progressively increasing share of the yield of the CVP. CVP contractors located south of the Delta in particular have seen a significant decline in the volume and reliability of the water deliveries as a result of those actions. Yet the species intended to benefit from actions restricting and altering CVP and SWP operations remain at low levels of abundance. Different solutions are needed. Alternatives 2 3 and 4 in the Draft EIS would continue the approach of imposing still further flow-based restrictions and requirements on CVP operations for the purpose of benefiting fish populations. Imposing yet additional flow requirements and restrictions on CVP and SWP operations with yet greater costs to water supply must receive careful scrutiny in light of the history of past regulation and the best science available today. Actions with significant water supply costs should not be adopted without strong scientific evidence they will benefit the listed species they are intended to benefit. The Draft EIS does not demonstrate that restrictions with significant water supply impacts will yield meaningfully better outcomes for fish than other alternatives.	methods used to support the assessment. Reclamation will weigh water supply impacts as one of the key considerations in selecting an alternative in the ROD.
80-10	a. The Fall X2 Measure Should be Eliminated From CVP and SWP Operations The No Action Alternative 2 Alternative 3 and Alternative 4 each include what is commonly referred to as the Fall X2 measure. (Draft EIS at 3-33 3-54 3-65 3-73.) Under the Fall X2 measure Reclamation and DWR would manage X2 to 80 kilometer (km) in September and October of wet and above normal years. This measure has been intended to improve habitat for the delta smelt. Fall X2 should be eliminated from future CVP and SWP operations because it does not serve its intended purpose of benefiting the delta smelt and carries a substantial water supply	As a result of recent scientific findings, including the 2024 draft USFWS Biological Opinion, Reclamation has modified Alternative 4 to remove the Fall X2 requirement. In addition, Reclamation has conducted a Summer X2 sensitivity analysis that includes above normal wet years, export reductions, releases from storage, and Fall X2 located at 85 km. A June action that uses a one-month block of water equivalent to what had been used for Fall X2, Delta outflow no greater than 10,000 cfs (split between CVP and SWP in accordance with COA) and using both export reductions and storage withdrawals to meet

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	cost. This year two important findings were released regarding the efficacy of the Fall X2 operation. These built on previous findings and conclusions that Fall X2 produces no measurable benefits to Delta smelt. The first finding was published in a peer-reviewed journal and the second was affirmation of those peer-reviewed findings in the draft USFWS biological opinion recently provided to interested stakeholders for review pursuant to the provisions in the Water Infrastructure Improvements for the Nation Act ("WIIN Act" Pub. L. No. 114-332 130 Stat. 1628). These findings add to the growing body of evidence that the Fall X2 action as originally proposed in 2008 and as modified in 2019 does not provide the originally hypothesized benefit for delta smelt. First Polansky et al. (2024) used life stage models of delta smelt to evaluate the potential of various flow augmentation operations on the species' population growth rate. The authors concluded that the Fall X2 measure did not appear to provide any measurable benefit to the species: "The findings here suggest summer not fall or winterspring is the most important season for freshwater flow augmentation to assist Delta Smelt population growth rate." [Emphasis added.] While more work is needed to understand the value of summer outflow to delta smelt and any contribution the CVP or SWP should make beyond the augmentation already occurring the draft USFWS biological opinion shared pursuant to section 4004(a) of the WIIN Act further explains that the best available scientific data does not show a likely benefit to delta smelt survival from the Fall X2 measure: The Delta Smelt Summer-Fall Habitat Action also includes a Fall X2 element (BA Section 3.7.6.1). The Fall X2 action is a 'pulse flow' in September of Wet and Above-Normal water years that carries over into October which is officially the subsequent water year. As proposed the pulse of freshwater would maintain a 30-day average X2 at 80 km in both months. The Fall X2 action was originally in the Service's 2008 Reasonable and Prudent Alternative (Service 2008) and was motivated by concerns about proposed	outflow requirements. Please refer to Standard Response 11, Summer Fall Habitat Action, for additional description of the summer fall habitat action assumptions.

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	'flatlining' of habitat suitability in the autumn (Feyrer et al. 2011 p. 124 and their Fig. 5). The modeled Delta outflows for September and October are about the same in the PA as the NAA (i.e. within the CalSim 3 error) so there is no proposed change from baseline [Figure]. Currently proposed outflows in September and October are lower than what they were in the 1970s through 1990s (Feyrer et al. 2011 their Fig. 2) but they are higher than what occurred naturally [Figure] However the more important question for the purposes of this effects analysis is whether the PA's fall flow regime will have negative effects on delta smelt specifically if variation in fall outflow will result in a detectable change in survival of the affected life stage. The Service has previously concluded that it would (Service 2008; 2019); however this conclusion is not supported by life cycle analysis [Table]. It is possible that the Fall X2 action could have effects on small numbers of delta smelt and that the effects could have positive or negative consequences. (Draft USFWS BiOp pgs. 100-101.)	
80-11	The draft USFWS biological opinion evaluates the potential effects of the Delta Smelt Summer- Fall Habitat Action (i.e. operation of the SMSCG and the Fall X2 measure) on longfin smelt as well. It concludes the "Delta Smelt Summer-Fall Habitat Action will not have discernable effects on the longfin smelt DPS." (Draft USFWS BiOp pg. 207.) The draft USFWS biological opinion then explains: Longfin smelt use the estuary very differently than delta smelt. A fundamental difference is the seasonality of the longfin smelt DPS's distribution in the estuary. By July when the SMSCG would begin to be operated the distribution of the longfin smelt DPS is not constrained by an upper salinity bound. When longfin smelt begin returning to the estuary in the fall distribution is broad but is influenced by X2 (CDFW 2020 their Fig. 2). However there is no information available to indicate that the location of X2 affects survival of fish by this stage in their life beyond potentially	Refer to Standard Response 2, Related Regulatory Processes, for information on the 2019 Biological Opinions. The No Action Alternative and Alternative 2 do include the Fall X2 provision as described in the 2019 USFWS Biological Opinion. Please refer to Standard Response 11, Summer Fall Habitat Action for additional information regarding a summer and fall habitat action.

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	affecting the risk of entrainment. (Draft USFWS BiOp pgs. 205 207.) While the biological opinion is a draft it is also fresh in its release and for these conclusions relies upon rigorous peer-reviewed scientific studies. It is also consistent with several other studies of Fall X2 that have been conducted since the measure was first (and controversially) proposed in 2008.	
80-12	Fall X2 has had varying but significant water supply and associated socioeconomic costs when implemented and has resulted in the redirection of millions of acre-feet of water that could have been beneficially used since its implementation in 2008. For example in 2023 alone the water cost to implement the measure was estimated to be greater than 730000 acre-feet between the two projects. This water could have otherwise been kept in storage delivered for use at farms and in cities stored or banked for drought resiliency or used for a variety of other purposes including other environmental purposes like improving water quality or temperature improvements. For the 2024 operational year Fall X2 if fully implemented is anticipated to reduce the CVP and SWP water supplies by an estimated 350000 acre-feet through a combination of reduced exports and additional releases from upstream reservoirs. For context this is equivalent to one-third of Folsom Lake or nearly $200 million worth of water if purchased on the open market with untold additive economic value to the State were it able to be used in a different manner.	Refer to Standard Response 2, Related Regulatory Processes, for information on the 2019 Biological Opinions. Modification of the CVP and SWP 2024 Fall X2 action is an operations implementation request unrelated to the adequacy of the EIS and independent of the analysis of LTO alternatives undertaken and presented in the EIS. However, the No Action Alternative and Alternative 2 do include the Fall X2 provision as described in the 2019 USFWS Biological Opinion. Please refer to Standard Response 11, Summer Fall Habitat Action, for additional information regarding a summer and fall habitat action.
80-13	Advances in scientific knowledge since 2008 have made clear that Fall X2 does not serve its intended purpose of benefiting the delta smelt but does impose a substantial water supply cost. The Fall X2 measure should not be included in CVP (or SWP) operations going forward. The Water Authority has urged Reclamation not to implement the Fall X2 measure in 2024. Reclamation and other interested agencies have responded that they plan to go forward with implementation but perhaps modify the action. This is	As a result of recent scientific findings, including the 2024 draft USFWS Biological Opinion, Reclamation has modified Alternative 4 to remove the Fall X2 requirement. In addition, Reclamation has conducted a Summer X2 sensitivity analysis that includes above normal wet years, export reductions, releases from storage, and Fall X2 located at 85 km. A June action that uses a one-month block of water equivalent to what had been used for Fall X2, Delta outflow no greater than 10,000

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	documented in an exchange of letters in August 2024; the letters are included in the Appendix submitted with this comment letter.	cfs (split between CVP and SWP in accordance with COA) and using both export reductions and storage withdrawals to meet outflow requirements. The No Action Alternative and Alternative 2 do include the Fall X2 provision as described in the 2019 USFWS Biological Opinion. Please refer to Standard Response 11, Summer Fall Habitat Action, for additional information regarding a summer and fall habitat action.
80-14	b. The Draft EIS Does Not Show Meaningful Projected Benefits for Fish Populations From Further Restrictions on CVP Operations The discussion in the Draft EIS of the effects of each alternative on fishery resources in the Delta is predominantly qualitative using descriptive terms such as "is expected to have an adverse or beneficial impact" "is expected to have minor adverse or beneficial impacts" "is expected to have negligible impacts" and "is expected to have minor to moderate" effects. There are no standardized criteria presented in the Draft EIS that differentiate what constitutes a minor impact from a negligible or moderate impact. Reliance on these qualitative descriptions makes it impossible to compare and evaluate the potential significance of differences among alternatives. Where fishery-impact metrics are used the difference among alternatives is so small that the Draft EIS cannot present a scientific basis or rationale for selecting one alternative over another. For example Figures 0-33 0-34 and 0-20 show no substantive differences in outcomes for Central Valley Chinook salmon populations.	Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS and NEPA requirements for impact determinations. Please refer to Chapters 4–22 regarding the analysis and discussion of potential environmental effects of the alternatives. Specifically, please refer to Chapter 12 Fish and Aquatic Resources, regarding potential impacts to fishery resources. Please also refer to Standard Response 7, Aquatic Resources, regarding concerns about adverse project impacts on salmonids and other fishes. The context and magnitude of impacts are discussed throughout Chapter 12 and Appendix O. The extensive analyses used for the evaluation of impacts on aquatic species demonstrated a range of differences between the alternatives. Some were smaller and some larger. Furthermore, even small differences may result in larger impacts, and therefore, the interpretation of the model results were assessed by expert opinion in Appendix O. Individual subject-matter experts did not use a standardized descriptor for impacts, and there were no set descriptors established that overlapped analysis throughout the document. Due to the extensive and diverse

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		nature of the information, it was not appropriate to set universal descriptors. For example, a 1-5% increase in flows may be categorized as minimal while a 4% increase in survival (within that 1-5% range) may not be minimal, particularly in a dry or critically dry water year type. A 5% increase in flows in the mainstem Sacramento River will not be categorized the same as a 5% increase in flows in Clear Creek. Subject matter experts integrated the information to provide the analysis in the EIS, as it was not deemed appropriate to use set descriptors and these determinations were left to expert judgment.
80-15	The Draft EIS does not present any direct comparisons of the effects expected from the several alternatives. A new section should be added to Chapter 12 that provides a comparative summary of the effects of each alternative for each relevant location and species. Placing those effects side by side for comparison would be useful and informative. The Appendix submitted with these comments includes a table with the expected effects of CVP and SWP operations under Alternative 2 and Alternative 4 according to the Draft EIS. The effects include temperature dependent mortality for winter-run Chinook salmon eggs downstream of Keswick Dam and effects on fish within the Delta. As the table explains differences in effects on fish habitat or survival between the two alternatives are negligible. The substantial additional water supply costs of Alternative 2 over Alternative 4 as an example are not worth the negligible expected benefits for fish.	Please see the Summary of Impacts Table (Table O-282) in Appendix O Fish and Aquatic Resources. Reclamation acknowledges the comment and will consider modifying the structure to present results for future environmental documents. The context and magnitude of impacts are discussed throughout Chapter 12 and Appendix O. The extensive analyses used for the evaluation of impacts on aquatic species demonstrated a range of differences between the alternatives. Some were smaller and some larger. Furthermore, even small differences may result in larger impacts, and therefore, the interpretation of the model results were assessed by expert opinion in Appendix O. Individual subject-matter experts did not use a standardized descriptor for impacts, and there were no set descriptors established that overlapped analysis throughout the document. Due to the extensive and diverse nature of the information, it was not appropriate to set universal descriptors. For example, a 1-5% increase in flows may be categorized as minimal while a 4% increase in survival (within that 1-5% range) may not be minimal, particularly in a dry or critically dry water year type. A 5% increase in flows in the mainstem Sacramento River will not be categorized the same as

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		a 5% increase in flows in Clear Creek. Subject matter experts integrated the information to provide the analysis in the EIS, as it was not deemed appropriate to use set descriptors and these determinations were left to expert judgment. The EIS has been prepared in compliance with NEPA and evaluates the reasonable range of direct, indirect and cumulative potential impacts that may result from the alternatives. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. Please also refer to Standard Response 7, Aquatic Resources, regarding concerns about adverse project impacts on salmonids and other fishes. Support for Alternative 4 is noted.
80-16	The credibility and reliability of the Draft EIS would be improved substantially by the addition of a section following the introduction in Chapter 12 that: (1) provides an overview of the approach(es) used in performing the effects analyses (2) identifies the modeling tools (with reference to the specific pages in Appendix O describing each analysis and where the results of the "technical analyses" are presented) and (3) describes the criteria used to identify significant adverse effects the criteria and analyses used to distinguish significant differences between alternatives the criteria used to determine an impact is negligible minor moderate or severe --- for example impacts to salmon survival that only occur in one year may be considered to be moderate (affecting only one year class) while the same annual impact over 3 consecutive years could result in a more severe impact to the population.	Please see Standard Response 7, Aquatic Analysis, section Structure of the Aquatics Analysis, for an explanation of how the information in this Draft EIS is provided. For an overview of the approaches used in performing the effects analyses. The results of the comparative analyses were variable and specific to each analysis, species, and geography and cannot be provided in detail with the current page limit restrictions under NEPA in Chapter 12, Fish and Aquatic Resources. However, this information is provided on Appendix O, Fish and Aquatic Resources Technical Appendix, and associated attachments. For details on the modeling approach(es) used, please see Section O.2 Methods and Tools in Appendix O. Please see Standard Response 7, section Application of Modeling Results and Evaluation of Impacts. The context and magnitude of impacts are discussed throughout Chapter 12 and Appendix O.

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		The Final EIS contains clarifying language regarding the terms used to describe the magnitude and context of the impacts evaluated in Chapter 4–22 and Appendices G–X. Reclamation agrees with the assertion that impacts occurring over consecutive years are more severe than impacts with the same magnitude occurring in a single year.
80-17	Finally the discussion of the fishery benefits expected to attend Alternative 2b provides little support for the analyses and findings intended to serve as a basis for policy-level assessment in comparison to the other alternatives considered in the Draft EIS. A wide range of simulation modeling analytical tools are available and should be applied to assess quantitatively and evaluate Alternative 2b against the other alternatives in the Draft EIS.	Alternative 2B in the Draft EIS built upon the modeling for Alternative 2. Updated modeling for Alternative 2 has been included in the Final EIS and includes the assumptions and actions under Alternative 2B. There are no significant changes between the results for Alternative 2 in the Final EIS and Draft EIS. The Final EIS does not contain a separate Alternative 2B.
80-18	c. Future CVP Operations Should Include Robust Adaptive Management The Draft EIS acknowledges that adaptive management is an integral element of implementing and evaluating the performance of actions in meeting their intended biological objectives. The Draft EIS describes the adaptive management as: "Adaptive Management: science and decision analytic-based approach to evaluate and improve actions with the aim to reduce uncertainty over time and increase the likelihood of achieving and maintaining a desired management objective." (Draft EIS at 3-3) Several of the management actions subject to assessment in this Draft EIS are candidates for implementation in an adaptive resource management framework including but not limited to three actions that currently are the subjects of review and advice by a committee engaged by the National Academies as requested by Reclamation. Management actions that are likely to be implemented in adaptive frameworks and subject to adjustment or amendment are those with greater water-cost requirements that have significant uncertainties associated with predictions of	Refer to Appendix E, Draft Alternatives, for a full description of the adaptive management program, its approach to scientifically building knowledge and improving management over time in a goal-oriented and structured way, and its use as part of a collaborative decision-making process. As actions stemming from the adaptive management framework are considered, Reclamation will evaluate whether the actions are within the effects analyzed in the EIS or if there is a need for additional environmental compliance. Reclamation appreciates the willingness of interested parties to advance science related to the operation of the CVP and SWP.

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	biological outcomes and species-specific ecological and behavioral responses. Those are the same uncertainties that have resulted in substantial amounts of qualitative impact assessments for the Draft EIS analyses instead of the preferable quantitative assessments. Adaptive management actions can be expected to adjust spatial attributes of the management action the timing of the action and/or the intensity of the action or volume of water dedicated to the action. Potential adjustments for an adaptively managed action may involve moving it between water-year categories -- critical dry below-average above-average wet. In any such case an adjusted action is expected to either enhance benefits to the target species and/or reduce the water costs associated with implementing the action to provide the anticipated benefit. Important to the analysis of any adaptively managed action those actions may be accompanied by increased or lessened impacts on other sensitive species or other species of concern. Any such changes in the attributes of the adaptively managed action can result but will not necessarily result in environmental impacts different from those predicted by models that address actions not subject to adaptive adjustments.The Draft EIS can better address the environmental impacts of management actions most likely to be implemented in an adaptive framework. First it is important to identify those actions that are anticipated to be subject to adaptive management. They are the actions that have the most consequential scientific uncertainties that have previously been identified as requiring better justification including using enhanced monitoring or directed studies and those that require greater water allocation commitments to implement the action. Once prospective adaptive management actions are identified the second step is to expand the analyzed-effects assessment envelope to consider a range of prospective adjustments to the action both in the timing of the action as well as the water allocated for implementing the action. For instance if a prescribed management action in the Draft EIS	

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	requires the release of 10000 acre-feet of water and has been analyzed at that action level the adaptive management framework analysis would be expanded to consider the effects of the adjusted action from 8000 acre-feet (the action necessitating and adapting to a lower required water commitment) to 12000 acre-feet (a greater water commitment). Additionally the timing of the prospective adaptive management action may require adjustment. Analyses might consider adjustments of several weeks but probably not more than a month as well as adjustments that could require implementation in more or fewer water-year types.The Draft EIS currently contains primarily qualitative effects analyses drawn from operational models that make ecological projections from data and analyses accompanied by substantial uncertainties. As such an expansion of analyses to accommodate ranges of adaptive management is unlikely to require significant additional analysis.The Water Authority recommends that the Draft EIS be expanded to include:-A description of the Adaptive Management framework and decision-making process;-Identification of those elements of proposed action that are anticipated to be subject to adaptive management;-Identification of the proposed process for defining the intended biological outcomes from the identified actions that will be included in the Adaptive Management framework and the associated measurable objectives that will be used to assess the performance of each action;-Identification of monitoring criteria required to evaluate each action;-Identification of the range of potential adaptive management refinements to an action; and-Assessment of the potential effects of modifying each adaptively managed action for the upper and lower bounds on each action in the Final EIS and the Section 7 ESA consultation process. It is essential to assess the prospective environmental impact of any management action that will be or may be implemented in an adaptive resource management framework as the action is described in this Draft EIS but the effects analysis	

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	should also incorporate a sufficient range to anticipate potential adjustments or amendments to the action consistent with its implementation in an adaptive framework. Without a sufficiently robust effects analysis additional subsequent analysis may be required before adapting the action in response to updated information. That could delay and may limit the effectiveness of the Adaptive Management Program to modify operations consistent with increased scientific understanding of the effects of various actions on the physical environment.The Final EIS should describe in sufficient detail the agency process to reach conclusion on actions to be adaptively managed as well as a firm commitment and process to implement adaptively managed actions without further procedures to meet statutory or regulatory requirements for those adaptively managed actions. The Water Authority is prepared to offer Reclamation technical and management-level assistance in developing the recommended additions to the Draft EIS associated with a more robust Adaptive Management Program.	
80-19	3. The Alternatives Analysis in the Draft EIS Is Inadequate. The Draft EIS Fails to Consider Whether Each Alternative Is Consistent With Reclamation's Contractual Obligation to Deliver Up to Stated Quantities When It Can Do So Consistent With Applicable Legal Requirements A statement of purpose and need in an EIS serves to inform the public of why the agency is proposing an action and to frame the reasonable range of alternatives. Reclamation's NEPA Handbook explains: "This brief statement is a critical element that sets the overall direction of the process and serves as an important screening criterion for determining which alternatives are reasonable. All reasonable alternatives examined in detail must meet the defined purpose and need." (Reclamation's NEPA Handbook at 8-5.) The Draft EIS states the "purpose of the action considered is to continue the operation of the CVP and the SWP for authorized purposes in a manner that . . . Satisfies Reclamation	Please see Standard Response 4, Alternatives Formulation, which addresses how the alternatives were developed and screened from further consideration and how the alternatives brought forward for consideration in the EIS meet the project's purpose and need as described in EIS Chapter 2, Purpose and Need. Reclamation is a federal agency and follows federal rules and regulations. Under Alternative 2, Reclamation would operate consistent with applicable law, contracts, and agreements.

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	contractual obligations and agreements." (Draft EIS at 2-1.) As this statement confirms Reclamation's contractual obligations are an important aspect of the required analysis. All reasonable alternatives examined in detail must meet this need. In CVP repayment and water service contracts the United States promises to deliver a stated quantity of water to its contractors each year. (See e.g. San Luis Water District Contract No. 14-06-200-7773A-IRI-P Art. 3(a).) This promise to deliver the stated quantity each year is subject to "applicable State water rights permits and licenses [and] Federal law." (Id.) The United States is excused from delivering the full quantity stated in the contract if it cannot do so because of causes beyond its control such as drought or because of actions taken to meet legal requirements. (Id. Art. 12(b).) As Appendix C to the Draft EIS summarizes under the water service and repayment contracts "Reclamation is shielded from any liability if there is a shortage of water due to drought or actions taken by Reclamation to meet a legal obligation." (Draft EIS Appx. 3 at 68.) However the United States must deliver as much of the stated annual quantity as it can consistent with hydrology and legal requirements. (Id. Art. 11(a) ("[T]he Contracting Officer shall make all reasonable efforts to optimize Project Water deliveries to the Contractor as provided in this Contract."); Art. 12(a) ("[T]he Contracting Officer will use all reasonable means to guard against a Condition of Shortage in the quantity of Project Water to be made available to the Contractor.").) In exchange for this delivery commitment the CVP repayment and water service contractors have agreed to repay the capital costs of the CVP and pay for the ongoing operation and maintenance of the CVP. Under these contracts Reclamation cannot make voluntary changes to CVP operations that would reduce contract allocations. That is Reclamation must deliver the water it promised to deliver unless it is precluded from doing so by drought or legal requirements. According to the Draft EIS three of the four alternatives being considered would reduce allocations to	

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	CVP agricultural contractors south of the Delta. The Draft EIS explains that relative to the No Action Alternative "[u]nder Alternative 1 there would be an increase in water supply deliveries for CVP agricultural contractors south of the Delta. Under Alternatives 2 3 and 4 deliveries to CVP agricultural water users would decrease. Changes are concentrated in dry and critical water year conditions." (Draft EIS at 0-13.) These projected decreases in water allocations relative to the No Action Alternative would be a consequence of changes to the operating regime for the CVP not hydrology. Changes to the operating regime of the CVP that would result in reduced allocations but are not necessary to meet legal requirements are inconsistent with Reclamation's contractual obligations. The Draft EIS fails to address whether the alternatives would be consistent with Reclamation's contractual obligations. The Draft EIS does not address whether any of the changes to CVP operations included in Alternatives 2 (including 2b) 3 and 4 are necessary to meet statutory or regulatory requirements. For example there is no discussion in the Draft EIS regarding which of the changes to CVP operations included in Alternative 2 are necessary to meet Reclamation's obligations under the ESA. Nor does the Draft EIS mention Reclamation's contractual obligation to optimize deliveries up to the stated contract quantity after accounting for drought and legal requirements.	
80-20	This failure to consider Reclamation's contractual obligations is readily apparent with respect to the preferred alternative 2. Alternative 2 includes actions that are not legally required of the CVP but instead are intended to "harmonize" CVP operations with SWP operations and to implement a "multi-agency consensus" regarding operations. The Draft EIS says: "Alternative 2 consists of actions developed with the California Department of Fish and Wildlife DWR NMFS and USFWS to harmonize operational requirements of CVP with California Endangered Species Act	Please refer to Chapter 1, Introduction, and Chapter 2, Purpose and Need, regarding the purpose and need of this multipurpose project. Reclamation is not subject to CESA. Please refer Chapter 1 regarding Reclamation reinitiating Section 7 consultation to voluntarily reconcile the CVP and SWP operation. Please see Standard Response 10, Voluntary Agreements, which

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	requirements for the SWP. It includes actions and approaches for the CVP and SWP identified by the state and federal fish agencies in addition to the water supply and power generation objectives of Reclamation and DWR." (Draft EIS at 3-1.) It further explains Alternative 2 "represents actions and tradeoffs made to reach consensus among Reclamation DWR USFWS CDFW and NMFS." (Draft EIS Appx. E at E-67.) The requirements of CESA do not apply to operations of the CVP. Voluntary actions taken to conform CVP operations to CESA-based requirements that also reduce deliveries are inconsistent with Reclamation's contractual obligations. To the extent such voluntary actions reduce exports during "excess conditions" they are also in violation of federal law. See San Luis & Delta-Mendota Water Authority v. U.S. Dept. of the Interior No. 1:11-cv-00952 LJO GSA E.D. Cal. 2015 2015 WL 893365. That Reclamation reached a "consensus" with other agencies based on "tradeoffs" does not establish a legal requirement to implement Alternative 2. Instead what this description reveals is that Alternative 2 includes voluntary actions by Reclamation that may reduce CVP water allocations to the Water Authority's member agencies. Such reduced deliveries would be inconsistent with Reclamation's contractual obligation to deliver up to the full contract quantity when it can do so consistent with hydrology and legal requirements.	provides an overview of how the Voluntary Agreements are incorporated into Alternative 2 and are considered in the impacts analysis.
80-21	The Draft EIS's description of Alternative 3 likewise confirms it cannot be implemented consistent with Reclamation's contractual obligations. "Alternative 3 consists of operation to increased Delta outflow up to 65% of unimpaired inflow and to carryover storage requirements in addition to other measures. This alternative was developed in coordination with the NGO community." (Draft EIS at 3-1.) Reclamation is under no legal requirement to implement these measures and the measures would cause devastating reductions in water supply deliveries to levels far below contracted	Please refer to Standard Response 4, Alternatives Formulation, regarding the reasonable range of alternatives developed by Reclamation, including Alternative 3. Reclamation believes the EIS contains a reasonable range of alternatives and the effects of implementing the alternatives are fully disclosed. Reclamation is a federal agency and follows federal rules and regulations. Reclamation operates consistent with applicable federal laws, contracts and agreements.

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	quantities. "Alternative 3 would reduce (by approximately 17%) average annual deliveries to CVP M&I water users would reduce (by approximately 70%) average annual deliveries to CVP agricultural water users and would reduce (by approximately 38%) average annual deliveries to SWP M&I water users." (Draft EIS at 5-5.) Reclamation cannot voluntarily adopt the measures in Alternative 3 without breaching its contractual obligations. There is no mention of this infeasibility of Alternative 3 in the Draft EIS. In sum the Draft EIS entirely fails to consider an important aspect of the issue before Reclamation whether the proposed changes to CVP operations described in the several alternatives are consistent with Reclamation's contractual obligations. Many are not. The alternatives analysis including the reasonable range of alternatives must be thoroughly revised and reconsidered to account for Reclamation's purpose and need to satisfy its "contractual obligations and agreements." (Draft EIS at 2-1.)	
80-22	b. The Federal Agencies Must Explain Whether the Measures in Alternative 2 Are Necessary to Avoid Jeopardy or Adverse Modification of Critical Habitat And If So What Scientific Data Support That Conclusion and Why Measures With Lesser Water Supply and Economic Impacts Are Inadequate Under ESA section 7 a federal agency must ensure its actions are not likely to jeopardize listed species or adversely modify their critical habitat. (16 U.S.C. 1536(a)(2).) That determination is made by the federal action agency in consultation with USFWS or NMFS. If USFWS or NMFS believes a proposed agency action would jeopardize a listed species or adversely modify critical habitat it must identify reasonable and prudent alternatives that would not do so. (16 U.S.C. 1536(b)(3)(A).) A proposed agency action that would not pose jeopardy or adverse modification of critical habitat may go forward essentially as proposed subject to reasonable and prudent measures designed to minimize the impact of incidental take. The	The Biological Opinions are developed by USFWS and NMFS through the ESA Section 7 consultation process. Please see Standard Response 2, Related Regulatory Processes.

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	reasonable and prudent measures in a biological opinion cannot involve major changes such as altering the basic design location duration or timing of the action. (50 C.F.R. 402.14(i)(2).)In section 4004(a) of the WIIN Act Congress sought to ensure cooperation transparency and accountability in ESA consultations regarding operations of the CVP and the SWP. In subdivision (4) of section 4004(a) Congress directed the federal agencies involved in those consultations to provide public water agency contractors an opportunity to review and comment on draft documents prepared in the consultation process. In the current ongoing consultation the Water Authority has accordingly been provided administrative draft copies of the biological opinions prepared by USFWS and NMFS for review and has provided comments on those drafts. Unfortunately the draft biological opinions provided for review were materially incomplete as the Water Authority has explained in its prior comment letters. The Water Authority looks forward to a further opportunity for comment on complete drafts of the biological opinions when they are available and prior to finalization.	
80-23	This comment concerns the requirements of subdivisions (5) and (6) of section 4004(a) regarding reasonable and prudent alternatives. Under section 4004(a)(5) of the WIIN Act the Water Authority's member agencies must be provided an "opportunity to confer with" Reclamation "about reasonable and prudent alternatives prior to" Reclamation "identifying one or more reasonable and prudent alternatives for consideration by" USFWS or NMFS. There has been no such conference. Under section 4004(a)(6) of the WIIN Act if USFWS or NMFS suggest a reasonable and prudent alternative they must explain to the Water Authority's member agencies "how each component of the alternative will contribute to avoiding jeopardy or adverse modification of critical habitat and the scientific data or information that supports each	Please refer to Standard Response 2, Related Regulatory Processes, regarding the timing of the Biological Assessment and Biological Opinion processes in relation to the NEPA process. Reclamation is currently preparing environmental documents under the requirements of NEPA and ESA to analyze and disclose the potential effects of the proposed action and alternatives. Reclamation will comply with all applicable laws and requirements, including the WIIN Act and consideration of these Final EIS comments, prior to making final decisions related to the proposed action or alternatives. Nothing in NEPA or ESA restricts Reclamation from conferring and coordinating with cooperating agencies in defining its

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	component of the alternative" and "why other proposed alternative actions that would have fewer adverse water supply and economic impacts are inadequate to avoid jeopardy or adverse modification of critical habitat." No such explanations have been provided to the Water Authority. For purposes of the ESA consultation USFWS and NMFS have used Alternative 2 as the proposed action. In a typical ESA consultation the action agency defines its proposed action and then submits that proposed action to the consulting wildlife agency for its biological opinion regarding effects on listed species. If the consulting wildlife agency concludes the proposed action would cause jeopardy or adverse modification it must identify any reasonable and prudent alternatives. That is not what has occurred for Alternative 2. Instead the Draft EIS states that Alternative 2 is a "consensus" plan that "includes actions and approaches for the CVP and SWP identified by the state and federal fish agencies." (Draft EIS at 3-1.) Thus USFWS and NMFS (and state agencies) could be considered as much the authors of the proposed action in Alternative 2 as is Reclamation. But it is unclear whether USFWS and NMFS deemed any of the new actions applicable to CVP operations they suggested that are included in Alternative 2 to be necessary to avoid jeopardy or adverse modification. Neither the Draft EIS nor the draft biological opinions assert the changes to CVP operations included in Alternative 2 are necessary to avoid jeopardy or adverse modification of critical habitat that would otherwise be caused by CVP operations under the No Action Alternative. Yet Alternative 2 includes major changes to CVP operations that would significantly impair the CVP's ability to deliver water to many of the Water Authority's member agencies. The new measures in Alternative 2 thus go well beyond the scope of permissible reasonable and prudent measures. The major changes Alternative 2 would require to CVP operations together with the authorship of Alternative 2 by the consulting wildlife agencies are hallmarks of a reasonable and prudent alternative. If	proposed action and a reasonable range of alternatives for analysis in this EIS. Instead, NEPA and the CEQ NEPA Regulations encourage early coordination with cooperating agencies in defining alternatives and determining the scope of the EIS analysis. Using the input gathered early in the NEPA and ESA consultation process, Reclamation has crafted a proposed action and alternatives that take into consideration the needs of its CVP contractors in balance with the need to minimize environmental effects and support fish and wildlife and other beneficial uses.

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	any of the new actions in Alternative 2 were included because they were deemed necessary to avoid jeopardy or adverse modification the federal agencies have circumvented the conference and disclosure requirements of subdivisions (5) and (6) of section 4004(a) of the WIIN Act. To ensure compliance with section 4004(a) of the WIIN Act Reclamation USFWS and NMFS must clarify whether any of the changes to CVP operations proposed in Alternative 2 are necessary to avoid jeopardy or adverse modification of critical habitat. If so Reclamation must confer (albeit belatedly) with the Water Authority regarding those changes as required by subdivision (5) and USFWS and NMFS must provide the further detailed information about those changes as required by subdivision (6). Failing to do so would violate the purpose and intent of section 4004(a) of the WIIN Act and circumvent Congressional direction.	
80-24	4. The Draft EIS Does Not Adequately Address Environmental Effects to South-of-Delta Communities and Resources. Constraints on the Availability of Groundwater Under SGMA Should Be Included in the Quantitative Analysis of Water Supply Impacts The Draft EIS acknowledges that its quantitative estimates of the supply of groundwater available to substitute for losses of CVP surface water supply are wrong. The estimates are wrong because the model used to estimate changes in use of groundwater does not account for limitations on pumping under the Sustainable Groundwater Management Act ("SGMA"). The Draft EIS says: The C2VSimFG model does not simulate limitations to groundwater pumping that may be imposed as part of a local GSP. Therefore the simulated groundwater pumping values may overestimate the amount of groundwater pumping in certain areas. Groundwater basins denoted to be in overdraft conditions will likely have more limitations on groundwater pumping per SGMA.(Draft EIS at 6-6 to 6-7.) Appendix I of the Draft EIS confirms that the modeling	SGMA prescribes that GSAs develop GSPs to bring medium- and high-priority basins into sustainable operation. Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium and high priority basins with overdraft conditions or 2042 for medium and high priority basins without overdraft. Each GSP that is either currently being developed or has been developed is specific to each groundwater basin/subbasin. The C2VSim groundwater model does not include specific actions for each GSP relative to parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decision regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The C2VSim model represents effects to groundwater resources that may be more substantial than when

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	analysis included assumptions regarding groundwater availability that were not constrained by adopted Groundwater Sustainability Plans ("GSPs"). (Appendix I pgs. I-81 I-82.) Rather than correct for this overestimate of the availability of groundwater the Draft EIS simply reports the simulated groundwater pumping in the Central Valley estimated by the model without modification. (Id. at 6-8 to 6-10.) By omitting existing restrictions on groundwater use [Footnote 2: SGMA requires that each GSP adopted to govern groundwater extraction in a particular groundwater basin provide "measurable objectives" and "minimum thresholds" that are designed to prevent "undesirable results" to groundwater resources. (Wat. Code 10727.2(b)(4); 23 C.C.R. 354.30.) These "measurable objectives" and "minimum thresholds" are "based on quantitative values" and the GSA must ensure that groundwater extractions stay within those limits. (23 C.C.R. 354.30(b) (d) (e).)] from the quantitative modeling the modeling results have failed to consider enforceable legal limits on groundwater extraction and cannot accurately project how this resource category and the other related resources categories would be impacted. Groundwater is too important a resource for the Central Valley to leave to an admittedly incomplete analysis. The Draft EIS states groundwater "is estimated to account for about 38% of the overall water supply in the northern portion of the San Joaquin Valley Groundwater Basin (California Department of Water Resources 2013a)." (Id. at 6-3 6-4.) The estimates of changes in groundwater pumping to compensate for lost surface supply should be adjusted to account for limitations on pumping imposed under SGMA particularly for those subbasins with approved Groundwater Sustainability Plans that are under current implementation. If water users cannot replace lost surface water supplies with groundwater then they may have no choice but to fallow land abandon permanent crops or for those communities reliant on groundwater for drinking water supplies enforce significant conservation measures on the residents	GSP provisions are fully enacted. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives. Decisions by individual GSPs pertaining to potential mandatory reductions in groundwtaer pumping to meet one or more GSP criteria would be left to the individual GSP and may not be codified in a manner than can be programmed into the groundwater model simulations. C2VSim is the best available groundwater modeling tool given the geographic scale of the analysis and the complexity of linking to the CalSim 3 model analysis. Each of the alternatives simulated in the EIS are simulated with the same assumptions regarding SGMA. Therefore, the comparison of each alternative to the No Action Alternative is comparable to each other to determine relative changes in groundwater resources.

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	of their community. Chapter 14 of the Draft EIS purports to address regional economics. It reports that the "SWAP" model adjusts its estimate of economic impacts based on limitations imposed on groundwater pumping under SGMA. The SWAP model documentation explains: "Groundwater availability is specified by Subbasin-specific Sustainable Yields and GSA-specific allocations (in areas where GSAs have defined allocations). These are determined by reviewing GSPs GSP updates GSP technical appendices and GSA meeting minutes and policies." (Draft EIS Attach. Q-3 at Q-3.15.) It is not apparent why a similar method could not be used to adjust estimates of groundwater pumping under the C2VSimFG model.	
80-25	b. Recent Experience Indicates That the CalSim Modeling Likely Understates Potential Water Supply Impacts From Periods When Export Pumping Is Curtailed After Biological Thresholds Are Triggered Alternative 2 includes a number of "Real-time Adjustments" that apply operational restrictions to operations of the CVP and SWP when certain "thresholds" are reached. These thresholds include: (1) the Delta Smelt Adult Entrainment Protection Action (Turbidity Bridge) (Draft EIS at 3-49); (2) Longfin Smelt Adult Entrainment Protection Action (id. at 3-50); (3) Winter-Run Chinook Salmon Loss Thresholds (id. at 3-52); (4) Steelhead Weekly Distributed Loss Thresholds (id. at 3-53); and (5) Spring-Run Chinook Salmon and Surrogate Threshold (id. at 3- 53). Once a specific threshold is reached the operators of the CVP and SWP are required to adjust operations based on the restrictions that are associated with each threshold (e.g. if cumulative loss of either natural or hatchery winter-run Chinook salmon in a brood year exceeds 50% of the annual loss thresholds then DWR and Reclamation will restrict south Delta exports to maintain a seven-day average OMR value no more negative than -3500 cubic-feet per second ("cfs") for seven consecutive days). When these	Alternative 2B built upon modeling conducted for Alternative 2. Modeling for Alternative 2 has been updated in the Final EIS to include actions and assumptions of Alternative 2B. The modeling in the Final EIS for Alternative 2 does not show substantive changes from the modeling in the Draft EIS for Alternative 2. The Final EIS does not contain a separate Alternative 2B.

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	thresholds are reached there are adverse effects on water supply. However the modeling and other analysis in the Draft EIS fails to quantify the potential water supply impacts associated with these proposed operational components of Alternative 2. In early 2024 CVP operations were subject to restrictions that were triggered by the "Steelhead Weekly Distributed Loss Thresholds" which resulted in a change in Old and Middle River ("OMR") reverse flow restrictions from -5000 cfs to -500 cfs. CVP operators complied with this sudden change in OMR reverse flow restrictions by implementing a swift and significant reduction in South of Delta ("SOD") exports. The total water supply impacts associated with this reduction in SOD exports is estimated to be 95000 acre-feet of foregone SOD exports by the CVP as compared to what would have been available if these restrictions were not in place. This amount of water has an approximate value of $62 million meaning that the imposition of this action resulted in major economic impacts. Despite the significant adverse effects to water supply that have been associated with implementation of real-time operations thresholds under the existing operations regime the Draft EIS fails to meaningfully evaluate the potential water supply impacts that will occur if real-time operations thresholds are triggered. For example even though it is difficult to predict whether a particular threshold will be triggered in a particular year it is not difficult to predict the potential water supply impacts that will occur if a particular threshold is triggered. Assumptions regarding the scale of these water supply impacts could and should be incorporated into the modeling along with available data regarding the likelihood that they will occur in a given year to provide the public and decision-makers with insight into the potential scale of these impacts. Even if Reclamation determines that providing a quantitative evaluation of the impacts associated with these thresholds is too speculative NEPA still requires Reclamation to provide a more detailed evaluation of the potential significance of	

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	these impacts than is currently included in the Draft EIS.The Draft EIS acknowledges the likelihood that because Alternative 2b includes more restrictive "QWEST criteria" and the "extension of the CCF operation period" it may result in more frequent "real-time adjustments" (e.g. more frequently meeting seasonal thresholds or weekly thresholds) than the No Action Alternative. The potential impacts of these changes on water exports are discussed in Chapter 4 Water Quality (Draft EIS at 4-12) Chapter 5 Water Supply (id. at 5-6) Chapter 6 Groundwater (id. at 6-18) Chapter 9 Air Quality (id. at 9-14) Chapter 10 GHG Emissions (id. at 10-13) Chapter 12 Aquatic Resources (id. at 12-57 12- 58) Chapter 14 Regional Economics (id. at 14-12 14-13) Chapter 15 Land Use and Agricultural Resources (id. at 15-19) Chapter 17 Environmental Justice (id. at 17-7) and Chapter 18 Power (id. at 18-10 18-11). Missing from the discussion of these impacts is any estimate as to the scale or significance of these impacts which reduce water supplies to CVP agricultural water users beyond the 9% average reduction identified on pg. 5-4. (id. at 5-6). Specifically the qualitative analysis of Alternative 2b is intended to build on the quantitative analysis however the qualitative analysis fails to provide any estimation of the extent to which Alternative 2b would increase the severity of the impacts (e.g. whether Alternative 2b would result in two or three times the amount of water supply reductions or whether the additional water supply reductions are anticipated to be minor).	
80-26	The failure of the Draft EIS to identify and evaluate the severity of the potential environmental consequences of the more frequent "real-time adjustments" that will occur under Alternative 2b is inconsistent with Reclamation's obligations under NEPA. (42 U.S.C. 4332(2)(C); 40 C.F.R. 1502.1; Great Basin Res. Watch v. Bureau of Land Mgmt. 844 F.3d 1095 1104-1106 (9th Cir. 2016) (finding an EIS deficient for failure to include a "quantified assessment" of	Alternative 2B in the Draft EIS builds on the modeling conducted for Alternative 2. The Final EIS contains updated modeling and analysis for Alternative 2 that includes the actions and assumptions of Alternative 2B. The analysis in the Final EIS is consistent with the analysis presented for Alternative 2 in the Draft EIS. The Final EIS no longer contains a separate Alternative 2B.

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	impacts.).) Anything short of an attempt to quantify the increased severity of the potential water supply impacts and related impacts to other resources categories from the implementation of Alternative 2b fails to comply with Reclamation's mandate pursuant to NEPA to take a "hard look" at the potential environmental consequences of their proposed action. (Id.)	
80-27	c. The Draft EIS Does Not Sufficiently Describe the Economic and Environmental Justice Impacts of Reduced CVP Deliveries South of the Delta As the Draft EIS recognizes the labor force that drives the agricultural economy in California predominantly consists of minority and/or low-income individuals who are concentrated in the San Joaquin Valley. (Draft EIS at 17-5.) The Draft EIS contemplates that Alternative 3 will result in a loss of 11366 agricultural jobs resulting in a 16.2% reduction in the farm worker labor force throughout the San Joaquin Valley Region. In reaching these conclusions the Draft EIS understates the actual likely impacts by failing to analyze the significant indirect economic effects across other employment sectors. The figures provided in the Draft EIS alone are drastic; however the actual impacts could be much greater taking into account the many employers and businesses that are highly dependent upon agricultural customers. For example many retailers who sell farm equipment and other supplies are dependent on productive farms and farm workers to support their businesses. When water supplies decline or become unreliable the downstream economic effects are expansive: the fields are fallowed the farm workers lose their jobs and agriculture-dependent businesses lose their income. (Appendix at 57 [Shires (2022)].)The indirect economic effects which the Draft EIS fails to explore do not end with agriculture-dependent businesses. As one study by Shires (2022) highlighted in the context of the Westlands Water District encompassing Fresno and Kings Counties "water supply and the cost of water quite literally drive the scale and	Chapter 14, Regional Economics, and Appendix Q Regional Economics Technical Appendix, present regional economic impacts with data compiled using IMPLAN data files, and IMPLAN was used to evaluate regional economic effects. IMPLAN estimates effects of various economic measures, including employment, labor income, and total value output. Employment is the number of jobs, including full-time, part-time, and seasonal positions. Labor income consists of employee compensation and proprietor's income. Value of output is the dollar value of production. IMPLAN estimates these economic measures through three types of effects: (1) direct effects, which reflect changes in final demand; (2) indirect effects, which capture changes in expenditures within the region in industries supplying goods and services; and (3) induced effects, which captures changes in expenditures of household income. The IMPLAN model and data are the best available tools to estimate regional economic impacts associated with changes in agricultural water supply. Please see Standard Response 5, Adequacy of Analysis and Mitigation, regarding adequacy of the regional economic modeling approach and the use of reliable data. Price effect revenue results would primarily result in changes to proprietor income and are not expected to result in substantial impacts on the regional economy. Consequently, indirect and induced impacts are evaluated using fixed price revenue results

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	character of the economic activity within the District." (Appendix at 39.) Therefore as water supplies are reduced or become unreliable the farm workers in this region who are the backbone of the agricultural economy are forced to leave to more dependable regions. (Id. at 57.) As the work force leaves there are additional significant impacts that are realized such as lower enrollment in schools and less money to hire teachers and staff. (Id.)To the extent Chapter 14 of the Draft EIS recognizes that "[c]hanges to irrigated acreage and agricultural revenue would impact businesses and individuals who support farming activities" under Alternative 3 (Draft EIS at 14-6) the modeling fails to account for many of the indirect impacts highlighted by Shires (2022). The Draft EIS relies upon IMPLAN to estimate reasonable economic effects based solely upon "fixed price agricultural revenue." However as page 14-6 of the Draft EIS identifies "fixed price revenue" accounts only for price adjustments for crops resulting from demand shifts. In turn the IMPLAN modeling fails to consider "price effect revenue" which accounts for other price changes caused by changes in crop production and supply shifts. (Draft EIS at 14-6.) To the extent that this analysis is driven only by price adjustments for crops and not other downstream effects associated with impacts to the agricultural sector the Draft EIS does not take the requisite "hard look" at the potential regional economic effects in the San Joaquin Valley. (See Appendix at 57 (when a farm "goes out of business . . . the overall impact on employment is much greater than the marginal impacts identified in the regional impact models because the entire staff becomes unemployed.").)By evaluating only direct job losses and increased water supply costs the Draft EIS omits any consideration of the potentially significant economic effects on other sectors of the Central Valley economy whose primary customers are employed in the agricultural sector. The failure to evaluate these potential effects is inconsistent with Reclamation's	in the draft EIS. Price effect results from SWAP modeling are presented as such in the Draft EIS.

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	requirement to take a "hard look" at potential consequences of its proposed action. (Great Basin supra at 1104-1106.)	
80-28	In addition to underestimating economic effects the Draft EIS erroneously assumes a continued supply of groundwater and increased groundwater pumping to supplement the declines in CVP and SWP deliveries. This is discussed above in our comments regarding the failure of the Draft EIS to make any quantitative estimate of limits on groundwater pumping under SGMA. While Chapter 17 of the Draft EIS makes some attempt to address the direct impacts of increased groundwater pumping (i.e. building infrastructure to dig deeper) the Draft EIS fails to analyze the significant economic impacts of fallowing within the San Joaquin Valley when both surface water and groundwater supplies run dry or when SGMA precludes increased groundwater pumping. Groundwater supplies in the San Joaquin Valley are already in jeopardy due to climate change new development and SGMA implications. As a study by Sunding et al. (2020) found the implications of SGMA and other anticipated surface water reductions within the San Joaquin Valley are expected to fallow nearly 1 million acres of crops in the coming decades resulting in a $7 billion loss in crop revenues and a nearly $2 billion loss in farm operating income. (Appendix at 7-8.) Indeed Chapter 17 of the Draft EIS anticipates that reductions in CVP and SWP deliveries could affect access to groundwater and generate new economic burdens to regain groundwater access. (Draft EIS at 17-6 ["[s]hould reduced groundwater elevations result in reduced water accessibility for residents within the San Joaquin Valley Region . . . well owners may be forced to take on additional economic burdens to modify their existing wells or pay for water from a different source."].) As discussed above the quantitative analysis of future groundwater pumping under the alternatives does not account for legal restrictions under SGMA. The Draft EIS thus fails to take a	The economic analysis of alternatives restricts groundwater pumping to annual amounts consistent with estimates in Groundwater Sustainability Plans submitted in compliance with SGMA. The analysis approach is documented in Draft EIS Appendix Q, Regional Economics Technical Appendix, Attachment 3, Statewide Agricultural Production Model Documentation. These groundwater pumping constraints apply under all alternatives, including the No Action Alternative. Therefore, the most important effects of SGMA, the reduction in available annual water supply for irrigation, are already built into the baseline. In short, the analysis shows additional impacts of the alternatives over and above impacts that have already occurred by 2040 due to SGMA implementation. In addition to limiting annual groundwater pumping to average sustainable yield, the economic analysis also considered the effect of SGMA groundwater constraints on permanent crop (orchards and vineyards) planting and removal decisions. The inability of growers to use groundwater as a buffer to offset surface water variability results in greater risk of loss to permanent crops. Appendix Q, Attachment 3, Section Q3.2.2, Selection of Perennial Crop Acreage Under Uncertainty, describes how this economic effect was evaluated and incorporated into the SWAP model analysis. Additional, please see Appendix R, Land Use and Agricultural Resources Technical Appendix, for discussion of changes in agricultural land including fallowing under proposed action and

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	"hard look" at the extent to which fallowing will occur due to reductions in both surface water and groundwater availability meaning that the potential economic impacts are likely understated.	alternatives. Fallowing is considered in the Statewide Agricultural Production (SWAP) Model, as described in Appendix Q - Attachment 3, SWAP Model Documentation. Please refer to Standard Response 9, Climate Change, regarding the consideration of climate change in the analysis provided in the EIS.
80-29	Finally the severe localized economic impacts of the alternatives in the Draft EIS are diluted by the expansive population areas included within the "San Joaquin Valley Region." While the Draft EIS recognizes that reduced surface water will lead to job losses and other impacts among the agricultural sector within the San Joaquin Valley Region---which purports to include Fresno Kern Kings Madera Merced San Joaquin Stanislaus and Tulare Counties---the Draft EIS fails to address the concentrated impacts that will be realized in Fresno Tulare Kern and Kings Counties where individuals' livelihoods are most vulnerable to further restrictions on water supply. Ground and surface water supplies do not flow equally throughout the Central Valley and whatever supplies exist are not equally allocated. Sunding et al. (2020) found that that the economic implications of groundwater pumping under SGMA including the impacts of surface water reductions are mostly concentrated in Fresno Tulare Kern and Kings Counties. (Sunding et al. (2020) at 2.) These counties "see the largest losses in employment and employee compensation" including "the largest reductions in harvested acreage and farm operating income." (Id.) Therefore the over-expansive regional economic impact analysis for the San Joaquin Valley Region dilutes the significant economic impacts of water supply reductions in areas of the Valley where those impacts will be disproportionately large.	As summarized in Attachment Q.1 (Section Q.1.2.2), models of the multi-county regions were used to measure impacts in terms of total changes in employment, income, and economic output in these regions. SWAP and CWEST model outputs are not categorized by counties. SWAP results are provided by SWAP regions that could extend beyond the county boundaries. SWAP results were inputted into Sacramento Valley and San Joaquin Valley Region IMPLAN Model. The San Joaquin Valley IMPLAN model includes eight counties (Stanislaus, San Joaquin, Madera, Merced, Fresno, Tulare, Kings and Kern Counties), household income regional economic data for all counties in the San Joaquin Valley Region have median household, mean household, and per capita incomes lower than the state average. Similarly, 2021 unemployment rates and 2017–2021 poverty rates in all counties are above state average in the San Joaquin Valley Region. Additionally, 40 Code of Federal Regulations (CFR) § 1502.15 states that environmental impact statement shall succinctly describe the environment of the area(s) to be affected by the alternatives under consideration, including the reasonably foreseeable environmental trends and planned actions in the area(s). Furthermore, 40 CFR § 1502.2(a) states that environmental impact statements shall not be encyclopedic. Reclamation has reviewed the information provided in the

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		papers mentioned in the comment and believes the environmental impact statement contains sufficient information about regional economic development impacts for understanding the potential impacts of the action alternatives. The Sunding analysis referenced in the comment estimated impacts of implementing SGMA (which is already in the baseline No Action condition of this EIS) and of other "reductions in surface deliveries" (see page 3, Sunding and Roland-Holst, Feb. 2020). Therefore, the Sunding findings and magnitudes are not directly relevant to the specific alternatives and water supply changes evaluated in the Draft EIS. The information is nonetheless included in the record for consideration by decision makers. Sunding, D., and D. Roland-Holst 2020. Blueprint Economic Impact Analysis: Phase One Results. February 15. Available: https://cawaterlibrary.net/document/water-blueprint-for-the-san-joaquin-valley-economic-impact-analysis-phase-one-results.
80-30	d. The Draft EIS Does Not Sufficiently Describe the Environmental Impacts of Reduced CVP Deliveries South of the Delta While the Draft EIS acknowledges that reduced CVP water supplies to the San Joaquin Valley "would have impacts on the availability of aquatic habitat for giant garter snake and northwestern pond turtle" (Draft EIS at 13-10) no further analysis is included. The Draft EIS states elsewhere that impacts on those listed species from reduced CVP water deliveries "are outside the scope of this alternatives analysis" because for example "Reclamation does not control the distribution of water to CVPIA wildlife refuges beyond initial water year allocations." (Draft EIR at 13-6.) It is Reclamation's water allocations under the proposed alternatives that could directly cause adverse impacts to listed species in the San Joaquin Valley.	Effects on additional species: The Draft EIS does evaluate the alternatives potential for effects on riparian woodrat, California clapper rail, white-faced ibis, Suisun song sparrow, yellow-breasted chat, least tern, California black rail, least bittern, greater sandhill crane, saltmarsh harvest mouse, common yellowthroat, yellow warbler, western snowy plover, and trinity bristle snail. While suitable habitat for these species have the potential to overlap with the project area and/or is present in some areas proposed for operational changes, the operational changes proposed under the alternatives were found not to have the potential for adverse effects on these species; therefore, no further evaluation was completed.

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	The mechanics of how that water is thereafter distributed to habitat is not relevant when compared with the effects of reducing the water allocations in the first place. The Draft EIS does not adequately analyze the potential effects of reduce water deliveries on threatened species in the San Joaquin Valley.	The determination as to whether terrestrial species would be affected was based on evaluation of the habitats within which each species occurs and the extent to which these habitats would be affected by the action alternatives. The species considered and their associated habitats are provided in Appendix P, Terrestrial Biological Resources Technical Appendix, Section P.1.8. Within each species' range, habitat was assumed to be occupied by the species for the sake of assessing effects. As such, species surveys were not necessary. In circumstances where effects on the habitat would not differ from effects under the No Action Alternative, it was determined that there would be no potential effect on the species. Impacts on Riparian Species: As described in the EIS Sections 13.2.1.2, 13.2.1.4, and 13.2.1.5, riparian habitat conditions with implementation of the action alternatives are expected to be similar to habitat conditions under the No Action Alternative. Reclamation will coordinate with USFWS to maintain summer deliveries to CVPIA refuges in a manner consistent with refuge contracts and agreed upon operational priorities.
80-31	e. The Draft EIS Understates the Severity of the Potential Adverse Effects of Alternative 3 on Groundwater Resources That Are Projected by Existing Modeling As discussed above the groundwater modeling for the Draft EIS fails to account for limitations on pumping under SGMA. The analysis of impacts to groundwater in the Draft EIS is further flawed because it fails to acknowledge the severity of adverse effects to groundwater resources that are identified in Appendix I. Figures I-20 through I-24 (Draft EIS at I-195 I-199) depict the modeled changes in groundwater elevation that would result from Alternative 3 and show simulated declines of groundwater elevation of between 100	Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium and high priority basins with overdraft conditions or 2042 for medium and high priority basins without overdraft. Each GSP that is either currently being developed or has been developed is specific to each groundwater basin/subbasin. The C2VSim groundwater model does not include specific actions for each GSP relative to parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decisions regarding basin operations as conditions warrant. A single management strategy does not

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	feet to 200 feet in certain areas particularly in the Westside Subbasin (DWR Groundwater Subbasin Number 5-22.09).In evaluating the impacts the Draft EIS states that "Alternative 3's contribution to cumulative impacts on groundwater resources is anticipated to be minimal." (Draft EIS at 224.) Contrary to this conclusion if these simulated declines in groundwater elevation were to materialize then it would result in groundwater conditions that are lower than authorized under the GSP for the Westside Basin. Also because approximately 85% of groundwater use in the Westside Subbasin is pumped from an aquifer located below "Corcoran Clay" there is a significant likelihood that a projected decline of 200 feet will contribute to subsidence that is likely to result in negative impacts to critical infrastructure. Because these simulated declines in groundwater elevation have a significant likelihood of causing impacts that would constitute "undesirable results" under SGMA as well as effects to physical infrastructure that are not analyzed Reclamation should revisit its conclusions regarding the potential cumulative impacts of Alternative 3.	exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The C2VSim model represents effects to groundwater resources that may be more substantial than when GSP provisions are fully enacted. C2VSim is the best available groundwater modeling tool given the geographic scale of the analysis and the complexity of linking to the CalSim 3 model analysis. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives. The analysis provided in Chapter 6, Groundwater, and Appendix I, Groundwater Technical Appendix, indicates the potential decrease in groundwater levels for Alternative 3 as compared to the No Action Alternative. The location and timing of the changes are shown in the figures in Appendix I. As noted in Appendix I, decreases in groundwater levels below historical low levels have the potential to induce additional subsidence in areas that have geologic conditions favorable to subsidence. Also refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.
80-32	5. Potential Future Changes to Trinity River Division Operations Should be Included in the Cumulative Effects Analysis in the Draft EIS Reclamation is currently considering changes to operations of the Trinity River Division that would affect the rest of the CVP and the resources discussed in the Draft EIR including winter-run	The Trinity River Division is part of the CVP. Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives.

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	Chinook salmon spawning and rearing in the Sacramento River. Based on information shared with "interested stakeholders" in quarterly public meetings the potential changes include establishing a minimum pool of carryover storage in Trinity Lake and limits on the volume and timing of moving water from the Trinity River to the Sacramento Valley. [Footnote 3: A PowerPoint presentation dated April 18 2024 and distributed by Reclamation describes alternatives for changes to Trinity River Division operations and the related NEPA review and ESA consultation. A copy of the presentation is included in the Appendix accompanying this letter.] Those changes to operations of the Trinity River Division if adopted could require significant revisions to the CVP operations analyzed in the Draft EIS with significant related environmental consequences. Under the current schedule for the Trinity River Division project Reclamation would make a decision on changes to operations of the Trinity River Division in late 2025.An EIS must include an analysis of cumulative effects. An EIS must analyze "the impact on the environment which results from the incremental impact of the action when added to other past present and reasonably foreseeable future actions." (40 C.F.R. 1508.1(i)(3); Oregon Natural Resources Council Fund v. Goodman 505 F.3d 884 892-93 (9th Cir. 2007) [EIS inadequate for failure to adequately discuss future impacts on listed species of two future projects].) The potential changes to the Trinity River Division now being considered for adoption by Reclamation in 2025 are not included in the cumulative effects analysis in the Draft EIS. Table Y-2 in Appendix Y is a list of reasonably foreseeable future actions included in the cumulative effects analysis. (Draft EIS at Y-16 to 21.) Changes to Trinity River Division operations are not included in Table Y-2. Appendix Y explains that Reclamation screened reasonably foreseeable future actions based on whether they are "are similar in nature with the 2021 Reinitiation of Consultation for Long-Term Operation of the Central Valley Project and State Water	

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	Project have impacts on individual resources and which overlap temporally and spatially with project-related impacts." (Draft EIS at Y-2.) The potential changes to operations of the Trinity River Division fit each of these criteria. The cumulative impacts analysis in the Draft EIS must be revised to account for potential changes to the operations of the Trinity River Division.	
80-33	6. NEPA Requires a More Robust Evaluation of the Feasibility of Mitigation Measure AG-1 Which is Identified in Chapters 11 15 and 21 of the Draft EIS The Draft EIS identifies Mitigation Measure AG-1 "Diversify Water Portfolios" which states that: Water agencies should diversify their water portfolios. Diversification could include the sustainable conjunctive use of groundwater and surface water water transfers water conservation and efficiency upgrades and increased use of recycled water or water produced through desalination where available. (Draft EIS Appendix D at D-14.) This mitigation measure has been identified as a means of reducing the potential impacts of the alternatives on the following resource categories: (1) Visual Resources (Ch. 11); (2) Land Use and Agricultural Resources (Ch. 15); and (3) Public Health and Safety (Ch. 21). As discussed below the Draft EIS fails to include a sufficient evaluation of whether Mitigation Measure AG-1 would be effective at reducing the impacts to each of these resource categories as required by NEPA.Under NEPA Reclamation is required to "discuss the extent to which adverse effects can be avoided." (Japanese Village LLC v. Federal Transit Administration 843 F.3d 445 455 (9th Cir. 2016) citing Robertson v. Methow Valley Citizens Council 490 U.S. 332 351-52 (1989) (quoting 42 U.S.C. 4332(2)(C)(ii)).) NEPA also requires an EIS to discuss appropriate and possible mitigation measures. (40 CFR 1502.14(f) 1502.16(h) 1508.25(b).) The mitigation measures "need not be legally enforceable funded or even in final form to comply with NEPA's procedural requirements" (Protect Our Communities Foundation v.	NEPA requires that an EIS include an analysis of potential means to mitigate adverse environmental effects. This analysis can include appropriate and reasonable mitigation measures that are outside the jurisdiction of the lead agency or the cooperating agencies. Such mitigation measures would not be committed to as part of the Record of Decision (ROD) issued by Reclamation. The mitigation measure identified, Mitigation Measure AG-1, relies on entities other than Reclamation to implement the measure. Because Reclamation does not have authority to implement this measure and the measure would be implemented on a voluntary basis, Reclamation cannot ensure that it will be implemented. If it is implemented, it will reduce impacts on agricultural land. As the most comprehensive environmental document, the EIS is an ideal vehicle to present not only the range of environmental effects, but also the complete spectrum of appropriate mitigation measures. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding Reclamation's process of developing and approving the ROD using the appropriate mitigation measures discussed in the EIS. Please also refer to Appendix D, Mitigation Measures, regarding discussions of how Mitigation Measure AG-1 could be implemented.

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	Jewell 825 F.3d 571 582 (9th Cir. 2016) citing Nat'l Parks & Conservation Ass'n v. U.S. Dep't of Transp. 222 F.3d 677 681 n.4 (9th Cir. 2000)) however the EIS still must discuss mitigation measures "in sufficient detail to ensure that environmental consequences have been fairly evaluated." (City of Carmel-By-the-Sea v. United States DOT 123 F.3d 1142 1154 (9th Cir. 1997) (quoting Robertson supra at 352- 53)). Specifically the Ninth Circuit in Protect Our Communities Foundation found that an "essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective" (Protect Our Communities supra at 582) and that a "mitigation discussion without at least some evaluation of effectiveness is useless in making that determination." (AquAlliance v. U.S. Bureau of Reclamation 287 F. Supp. 3d 969 1052 (E.D. 2018) citing S. Fork Band Council Of W. Shoshone Of Nevada v. U.S. Dep't of Interior 588 F.3d 718 727 (9th Cir. 2009) (hereinafter "S. Fork Band").)In S. Fork Band the court found that an EIS prepared by the Bureau of Land Management ("BLM") failed to comply with NEPA because it did not include a discussion of the effectiveness of mitigation measures relating to groundwater and instead determined that "[f]easibility and success of mitigation would depend on site-specific conditions and details of the mitigation plan." (Id.) BLM argued that this mitigation measure was sufficient because "it is impossible to predict the precise location and extent of groundwater reduction and that problems should instead be identified and addressed as they arise." (Id.) The court found that NEPA required BLM to take the hard look before the environmentally harmful actions are put into effect and that BLM was required to investigate the potential impacts in greater detail and determine the extent to which they can be avoided. (Id.)Here the Draft EIS identifies AG-1 as a mitigation measure that will potentially mitigate certain adverse effects associated with Alternative 2 but the associated analysis in the relevant chapters of	

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	the Draft EIS does not evaluate whether or not it will be effective or state that Reclamation cannot reasonably locate information to evaluate whether or not it will be effective. For example the discussion regarding Mitigation Measure AG-1 states that it "could reduce effects by encouraging water agencies to diversify their water portfolios thus increasing likelihood that water users would have adequate water" but the analysis regarding the feasibility of AG-1 simply provides that: "[b]ecause Reclamation does not have authority to implement this measure Reclamation cannot ensure that it will be implemented." (Draft EIS at 15-8 15-10.)This attempt to defer evaluation of the effectiveness of a mitigation measure does not comport with the clear requirements of NEPA. Mitigation Measure AG-1's suggestion that water agencies should "diversify" sources of water supply to compensate for losses of CVP supply is not particularly helpful. The Draft EIS does not analyze what more water agencies can feasibly do. Whether any substitute water supplies are available or at what cost is not addressed anywhere in the Draft EIS. The Water Authority's member agencies are already leaders in water conservation and are actively engaged in groundwater recharge projects. Supplies of transfer water are already scarce and expensive and would be made more so by the proposed changes to CVP operations. And water that is never delivered to the region cannot be recycled. Reclamation suggests that it is not required to evaluate whether Mitigation Measure AG-1 can feasibly be implemented. To the contrary like the groundwater mitigation that was at issue in S. Fork Band Reclamation is required to at least attempt to understand whether there are replacement water supplies that can be made available to offset potential impacts. (S. Fork Band supra at 727.) Because the Draft EIS does not contain any evaluation of whether there are replacement water supplies available to offset losses of CVP supply the Draft EIS does not contain the "evaluation of effectiveness" of Mitigation Measure AG-1 that is required under NEPA. (Id.)	

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80-34	7. The Draft EIS Fails to Adequately Address Potential Mitigation Measures Alternative 2 would result in a maximum reduction of approximately 9% in average annual deliveries to CVP agricultural water users. (Draft EIS at 5-4.) Additionally Alternative 2b would result in additional unquantified impacts to water exports that would primarily impact CVP agricultural water users. (Draft EIS at 5-6.) The use of average annual losses masks the even more severe impacts in dry and critical years and consecutive dry or critical years. The impact of dry and critical years can exacerbate the environmental effects of a long-term loss of supply. The cascade of potential environmental consequences associated with these water supply reductions on particular resource categories are briefly discussed in several sections of the Draft EIS including Chapter 5 Water Supply Chapter 6 Groundwater Chapter 9 Air Quality Chapter 14 Regional Economics and Chapter 17 Environmental Justice. The Draft EIS does not identify any mitigation measures at all for these resource categories not even the unexamined Mitigation Measure AG-1. (Draft EIS at Appendix D.)As noted above NEPA requires that Reclamation "discuss the extent to which adverse effects can be avoided." (Japanese Village LLC supra at 455.) NEPA also requires an EIS to discuss appropriate and possible mitigation measures (40 CFR 1502.14(f) 1502.16(h) 1508.25(b)) in "sufficient detail to ensure that environmental consequences have been fairly evaluated." (City of Carmel-By-the-Sea v. United States DOT 123 F.3d 1142 1154 (quoting Robertson supra at 352-53)).Because the Draft EIS does not identify mitigation measures that are intended to address the potential environmental consequences associated with reductions in water supply to CVP agricultural water users it does not to comply with NEPA's requirement to evaluate the extent to which adverse effects can be avoided.	Please refer to Appendix D, Mitigation Measures, for a detailed description of mitigation measures identified for water supply resources for Alternative 2. As noted in EIS Chapter 5, Water Supply, on page 5-10, these mitigation measures include avoidance and minimization measures that are part of each alternative and, where appropriate, additional mitigation to lessen impacts of the alternatives. Additionally, for water supply, avoidance and minimization measures generally include measures identified for water resources. NEPA requires that an EIS include an analysis of potential means to mitigate adverse environmental effects. This analysis can include appropriate and reasonable mitigation measures that are outside the jurisdiction of the lead agency or the cooperating agencies. Such mitigation measures would not be committed to as part of the Record of Decision (ROD) issued by Reclamation. The mitigation measure identified, Mitigation Measure AG-1, relies on entities other than Reclamation to implement the measure. Because Reclamation does not have authority to implement this measure and the measure would be implemented on a voluntary basis, Reclamation cannot ensure that it will be implemented. If it is implemented, it will reduce impacts on agricultural land. As the most comprehensive environmental document, the EIS is an ideal vehicle to present not only the range of environmental effects, but also the complete spectrum of appropriate mitigation measures. The Final EIS includes updated modeling and analysis for Alternative 2 that includes the actions and assumptions of Alternative 2B. The Final EIS no longer contains a separate discussion for Alternative 2B.

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		The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Please refer to Chapter 5 and Appendix H, Water Supply Technical Appendix, for a quantification of potential impacts on water supply from the alternatives. In following the CEQ guidance on the formulation of mitigation, Reclamation necessarily and appropriately relied on the professional resource area authors' expertise in and experience with assessing mitigation needs and developing mitigation measures. Reclamation also drew on expertise outside the agency to help identify and develop mitigation. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS and discussion of mitigation measures.
80-35	8. Durable Legally Defensible Environmental Review Is In The Collective Interest of the Federal Agencies and Water Users The Water Authority understands that evaluating changes to the operating regime of the CVP is a complex and time-consuming task and that agency resources are limited. The Water Authority appreciates the efforts by federal agency staff to provide opportunity for review and comment on administrative drafts of the EIS and the biological opinions. But as the Water Authority has explained in its prior comment letters the administrative drafts provided were materially incomplete. The Water Authority has not been provided the opportunity for review and comment required by section 4004 of the WIIN Act. The Draft EIS too is materially lacking in many ways as described above. It is in the Water Authority's and the Federal Agencies' collective interest to complete the current NEPA and ESA consultations with a durable legally defensible EIS and Record of Decision and durable legally defensible biological opinions. The operations of the CVP are	Reclamation carefully reviewed and incorporated feedback, as appropriate, from the cooperating agencies on early drafts of the EIS, which is reflected in the 2024 Public Draft EIS. Comments not reflected in the Public Draft EIS were evaluated, but Reclamation determined text revisions in response to the comments were not appropriate. The 2024 Public Draft EIS provides a meaningful analysis of potential direct, indirect, and cumulative impacts of the alternatives. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis in the EIS consistent with the requirements of the National Environmental Policy Act. Refer to Standard Response 2, Related Regulatory Processes, regarding the Biological Assessment process, the Biological Opinion process, the timing and preparation of the Biological

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	simply too important to have incomplete or partial analysis that creates potential legal exposure.	Assessment, the issuance of the Biological Opinion, and the timing of NEPA review and Section 7 consultation studies and processes.
80-36	Conclusion In conclusion the Water Authority thanks Reclamation for this opportunity to review and comment on the Draft EIS. The Water Authority looks forward to opportunities to continue to engage with Reclamation and all responsible agencies to develop a plan for future operations of the CVP that best serves its multiple purposes and recognizes the vital importance of CVP water supply for the region served by the Water Authority's member agencies. Respectfully submitted [names and email addresses redacted] From: [name and email address redacted] Sent: Monday September 9 2024 4:11 PMTo: BDO Comments BOR MPR Cc: [names redacted] Subject: [EXTERNAL] SLDMWA et al. Comments on the Draft Environmental Impact Statement for the Long-Term Operations of the Central Valley Project Attachments: 2024-09-09 FINAL SLDMWA et al. Comment Letter on Draft Environmental Impact Statement for Long-Term Operations of CVP.pdf; 2024-09-09 Exhibit B Comment Matrix with SLDMWA Comments on LTO 2024 Public Draft EIS.xlsx This email has been received from outside of DOI - Use caution before clicking on links opening attachments or responding. Dear Mr. Warner Attached to this email are comments from the San Luis & Delta-Mendota Water Authority etal. on the Draft Environmental Impact Statement for the Long-Term Operations of the Central Valley Project. Please let me know if you have any difficulties opening the attachments to this email. Thank you. [names, email address, address, and phone numbers redacted] CONFIDENTIALITY: This communication may contain confidential information. If you are not the intended recipient or believe that you have received this communication in error please do not print copy retransmit disseminate or otherwise use the information. Also please indicate to the sender that you have received this email in	Reclamation appreciates public comments. This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.

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	error and delete the copy you received. To help protect y our privacy Microsoft Office prevented automatic download of this picture from the Internet.	
80-37	ATTACHMENT 1:[See F_LTO_0080_San_Luis_&_Delta-Mendota_Water_Authority_SLDWA_etal_Att_1.pdf for an appendix and many other supplemental studies titled "Appendix to SLDMWA Comment Letter On Draft Environmental Impact Statement"]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
80-38	ATTACHMENT 2: 2024 LTO Cooperating Agency Public Draft EIS Comment Matrix Agency/Commenter Name/Title: San Luis & Delta-Mendota Water Authority Date: 9/9/2024 Chapter Number/ Appendix Letter Section Number and Title Paragraph (P) # Sentence (S) # Figure # or Table # Page Number Comment/Text Insert	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
80-39	ES 0.1.1 p.0-2: Description indicates that reinitiation was to "address the required review and to voluntarily reconcile CVP operating criteria as appropriate with operational requirements of the SWP under the California Endangered Species Act." This is an unauthorized trigger for reinitiation of consultation under the ESA.	As described in the EIS Executive Summary, Executive Order 13990, issued in 2021, directed the Department of the Interior to review federal actions issued or adopted between January 20, 2017, and January 20, 2021. These included the 2019 NMFS BiOp on the Long-Term Operations of the CVP and SWP and the 2019 USFWS BiOp for Reinitiation of Consultation on the Coordinated Operations of the CVP and SWP. The Department of Interior's review and subsequent decision reinitiate Section 7 consultation to reconcile the long term operations of the CVP and SWP is a federal action that triggered the requirement for NEPA review.
80-40	ES 0.2 p.0-3: Alternative 3 proposes "operation to increased Delta outflow up to 65% of unimpaired inflow and to carryover storage requirements in addition to other measures." Inappropriate / infeasible should be screened from consideration.	Please see Standard Response 4, Alternatives Formulation, regarding alternatives development and the range and feasibility of the alternatives evaluated in the EIS. Refer to Appendix E, Draft Alternatives, for a description of the screening process used to focus and refine each of the alternatives carried forward for detailed analysis.

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80-41	ES 0.2 p.0-3: The addition of Alternative 2b is concerning as it incorporates ITP requirements that are not specific to the federal requirements.	Please refer to Standard Response 10, Voluntary Agreements, regarding the scope and extent of the Voluntary Agreements (aka agreements to support healthy rivers and landscapes) included in Alternative 2 and evaluated in the EIS. Please also refer to Appendix E, Draft Alternatives, regarding justification for including the Voluntary Agreements in the EIS and the conditions in which the CVP and SWP would operate consistent with the Voluntary Agreements. Alternative 2 actions were developed to voluntarily harmonize operational requirements of the CVP with CESA requirements for the SWP as appropriate and consistent with Reclamation's authorities. As stated in the EIS, although Reclamation and DWR strive for a coordinated operation of the CVP and SWP, Reclamation and the CVP are not subject to requirements under CESA. Please refer to Standard Response 2, Related Regulatory Responses, regarding the Bureau of Reclamation's compliance with applicable laws and regulations.
80-42	ES 0.2 p.0-4: The Executive Summary should include a short description of why several different Alternative 2 variants are included.	Thank you for the comment. A short description has been added to the Executive Summary in the Final EIS.
80-43	ES 0.2 p.0-4: Since Sub-Alternative 2b was not included in quantitative modeling it is all the more important to include evidence here for why it was selected and how it best meets purpose and need.	Alternative 2B builds on the modeling for Alternative 2. The Final EIS modeling has been updated to include the assumptions and actions under Alternative 2B in Alternative 2. The modeling provided in the Final EIS does not present effects significantly different from those presented in the Draft EIS.
80-44	ES 0.2 pp.0-3 - 0-4: Alternative 2b includes components developed by CDFW/DWR during pending ITP application process for the SWP. These components developed during the pending ITP application process are anticipated to result in changes on Delta exports from more restrictive QUEST criteria. It is inappropriate to	Alternative 2 actions were developed to voluntarily harmonize operational requirements of the CVP with CESA requirements for the SWP as appropriate and consistent with Reclamation's authorities. As stated in the EIS, although Reclamation and DWR strive for a coordinated operation of the CVP and SWP, Reclamation and the CVP are not subject to requirements under

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	apply measures developed pursuant to CESA on BOR who is not subject to CESA.	CESA. Please refer to Standard Response 2, Related Regulatory Responses, regarding the Bureau of Reclamation's compliance with applicable laws and regulations.
80-45	ES 0.2 p.0-4: It is inappropriate to identify Alternative 2b as the preferred alternative because it contains operational criteria that do not satisfy Reclamation's contractual obligations to deliver water.	Alternatives are not rendered infeasible simply due to their potential to result in environmental impacts, including water supply impacts; NEPA is a procedural statute that requires only that an agency take a "hard look" at the consequences of its actions. Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, and Standard Response 4, Alternatives Formulation, regarding the purpose and need for Reclamation's action and the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Reclamation appreciates this input and intends to comply with its contract. In doing so, Reclamation will comply with applicable federal laws and regulations.
80-46	ES Figure 0-7 thru 0-14 pp.0-10 - 0-17: Please revise figure labels so that the Alternative 2 variants are distinguishable from one another (the titles for figures depicting modeling results are cut off).	Figures have been updated for the Final EIS.
80-47	ES 0.3.2.3 p.0-10: ""Average annual deliveries to CVP M&I water users south of the Delta would remain similar under Alternatives 1 2 and 4 and would decrease under Alternative 3 when compared to the No Action Alternative." Please include bar graphs similar to Figure 0-11 and Figure 0-12 to display how water deliveries to M&I contractors would also remain similar.	The requested figure has been added to the Final EIS.
80-48	ES 0.3.2.5 p.0-15: "Section 0.3.2.5 states "Average annual deliveries to SWP agricultural and M&I water users south of the Delta would increase under Alternatives 1 2 and 4 decrease under Alternative	For CVP agricultural contractors south of the Delta, as noted in Section 0.3.2.3, under Alternative 1, there would be an increase in water supply deliveries for CVP agricultural contractors south

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	3." Because deliveries are projected to increase for SWP contractors but decrease for CVP SOD ag contractors the vast majority of water supply impacts from export cuts identified in the EIS will fall directly on CVP SOD ag contractors.	of the Delta. Under Alternatives 2, 3. and 4, deliveries to CVP agricultural water users would decrease. Please refer to Appendix H, Water Supply Technical Appendix, Section H.2, Evaluation of Alternatives, which presents a more detailed analysis of deliveries to SWP Agriculture and M&I users.
80-49	ES 0.3.2.5 Figures 0-13 and 0-14 pp.0-16 - 0-17: Please distinguish Ag water from M&I water in Figure 0-13 and Figure 0-14.	Please refer to Chapter 5, Water Supply, and Appendix H, Water Supply Technical Appendix, for a detailed analysis of water supply impacts separated by Agricultural and M&I use. NEPA regulations limit the number of pages and favor the use of appendices for technical information that supports the analysis.
80-50	ES 0.3.3 p.0-17: Discussion reports that changes to CVP/SWP operations may result in water users changing their amount of GW pumping to offset reductions in surface water supply. No reference made to the Sustainable Groundwater Management Act ("SGMA") or the fact that GW pumping may not be permitted to increase in response to surface water changes. Analysis of anticipated effects will need to be included to address physical changes resulting from decreased surface water supply in the Tracy Delta-Mendota and Westside subbasins two of which have approved Groundwater Sustainability Plans.	Please see Chapter 6 and Appendix I, Groundwater Technical Appendix, for a discussion about SGMA and the impact analysis conducted. Please note a section on the Westside Subbasin has been added to Appendix I.
80-51	ES 0.3.5.1 p.0-39: Giant Garter Snake Alternative 2 should also include the historical fallowing from the Long-term N-S Water Transfer program.	Reclamation has a separate program for North-South Water Transfers (NSWT) Project that is analyzed and described in a separate analysis. Refer to Appendix Y, Cumulative Analysis, Table Y-1 for a discussion of North-South Water Transfers (NSWT) Project. NSWT Project transfers are included in Alternatives 2 and 4 which includes the operational aspect of water transfer but does not include making the water available for transfer. NSWT

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		Project is included as a reasonably foreseeable action for the purposes of the cumulative impact analysis.
80-52	ES 0.3.6 Figure 0-33 p.0-46: Figure 0-33 presents estimates of Central Valley Chinook salmon abundance under each of the alternatives in the Executive Summary but there is no corresponding figure or discussion in Chapter 12. Figure 0-33 shows virtually no difference among alternatives and should be included in Chapter 12.	Figure 0-33 in the Executive Summary is from an analysis of prey availability for Southern Resident killer whales in the Pacific Ocean. This analysis looks at all runs of Chinook salmon, including hatchery origin fish, which are not included in the designated ESUs. The conclusions from this analysis are included in Chapter 12, Fish and Aquatic Resources, under the Nearshore Pacific Ocean section. The organization of the Effects of the Alternatives section is by geography, and therefore the SRKW analysis would not be appropriate for inclusion in the Sacramento River section or the American River section, as the estimates are on ocean abundance.
80-53	ES 0.3.6 Figure 0-34 p.0-47 Figure 0-34 presents estimates of adult Chinook salmon abundance in the Pacific Ocean under each of the alternatives in the Executive Summary but there is no corresponding figure or discussion in Chapter 12. The Figure 0-34 shows virtually no difference among alternatives and should be included in Chapter 12.	Figure 0-34 in the Executive Summary is from an analysis of prey availability for Southern Resident killer whales in the Pacific Ocean. This analysis looks at all runs of Chinook salmon, including hatchery origin fish, which are not included in the designated ESUs. The conclusions from this analysis are included in Chapter 12, Fish and Aquatic Resources, under the Nearshore Pacific Ocean section. The organization of the Effects of the Alternatives section is by geography, and therefore the SRKW analysis would not be appropriate for inclusion in the Sacramento River section or the American River section, as the estimates are on ocean abundance.
80-54	ES 0.4 p. 0-51: There is no clear plan to address the Issues of Dispute or DEIS comment response.	40 CFR § 1502.12 calls for environmental impact statements to summarize major conclusions and any disputed issues raised by agencies and the public. Reclamation identified those issues in Section 0.4 of the EIS Executive Summary.
80-55	ES 0.5 p. 0-52: Issues to be Resolved - What are the sideboards for including or not including Trinity? How would it impact the preferred Alternative?	The Trinity River Division is part of the CVP. The alternatives in the Draft EIS include the continued implementation of the 2000 Trinity ROD flows. Please refer to Standard Response 8, Trinity

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		River Division, for the steps regarding future potential modifications to Trinity River Division.
80-56	ES 0.5.2 p.0-52: The current approach of separately consulting on Trinity River Division ("TRD") operations is problematic. NEPA analysis on CVP operations previously completed in 2000 and 2017 does not include effects of those operations on coho salmon. It is problematic for BOR to "expect[] to update the analysis presented in this document to reflect changes to [TRD] operations if there are different impacts as a result of decision on the [TRD]." While still in process the alternatives being analyzed in the pending evaluation of TRD operations would all change TRD operations meaning that future impacts on the species and water supply total analyzed in this document will be guaranteed to change. This reality suggests that the changes to CVP operations can only be meaningfully evaluated once the changes to TRD operations are known.	The Trinity River Division is part of the CVP. Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives.
80-57	ES and Chapter 12 0.3.4 pp.0-20 - 0-37: The discussion of the effects of each alternative on fishery resources in the Delta is predominantly qualitative using descriptive terms such as "is expected to have an adverse or beneficial impact" "is expected to have minor adverse or beneficial impacts" is expected to have negligible impacts" and "is expected to have minor to moderate" effects. There is no standardized criteria presented in the draft EIS that define what constitutes a minor impact from a negligible or moderate impact. Reliance on these qualitative descriptions makes it impossible to compare and evaluate the potential significance of differences among alternatives.	Please see the Summary of Impacts Table (Table O-282) in Appendix O Fish and Aquatic Resources. Reclamation acknowledges the comment and will consider modifying the structure to present results for future environmental documents. The context and magnitude of impacts are discussed throughout Chapter 12 and Appendix O and uses qualitative and quantitative approaches appropriate for supporting impact conclusions. Individual subject-matter experts did not use a standardized descriptor for impacts, and there were no set descriptors established that overlapped analysis throughout the document. Due to the extensive and diverse nature of the information, it was not appropriate to set universal descriptors. For example, a 1-5% increase in flows may be categorized as minimal while a 4% increase in survival (within that 1-5% range) may not be minimal, particularly in a dry or critically dry water year type. A

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		5% increase in flows in the mainstem Sacramento River will not be categorized the same as a 5% increase in flows in Clear Creek. Subject matter experts integrated the information to provide the analysis in the EIS, as it was not deemed appropriate to use set descriptors and these determinations were left to expert judgment. The EIS has been prepared in compliance with NEPA and evaluates the reasonable range of direct, indirect and cumulative potential impacts that may result from the alternatives. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. Please also refer to Standard Response 7, Aquatic Resources, regarding concerns about adverse project impacts on salmonids and other fishes.
80-58	ES and Chapter 12 0.3.4 Figure 0-20 pp.0-20 - 0-37: The differences in fishery-impact metrics among alternatives is so small that the EIS cannot present a scientific basis or rationale for selecting one alternative over another. For example Figures 0-33 0-34 and 0-20 re-presented below fail to differentiate substantive differences among the alternatives. That implies that several factors may be relevant to the credibility and accuracy of the EIS analyses and associated findings; those include (1) the alternatives are all so similar as to not provide for a meaningful comparison (2) the analytic models and analyses used in preparing the EIS are ill-suited to the task and results are so variable and uncertain that they are not able to distinguish the benefits and impacts attending each of the alternatives (3) quantitative analyses were performed but not used to assess the frequency magnitude or duration of beneficial or adverse impacts; they are not presented or referred to in the EIS Executive Summary or Chapter 12 rather are relegated to a 1500-page technical appendix with just a qualitative descriptive summary of results presented in the main body of the EIS.[See original attachment for Figure 12-3 Boxplots of predicted mean	Figure 0-33 in the Executive Summary displays results from an analysis of prey availability for Southern Resident Killer Whales in the Pacific Ocean (Attachment F.7). This analysis looks at all runs of Chinook salmon, including hatchery origin fish, which are not included in the designated ESUs. The conclusions from this analysis are included in Chapter 12, under the Nearshore Pacific Ocean section. The Effects of the Alternatives section is organized by geography, and therefore the Southern Resident Killer Whale analysis would not be appropriate for inclusion in the Sacramento River section or the American River section, as the estimates are on ocean abundance. Please see Standard Response 7, Aquatic Resources, section titled Application of Modeling Results and Evaluation of Impacts and section titled Structure of the Aquatics Analysis for details on the structure and location of the quantitative analyses used to assess impacts of the aquatic biological resources. The context and magnitude of impacts are discussed throughout Chapter 12 and Appendix O. The extensive analyses

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	through-Delta survival across all routes; Figure 0-33 Central Valley Chinook Salmon Abundance; and Figure 0-34 Estimates of adult Central Valley Chinook salmon abundance]	used for the evaluation of impacts on aquatic species demonstrated a range of differences between the alternatives. Some were smaller and some larger. Furthermore, even small differences may result in larger impacts, and therefore, the interpretation of the model results were assessed by expert opinion in Appendix O. Please see Standard Response 7, Aquatic Resources, section titled Application of Modeling Results and Evaluation of Impacts. Also, please see Standard Response 5, Adequacy of Analysis and Mitigation. Finally, refer to Standard Response 2, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives. 40 Code of Federal Regulations § 1502.7 requires that the main chapters of final environmental impact statements shall not exceed 300 pages. It was not possible to fit the the content of all of the lines of evidence with detailed impact analyses by each species and life stage from Appendix O within these requirements.
80-59	1 p.1-1: "Although Reclamation and DWR strive for a coordinated operation of the CVP and SWP Reclamation and the CVP are not subject to requirements under the California Endangered Species Act." We appreciate that Reclamation has acknowledged it is not subject to CESA.	As stated by the commenter and in the EIS, Reclamation and the CVP are not subject to requirements under CESA.
80-60	2 2.2 p.2-2: Suggest correcting "C.W. Bill Jones Pumping Plant" to C.W. "Bill" Jones Pumping Plant ("Jones Pumping Plant") here and throughout document.	Reclamation appreciates this comment. No changes have been made to the EIS in response to this comment.
80-61	2 2.2 Figure 2-1 p. 2-3: What is the change in the study area from the No Action (2020 LTO) to this project? Are there expanded	The current No Action Alternative as described in the Draft EIS would continue implementation of the 2020 Record of Decision on the Reinitiation of Consultation on the Coordinated Long-

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	areas in the south in Orange and San Diego Counties? Make sure all maps have appropriate labels and legends.	Term Operation of the CVP and SWP. In 2020, Reclamation approved what was then called Alternative 1, so that the current No Action Alternative is reflective of Alternative 1 from the 2020 ROD. Figure 2-1 in Chapter 2, Purpose and Need, is meant to be a high-level overview of the study area within the entire state of California and has appropriate labels for understanding the study area in combination with the corresponding narrative. The Study Area is the same as the Study Area in the 2019 LTO EIS.
80-62	3 3.1.2 p.3-7: Carryover comment - focus on Clear Creek operations is too narrow; entire TRD should be included.	The Trinity River Division is part of the CVP. The alternatives in the Draft EIS include the continued implementation of the 2000 Trinity ROD flows. Please refer to Standard Response 8, Trinity River Division, for the steps regarding future potential modifications to Trinity River Division.
80-63	3 3.2.4.9 p. 3-33: Is Reclamation going to continue the Delta Smelt Supplementation? When does the project end or is it being extended? 2019 + 5 = 2024 ?	Reclamation and DWR, through the Culture and Supplementation of Smelt Steering Committee, will continue to collaborate with USFWS and CDFW on the development of a program to conduct supplementation of the wild Delta smelt population with propagated fish consistent with USFWS' Supplementation Strategy (U.S. Fish and Wildlife Service 2020). The USFWS and CDFW may update the Supplementation Strategy in coordination with Reclamation and DWR with the next update expected in 2025.
80-64	3 3.2.4.10 p. 3-33: Fall X2 - based on recent studies this should be revised or removed from the Proposed Action and various alternatives.	As a result of recent scientific findings, including the 2024 draft USFWS Biological Opinion, Reclamation has modified Alternative 4 to remove the Fall X2 requirement. In addition, Reclamation has conducted a Summer X2 sensitivity analysis that includes above normal wet years, export reductions, releases from storage, and Fall X2 located at 85 km. A June action that uses a one-month block of water equivalent to what had been used for Fall X2, Delta outflow no greater than 10,000

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		cfs (split between CVP and SWP in accordance with COA) and using both export reductions and storage withdrawals to meet outflow requirements. The No Action Alternative and Alternative 2 do include the Fall X2 provision as described in the 2019 USFWS Biological Opinion. Please refer to Standard Response 11, Summer Fall Habitat Action for additional information regarding a summer and fall habitat action.
80-65	3 3.2.7 p. 3-36: For Monitoring and 3.2.9 Drought we suggest "incorporating by reference" and add the citation from the 2020 EIS if it remains unchanged.	The text has been edited for clarity. Please see Appendix E, Draft Alternatives, for a more thorough description of the component.
80-66	3 3.2.9 pp.3-363-37: For Monitoring and 3.2.9 Drought we suggest "incorporating by reference" and add the citation from the 2020 EIS if it remains unchanged.	The text has been edited for clarity. Please see Appendix E, Draft Alternatives, for a more thorough description of the component.
80-67	3 3.3.6 P1 p. 3-42: Section 3.3.6 states that BOR would continue implementation of the SJRRP as an independent related activity. However there is no reference to other operations of the Friant Division / SJR facilities which are also implemented by BOR.	Releases from Friant Dam would not be modified as part of the LTO NEPA process. Releases are implemented by the Record of Decision on the San Joaquin River Restoration Program. `
80-68	3 3.4 P1 S1 p.3-42: Statement that Alternative 2 "represents actions and tradeoffs made to reach consensus among Reclamation CDFW DWR NMFS and USFWS" and includes "actions and approaches identified by the state and federal fish agencies" is reflective of problematic approach to Alternative 2. Operations must comply with the federal ESA not CESA.	Alternative 2 actions were developed with the CDFW, DWR, NMFS, and USFWS to voluntarily harmonize operational requirements of CVP with CESA requirements for the SWP as appropriate and consistent with Reclamation's authorities. Although Reclamation and DWR strive for a coordinated operation of the CVP and SWP, Reclamation and the CVP are not subject to requirements under CESA. Please refer to Standard Response 2, Related Regulatory Responses, regarding the Bureau of Reclamation's compliance with applicable laws

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		and regulations.
80-69	3 3.4 p.3-43: Alternative 2B is not discussed in the Fish and Aquatics Resources chapter (Chapter 12). Instead Chapter 12 states that the impacts of Alternative 2B on Fish and Aquatic resources will be discussed in Appendix O. However Appendix O also does not provide an evaluation of Alternative 2B. Therefore it is difficult to compare the potential impacts of this Alternative to the other versions of Alternative 2. Also there is no evaluation of which version of Alternative 2 best meets the purpose and need for the Proposed Action. Please revise the EIS to include an evaluation of the impacts of Alternative 2B and to explain how well each alternative satisfies the purpose and need of the Proposed Action.	Alternative 2B builds in the DEIS built upon the modeling for Alternative 2. Updated modeling for the Final EIS, Alternative 2 has been included in the Final EIS, which includes revised to also include the assumptions and actions under Alternative 2B. There are no significant changes between the results for Alternative 2 in the Final EIS and Draft EIS. The Final EIS does not contain a separate Alternative 2B.
80-70	3 3.4 P4 S1 p.3-43: The statement that Alternative 2b "includes components developed by CDFW and DWR recently during DWR's current Incidental Take Permit application process for the SWP" is problematic. In addition the document states that those components of Alternative 2b "are not included in water operations modeling." Excluding those components of Alternative 2b from the modeling prevents any meaningful analysis of water supply impacts (and other impacts).	The Final EIS modeling has been updated to include the assumptions and actions from Alternative 2B in Alternative 2. The modeling provided in the Final EIS does not present effects significantly different from those presented in the Draft EIS.
80-71	3 3.4.2.1 P1 p.3-46: Alternative 2. It is unclear whether the stated assumptions regarding the available water supplies from Trinity Reservoir are feasible given potential changes to TRD operations that are currently pending consultation / NEPA review.	The Trinity River Division is part of the CVP. Refer to Standard Response 8, Trinity River Division, regarding future proposed modifications to the continued implementation of the 2000 Trinity ROD assumptions in the Draft EIS alternatives.
80-72	3 3.4.4.4 p. 3-53: Recommend revising the Steelhead Weekly Distributed Loss Thresholds to incorporate the proposed measures for geometric mean for loss.	Alternative 2 is within the reasonable range of alternatives and includes an Adaptive Management Program. Proposed modifications to thresholds associated with Alternative 2 can be explored as part of that process. Reclamation will evaluate if proposed modifications are within the effects analyzed.

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80-73	3 3.4.4.8 P1 and P2 p.3-54: Alternative 2. We encourage BOR to eliminate fall X2 from all alternatives given recent findings that there are no discernible benefit to species (see draft FWS BiOp).	As a result of recent scientific findings, including the 2024 draft USFWS Biological Opinion, Reclamation has modified Alternative 4 to remove the Fall X2 requirement. In addition, Reclamation has conducted a Summer X2 sensitivity analysis that includes above normal wet years, export reductions, releases from storage, and Fall X2 located at 85 km. A June action that uses a one-month block of water equivalent to what had been used for Fall X2, Delta outflow no greater than 10,000 cfs (split between CVP and SWP in accordance with COA) and using both export reductions and storage withdrawals to meet outflow requirements. 1. The No Action Alternative and Alternative 2 do include the Fall X2 provision as described in the 2019 USFWS Biological Opinion. Please refer to Standard Response 11, Summer Fall Habitat Action, for additional information regarding a summer and fall habitat action.
80-74	3 3.4.6 P1 p.3-56: Alternative 1. Document indicates that BOR would continue implementation of the San Joaquin River Restoration Plan ("SJRRP") as an independent related activity. However there is no reference to other operations of the Friant Division / SJR facilities.	A portion of the water from the upper San Joaquin River is stored in Millerton Reservoir behind Friant Dam. The flows out of Friant Dam would not be modified as part of this NEPA process.
80-75	4 4.2.3 p. 4-12: Why are "more restrictive" WQ criteria being applied? Is this a requirement for the federal action?	The section of the EIS referenced in this comment does not describe any more restrictive water quality criteria being applied. This section describes that Alternative 2B could be more restrictive on Delta exports, associated with the QWEST criteria under this alternative. QWEST is a flow variable representing net San Joaquin River flow, not a water quality criterion. More restrictive water quality criteria are not a component of Alternative 2B or any other EIS alternative. Modeling for Alternative 2 has been revised to include the

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		assumptions and actions under Alternative 2. Please refer to Chapter 4, Water Quality, for updated analysis. The analysis in the Final EIS continues to be consistent with the analysis presented in Chapter 4 of the Draft EIS.
80-76	4 4.4 p. 4-18: There needs to be a more detailed description of the cumulative impacts in the main EIS document. Perhaps a summary table or set of graphs?	The EIS has been prepared in compliance with NEPA, and it is subject to page limit requirements. NEPA regulations limit the number of pages and favors the use of appendices for technical information that supports the analysis. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding adequacy of the cumulative impact analysis. Please also refer to Chapters 4–22 regarding the analysis of potential cumulative impacts for each environmental resource topic evaluated by the EIS. Finally, please refer to Appendix Y, Cumulative Impacts Technical Appendix, for a more detailed description of cumulative impacts associated with the alternatives.
80-77	5 5.1.1 : At a minimum the water supply section should include a qualitative discussion of difference between Water Supply impacts under Alternative 2 and Alternative 2b. This discussion should also be in the Executive Summary.	Alternative 2B built upon modeling conducted for Alternative 2. Modeling for Alternative 2 has been updated in the Final EIS to include actions and assumptions of Alternative 2B. The modeling in the Final EIS for Alternative 2 does not show substantive changes from the modeling in the Draft EIS for Alternative 2. The Final EIS does not contain a separate Alternative 2B.
80-78	5 5.1.1.1 P2-P5 p.5-3 : Reference to average annual delivery changes (e.g. "Alternative 3 would reduce (by approximately 11%) average annual deliveries to CVP agricultural water users") are misleading/mask impacts in critical and dry year types. Description should provide info for different year types (e.g. total reductions in dry/critically dry years or after a multiple dry year scenario). 5 5.1.1 : Comment above applies to the evaluation of water supply impacts for all alternatives i.e. the average annual changes need to be supplemented by discussion of water supply impacts in various year types.	Please refer to Appendix H, Water Supply Technical Appendix, for the changes to water supply during critical and dry year types. NEPA regulations limit the number of pages and favor the use of appendices for technical information that supports the analysis.

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80-79	5 5.1.1.3 P3 p.5-6: Confusing paragraph. States "Alternative 2b is anticipated to be more restrictive than Alternative 2 and the No Action Alternative on Delta exports. CalSim results (Alternative 2v2) shows that the changes in QWEST criteria would increase the number of times during January through June when the trigger could apply by up to 68 months (out of 1200 months) over the 100-year record. This increased occurrence would result in a decrease of water supply." There is no explanation of "what trigger" is being referenced or what volume of decrease in water supply and to what contractors. More information is required.	Alternative 2B built upon modeling conducted for Alternative 2. Modeling for Alternative 2 has been updated in the Final EIS to include actions and assumptions of Alternative 2B. The modeling in the Final EIS for Alternative 2 does not show substantive changes from the modeling in the Draft EIS for Alternative 2. The Final EIS does not contain a separate Alternative 2B.
80-80	5 5.2 P1 p.5-10: Question whether statement that "No additional mitigation measures have been identified for water supply resources" is appropriate given Reclamation's statutory and contractual obligations to optimize water supplies.	Please see Standard Response 5, Adequacy of Analysis and Mitigation, for a discussion about the adequacy of mitigation included in the EIS. Refer to Chapter 2, Purpose and Need, regarding the purpose of the action considered, which is to continue the operation of the CVP and the SWP, for authorized purposes including flood control and navigation; water supply; fish and wildlife mitigation, protection, and restoration and enhancement; and power generation. Operation of the CVP and SWP also provides recreation and water quality benefits. Reclamation's action includes the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Please refer to Chapter 5, Water Supply, and Appendix H, Water Supply Technical Appendix, for a quantification of potential impacts on water supply from the alternatives.

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80-81	6 6.1 6.2 pp.6-2 - 6-5: The sections regarding the groundwater basins that will be potentially impacted and the methods and tools for evaluating effects to groundwater supplies do not take into account the restrictions on groundwater pumping that exist as a result of SGMA. Many of the potentially effected basins are subject to Groundwater Sustainability Plans that restrict increased pumping and the failure to identify those restrictions results in a skewed understanding of both the impacts to groundwater but also the impacts to a variety of other resource categories that are evaluated including visual resources land use and agricultural resources water supply air quality and public health and safety. If the Draft EIR's assumptions regarding groundwater are adjusted to take SGMA into account then the evaluation of impacts for these other resources categories will also need to be amended.	Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium and high priority basins with overdraft conditions or 2042 for medium and high priority basins without overdraft. Each GSP that is either currently being developed or has been developed is specific to each groundwater basin/subbasin. The C2VSim groundwater model does not include specific actions for each GSP relative to parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decision regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The C2VSim model represents effects to groundwater resources that may be more substantial than when GSP provisions are fully enacted. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives. The analysis provided in Chapter 6, Groundwater, and Appendix I, Groundwater Technical Appendix, indicates the potential decrease in groundwater levels for Alternative 3 as compared to the No Action Alternative. The location and timing of the changes are shown in the figures in Appendix I. As noted in Appendix I, decreases in groundwater levels below historical low levels have the potential to induce additional subsidence in areas that have geologic conditions favorable to subsidence. The EIS addresses this in Appendix L, Air Quality, Appendix R, Land Use and Agricultural Resources, and Appendix X, Public

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		Health and Safety. Also refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.
80-82	9 9.2 p.9-2: Statement that "If surface water availability decreases farmers could make up the difference in water supply by increasing groundwater pumping which could lead to an increase in emissions. Conversely if surface water availability increases farmers could decrease the amount of groundwater they pump which could lead to a decrease in emissions" is unsupported. SGMA will mean that farmers may not be able to increase groundwater pumping which means that decreases in surface water will lead to increased fallowing. Fallowing has air quality impacts which must be analyzed in the EIS. Alternatives 2 and 3 in particularly would likely result in increased following south of Delta where air quality impacts are already keenly felt. 9 9.2.4 P2 p.9-14: Same issue as above. Description assumes increase in groundwater pumping to meet water supply demands which is unsupportable due to restrictions on pumping created by SGMA. Analysis should include air quality impacts from increased fallowing. 9 9.2.4 P2 p.9-14: Building on above 2 comments because fallowing is recognized as an impact of Alternatives 2 and 3 in Ch. 21 (see p. 21-3) the impacts of fallowing on air quality also need to be addressed.	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis and the use of reliable information. The groundwater pumping emissions estimate is based on the groundwater modeling and is limited by the available data on how agricultural users could respond to changes in water availability and cost. The C2VSim model does not simulate local groundwater pumping limitations that may be in place per GSPs and SGMA. The model may overestimate the amount of groundwater pumping resulting from an alternative depending on the area. Text on potential air quality impacts from fallowing has been added to the EIS.
80-83	12 12 p.12-1: "The introduction to Chapter 12 states: "This impact assessment is based on the background information and technical analysis documented in Appendix O Fish and Aquatic Resources Technical Appendix which includes additional information on fish and aquatic resource conditions and technical analysis of the effects of each alternative." And "Using multiple lines of evidence the analysis described below considers both context and intensity (40 CFR 1508.27) the alternatives may have on fish and aquatics	Please see Standard Response 7, Aquatic Resources, section Structure of the Aquatics Analysis, for an explanation of how information was used in this Draft EIS to perform the effects analyses. The results of the comparative analyses were variable and specific to each analysis, species, and geography and cannot be provided in detail with the current page limit restrictions of under NEPA in Chapter 12. However, this information is provided on Appendix O and associated

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	resources." It would significantly improve the value of the EIS as an informative document that provides meaningful opportunity for public review if Reclamation were to add a section following the introduction that 1) provides an overview of the approach(es) used in performing the effects analyses 2) identifies the modeling tools (with reference to the specific pages in Appendix O describing each analysis and where the results of the "technical analyses" are presented and 3) describes the criteria used to identify significant adverse impacts the criteria and analyses used to distinguish significant differences between alternatives the criteria used to determine an impact is negligible minor moderate or severe -- for example impacts to salmon survival that only occur in 1 year may be considered to be moderate (affecting only 1 year class) while the same annual impact over 3 consecutive years could result in a more severe impact to the population. "	attachments. For details on the modeling approach(es) used please see Section O.2, Methods and Tools, in Appendix O. Please see Standard Response 7 section Application of Modeling Results and Evaluation of Impacts. The context and magnitude of impacts are discussed throughout Chapter 12 and Appendix O. The Final EIS contains clarifying language regarding the terms used to describe the magnitude and context of the impacts evaluated in Chapter 4–22 and Appendices G–X. Reclamation agrees with the assertion that impacts occurring over consecutive years are more severe than impacts with the same magnitude occurring in a single year.
80-84	12 Table 12-1 p.12-2: White Sturgeon status should be updated as it is now a CESA candidate species. 12 Table 12-1 p. 12-2: Should White Sturgeon have a federal status of "undergoing listing review"?	The Final EIS has been updated with recent petitioned status under the federal ESA. White sturgeon's candidacy as an endangered species under CESA is noted in the affected environment, Section O.1.3.2. Reclamation and the CVP are not subject to requirements under CESA.
80-85	12 12.1.1 p. 12-3: Clarifying language needs to be added to distinguish if Trinity and Klamath are included or not included in the project area. In addition why are the fish species from those areas being discussed? 12.1.1 should be moved to an appendix and referenced as background material.	The information in Section 12.1.1 of the EIS is important for understanding impacts, and its inclusion in the main body of the EIS is therefore necessary and appropriate. Additional information describing the inclusion of the Trinity and Klamath rivers in the Study Area and the fish species that occur there is included in Appendix O. Refer to Standard Response 8, Trinity River Division, regarding the consideration of Trinity River operations in the EIS and future environmental review processes anticipated for the Trinity River.
80-86	12 12.1.2 p. 12-7: If the LSNFH operations are not included in this LTO then why are they being discussed? Suggest moving to background appendix.	The cited section is in the Affected Environment where background information about each species is provided.

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80-87	12 12.2.1 p. 12-24: Move Trinity and Klamath info to appendix or create a sub-Alternative and move it to "Considered but Rejected". Reference the info for the Cumulative effects analysis for other ongoing or reasonably foreseeable projects.	The Trinity River Division is part of the Coordinated Long-term Operation of the CVP, and thus, it is not appropriate to include that information in the cumulative effects analysis. The alternatives in the Draft EIS include the continued implementation of the 2000 Trinity ROD. Please refer to Standard Response 8, Trinity River Division, for additional information on future modifications proposed for the Trinity River Division.
80-88	12 12.2.2.7 p. 12-36: This paragraph seems out of place and over-simplified. Suggest rewriting with more detail or moving into the Appendix. Do not duplicate this paragraph under every region as it is redundant. Use citations and incorporate info by reference if you must keep it.	The paragraph is not duplicated verbatim in each region. Unique results for each region are provided. The information about potential impacts to other aquatic species is provided in the accompanying Appendix O, Fish and Aquatic Resources Technical Appendix, and Attachments. Please see Standard Response 7, Structure of the Aquatics Analysis for a full list of analyses and their attachment titles.
80-89	12 12.2.7.6 Figure 12-4 p.12-55 Figure 12-4: presents a comparison of mean annual population growth rate (cohort replacement rate) for delta smelt. A mean population growth rate less than 1.0 indicates a long-term declining trend in species abundance. A mean annual population growth rate greater than 1.0 indicates a positive trend (increasing abundance over time). The figure indicates that of all the alternatives evaluated only one (Alt 3) is predicted to result in an increasing trend in delta smelt abundance. The discussion of mean annual population growth rate should be expanded to discuss this finding in more detail and to acknowledge the substantive levels of uncertainty associated with those population growth-rate estimates.	Please refer to Standard Response 5, Adequacy of the Analysis and Mitigation, regarding the request to add in further discussion of the life cycle model. Further information and discussion regarding the model inputs and outputs can also be found in Attachment F.4. Delta Smelt Life Cycle Model with Entrainment. Attachment F.4 states, "The general statistical prohibition against extrapolation suggests that model predictions are more uncertain when explanatory variables are outside the range of observations to which the model was fit."
80-90	12 12.2.9 pp.12-57 - 12-58: The discussion of Alternative 2B provides little support for the analyses and findings intended to serve as a basis for policy-level assessment of the fishery benefits that attend Alt 2B in comparison to the other alternatives considered in the EIS. A wide range of simulation modeling	Alternative 2B in the Draft EIS built on the modeling for Alternative 2. Updated modeling for Alternative 2 has been included in the Final EIS and has been revised to also include the assumptions and actions under Alternative 2B. There are no significant changes between the results for Alternative 2 in the

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	analytical tools are available and should be applied to assess quantitatively and evaluate Alt 2B against the other alternatives in the draft EIS.	Final EIS and Draft EIS. The Final EIS does not contain a separate Alternative 2B.
80-91	12 12.2.10 pp.12-58 - 12-59: The discussion of Alternative 4B provides little support for the analyses and findings intended to serve as a basis for policy-level assessment of the fishery benefits that attend Alt 4B over any of the other alternatives considered in the EIS. A wide range of simulation modeling analytical tools are available and should be applied to assess quantitatively and evaluate Alt 4B against other alternatives.	Alternative 4B in the Draft EIS built on the modeling for Alternative 4. Updated modeling for Alternative 4 has been included in the Final EIS and has been revised to also include the assumptions and actions under Alternative 4B. There are no significant changes between the results for Alternative 4 in the Final EIS and Draft EIS. The Final EIS does not contain a separate Alternative 4B.
80-92	12 12.4 p.12-59: The effects analysis presented in Section 12.2 lacks comparative synthesis of findings and results. Based on the qualitative descriptions of effects of each alternative on fishery resources it is difficult to distinguish differences between the Alternatives. A new Section 12.2.11 should be added that provides a comparative summary of the effects of each alternative for each relevant location and species. As an example the Appendix included with SLDMWA's comments includes a table that compares Alternatives 2 and 4 for fishery effects on temperature dependent mortality for winter-run Chinook salmon eggs downstream of Keswick Dam [See F_LTO_0080_Att_3_of_Att_3 Hanson et al. (2024)]. The comparative summary table also includes examples drawn from the EIS for Bay-Delta fishery impacts. The comparative table that we recommend be included as Section 12.2.11 would need to include each of the alternatives evaluated for each species and watershed included in the effects analysis.	The complicated nature of seasonal operations on 29 different species with different life history strategies and behaviors produces impacts that may be beneficial or adverse depending on a multitude of factors, including the water year type, location, and month as demonstrated in the results of Appendix O. Table O-282 in Section O.8, Summary of Impacts, provides a comparison of all the modeled Alternatives, including Alternative 2 and Alternative 4, and is listed by species and location. Reclamation will note feedback on the organization of the document for future efforts.
80-93	12 12.3 p.12-59: Section 12.3 provides a summary discussion of "avoidance and minimization measures that are part of each alternative" and are intended to avoid fishery impacts however the section heading is "Mitigation Measures." These measures should not be referred to as "mitigation" even though they have the intended effect of reducing impacts from each alternative because	Reclamation believes the headers are consistent with NEPA. The mitigations measures described and analyzed are adequate under NEPA.

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	these measures are unlike the other mitigation measures identified in the Draft EIS. In other portions of the Draft EIS the phrase "mitigation" is used to identify measures that are taken to avoid or reduce significant impacts that are caused by the different components of each alternative. Because no significant impacts to fisheries are identified in Chapter 12 it is not accurate to state that these measures have been developed to avoid or reduce impacts from each alternative. As a result we request that the reference to "Mitigation Measures" in the title of Section 12.3 be revised to a more accurate description that will avoid potential confusion."	
80-94	12 12.4 pp.12-59 - 12-60 : Section 12.4 provides a brief discussion of cumulative impacts citing Appendix O and Appendix Y for technical results of this assessment. Section 12.4 should provide specific page references in both of these appendices to guide the reader to the appropriate discussion. Section 12.4 should be expanded to provide an actual summary of the cumulative effects identified through those analyses of fishery resources. The current description presents no substantive discussion that would inform the public or decision-makers by allowing evaluation of differences in cumulative effects among alternatives. Section 12.4 does not identify specific current and future projects and how effects of the alternatives would contribute to cumulative effects. If current conditions are cumulative significantly impacting a species like delta smelt then the contribution of the proposed project would also be considered as contributing to significant adverse impacts.	The EIS has been prepared in compliance with NEPA, and it is subject to page limit requirements. NEPA regulations limit the number of pages and favors the use of appendices for technical information that supports the analysis. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding adequacy of the cumulative impact analysis. Please also refer to Chapters 4–22 regarding the analysis of potential cumulative impacts for each environmental resource topic evaluated by the EIS. Finally, please refer to Appendix Y, Cumulative Impacts Technical Appendix, for a more detailed description of cumulative impacts associated with the alternatives.
80-95	12 12.4 pp.12-59 - 12-60: This is not a sufficient Cumulative Impact discussion. It needs to consider other ongoing and reasonably foreseeable actions. For example the WQ impacts from the Klamath Dam removals is creating areas with readings of zero for dissolved oxygen which will impact the fish and aquatic environment downstream.	The EIS has been prepared in compliance with NEPA, and it is subject to page limit requirements. NEPA regulations limit the number of pages and favors the use of appendices for technical information that supports the analysis. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding adequacy of the cumulative impact analysis. Please also refer to Appendix O, Fish and Aquatic Resources Technical Appendix, for

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		a more thorough discussion regarding the analysis of potential cumulative impacts for aquatic resources and the long-term beneficial impacts of the Klamath River Renewal Project on water quality and anadromous fish habitat. Finally, please refer to Appendix Y, Cumulative Impacts Technical Appendix, for a more detailed summary of cumulative impacts by resource associated with the alternatives.
80-96	13 13.2.1.1 p. 13-4: Same comment: move Trinity to an Appendix. [referencing section 12.2.1 comment "Move Trinity and Klamath info to appendix or create a sub-Alternative and move it to "Considered but Rejected". Reference the info for the Cumulative effects analysis for other ongoing or reasonably foreseeable projects."]	Refer to Standard Response 8 Trinity River Division regarding the scope of impacts evaluated for the Trinity River. Refer to Standard Response 4, Alternatives Formulation, regarding the alternatives analyzed in the EIS. Refer to Standard Response 5, Adequacy of Analysis and Mitigation regarding the sufficiency of the cumulative analysis.
80-97	13 13.2.1.2 p. 13-5: Does the SRS Contractors 25 TA of fallowing include the amount applied in the Long-term N-S Water Transfer Program? Is this ongoing project included in the analysis and the cumulative effects? This needs to include the water amounts: how many TAF of fallowing or crop idling in relation to all the transfers?	Reclamation has a separate program for North-South Water Transfers (NSWT) Project that is analyzed and described in a separate analysis. Refer to Appendix Y, Cumulative Analysis, Table Y-1 for a discussion of North-South Water Transfers (NSWT) Project. NSWT Project transfers are included in Alternatives 2 and 4 which includes the operational aspect of water transfer but does not include making the water available for transfer. NSWT Project is included as a reasonably foreseeable action for the purposes of the cumulative impact analysis. Refer to Standard Response #5, Adequacy of Analysis and Mitigation regarding the cumulative analysis.
80-98	13 13.4 p. 13-12: Same comment this is not sufficient for a Cumulative Effects analysis. [Referencing 12.4 Cumulative Impacts Comment: "This is not a sufficient Cumulative Impact discussion it needs to consider other ongoing and reasonably foreseeable	The EIS has been prepared in compliance with NEPA, and it is subject to page limit requirements. NEPA regulations limit the number of pages and favors the use of appendices for technical information that supports the analysis. Refer to Standard

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	actions. For example the WQ impacts from the Klamath Dam removals is creating areas with readings of zero for dissolved oxygen which will impact the fish and aquatic environment downstream."]	Response 5, Adequacy of Analysis and Mitigation, regarding adequacy of the cumulative impact analysis. Please also refer to Chapter 12, Fish and Aquatic Resources, regarding the analysis of potential cumulative impacts for aquatic resources. Finally, please refer to Appendix Y, Cumulative Impacts Technical Appendix, for a more detailed description of cumulative impacts associated with the alternatives and regarding the long-term beneficial impacts of the Klamath River Renewal Project on water quality and anadromous fish habitat.
80-99	15 15.3.2.1 P1 p.15-10: MM AG-1 which is designed to address conversions of agricultural land to non-agricultural uses in response to decreases in water supply / irrigated acres "relies on entities other than Reclamation to implement the measures" and "Reclamation cannot ensure it will be implemented." The evaluation of this mitigation measure is inadequate because there is not discussion of whether or not it will be effective at avoiding the significant impacts to SOD agricultural contractors that are identified.	NEPA requires that an EIS include an analysis of potential means to mitigate adverse environmental effects. This analysis can include appropriate and reasonable mitigation measures that are outside the jurisdiction of the lead agency or the cooperating agencies. Such mitigation measures would not be committed to as part of the Record of Decision (ROD) issued by Reclamation. The mitigation measure identified, Mitigation Measure AG-1, relies on entities other than Reclamation to implement the measure. Because Reclamation does not have authority to implement this measure and the measure would be implemented on a voluntary basis, Reclamation cannot ensure that it will be implemented. If it is implemented, it will reduce impacts on agricultural land. As the most comprehensive environmental document, the EIS is an ideal vehicle to present not only the range of environmental effects, but also the complete spectrum of appropriate mitigation measures. The EIS has been prepared in compliance with NEPA and evaluates the potential impacts that may result from the alternatives. Please refer to Chapter 5, Water Supply, and Appendix H, Water Supply Technical Appendix, for a quantification of potential impacts on water supply from the

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		alternatives.
80-100	17 17.2.1 p.17-6: Discussion about the impacts from Alternative 3 to groundwater elevations and the resulting impacts to minority and low-income populations is incomplete. It is equally likely if not more likely that decreases in surface water supply will lead to fallowing given SGMA implementation which would have significant impacts on minority and low-income populations. 17 17.2.1 p.17-6: Statement about reductions in groundwater elevations being likely to occur in areas susceptible to land subsidence and that the exact location and severity of subsidence is impossible to predict are unfounded given analysis with SGMA.	The Sustainable Groundwater Management Act (SGMA) prescribes that Groundwater Sustainability Agencies (GSAs) develop Groundwater Sustainability Plans (GSPs) to bring medium- and high-priority basins into sustainable operation. Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium and high priority basins with overdraft conditions or 2042 for medium and high priority basins without overdraft. Each GSP that is either currently being developed or has been developed is specific to each groundwater basin/subbasin. The C2VSim groundwater model does not include specific actions for each GSP relative to parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decisions regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The C2VSim model represents effects to groundwater resources that may be more substantial than when GSP provisions are fully enacted. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives. The analysis provided in Chapter 6, Groundwater, and Appendix I, Groundwater Technical Appendix, indicates the potential decrease in groundwater levels for Alternative 3 as compared to the No Action Alternative. The location and timing of the changes are shown in the figures in Appendix I. As noted in

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		Appendix I, decreases in groundwater levels below historical low levels have the potential to induce additional subsidence in areas that have geologic conditions favorable to subsidence. Also refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.
80-101	17 17.2.3.1 P2 p.17-7: Typo: "disadvantage" should be "disadvantaged"	Reclamation has corrected the text in Chapter 17.
80-102	17 17.2.3.1 P2 p.17-7: "Sentence indicates that taking land out of agricultural production may increase the potential for hay fever in areas where disadvantage[d] communities live. Suggest analyzing whether fallowing may also increase incidences of Valley Fever or referencing analysis in Chapter 21 re Valley Fever. Suggest incorporation of information from recent studies including: - Coccidioidomycosis seasonality in California: a longitudinal surveillance study of the climate determinants and spatiotemporal variability of seasonal dynamics 20002021 Heaney Alexandra K. et al. The Lancet Regional Health Americas Volume 38 100864"	Appendix X, Public Health and Safety Technical Appendix, Section X.1.1, Valley Fever, provides a general overview of Valley fever sufficient to inform the evaluation of environmental consequences associated with the action and No Action alternatives. It is noted in this section that climate influences seasonal as well as annual Valley fever infection patterns. The information provided on Valley fever in Section X.1.1 is sufficient to support the evaluation of alternatives in Section X.2, Evaluation of Alternatives.
80-103	21 21.2.1 P3 p.21-3: Conclusion that increase in Valley fever due to CVP and SWP operations under Alternatives 2 3 and 4 is not expected is unsupported. Although it is correct that "conversion of this land to non-agricultural use would not necessarily mean that the land would be fallowed or idled" fallowing is the most likely outcome. As a result the discussion of this mitigation measure is inadequate because there is no discussion of whether the diversification of water portfolios (MM AG-1) would avoid or reduce the significant impacts associated with air borne diseases that are caused by the Project. See study referenced above. 21 21.3 p.21-5: The discussion of mitigation measure MM AG-1 is inadequate for each of the alternatives because there is no discussion of whether the diversification of water portfolios (MM	As indicated in Appendix R, Land Use and Agricultural Resources Technical Appendix, Mitigation Measure AG-1: Diversify Water Portfolios would reduce impacts related to a reduction in irrigated agricultural land, if implemented. Diversification of water portfolios could include the sustainable conjunctive use of groundwater and surface water, water transfers, water conservation and efficiency upgrades, and increased use of recycled water or water produced through desalination where available. To the extent that the mitigation reduces anticipated conversion of irrigated agricultural land, it is expected that there would be a reduction in the potential for this land to be conducive to the growth of Coccidioides. The mitigation measure relies on entities other than Reclamation to

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	AG-1) would avoid or reduce the significant impacts associated with air borne diseases that are caused by the Project. 21 21.3.2.1 p.21-5: MM AG-1 does not make sense as a MM for Valley Fever. (1) SGMA will limit access to groundwater and (2) a decrease in surface water and transfers will contribute to fallowing and increase in Valley fever thus it makes no sense to include a MM that instructs water agencies to rely on surface water and transfers to mitigate.	implement the measures. Because Reclamation does not have authority to implement this measure and implementation is voluntary, Reclamation cannot ensure that it will be implemented.
80-104	23 23 p. 23-1: There needs to be an Other Applicable Laws section that at least mentions Essential Fish Habitat (because you highlighted in table 12-1 that the fish species are commercially and recreationally important under the Magnuson-Stevens Fishery Conservation and Management Act ("MSA")) MSA (because of the mention and the cumulative impacts of fishing regulations under NMFS and PFMC on these species) Migratory Bird Treaty and any other potentially applicable laws.	Reclamation provided an Essential Fish Habitat analysis in October 2024 to initiate the process to meet the consultation requirements for the Magnuson-Stevens Fishery Conservation and Management Act of 1976 for EFH. The analysis of EFH focuses on three management units represented by FMPs (NMFS 2017): Pacific Coast Salmon, Coastal Pelagic Species, and Pacific Coast Groundfish. The final EFH report will be sent to NMFS for their review and recommendations. Chapter 23 of the EIS contains other NEPA considerations, which include several topics outlined in 42 U.S.C. § 4332(C), such as irreversible and irretrievable commitment of resources and the relationship between short-term uses and long-term productivity. Related to the regulatory setting, 40 C.F.R. §1502.15 requires that the description of the affected environment be no longer than is necessary to understand the effects of the alternatives. Standard Response 4 explains the adequacy of the impact analysis. Refer to Standard Response 2, Related Regulatory Processes, regarding EFH and the Magnusen-Stevens Act. Reclamation follows all applicable laws and regulations. National Marine Fisheries Service. 2017. Endangered Species Act Section 7(a)(2) Biological Opinion, Magnuson-Stevens Fishery

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		Conservation and Management Act Essential Fish Habitat Response, and Fish and Wildlife Coordination Act Recommendations for the California WaterFix Project in Central Valley, California. NMFS Consultation Number: WCR-2016-5506. June 16. Portland, OR: United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, West Coast Region.
80-105	23 Attach. 1 [Consultation and Coordination] 23.2 pp.23.1-5 - 23.1-6: The section on Trinity-River-Specific Coordination indicates that Reclamation has only coordinated with interested parties 4 times and not at all since March of 2024. This coordination is inadequate; the frequency and quality of coordination must be improved.	Trinity River reconsultation includes the Hoopa Valley Tribe and Yurok Tribe as joint leads for NEPA purposes. It was determined in the joint lead group to engage with interested parties when NEPA milestones occur, and future engagement will continue. Reclamation appreciates the review of the cooperating agency draft documents and the comments submitted by the Water Authority throughout this environmental review process. Reclamation reviewed and considered all comments submitted on the cooperating agency draft versions of the Draft EIS.
80-106	C C.6.6 P1 C-56: Paragraph describes current operations of Friant Dam but does not acknowledge that Reclamation may release water from Friant Dam for various project purposes including for example to meet refuge demands.	Reclamation acknowledges use of Friant Dam for various project purposes including for meeting refuge demands. The flows out of Friant Dam would not be modified as part of this NEPA process. Releases are implemented by the Record of Decision on the San Joaquin River Restoration Program.
80-107	C C.8.6 P2 S3 C-73: The following sentences should be corrected: "The Mendota Pool a non-federal facility has been owned operated and maintained by the Central California Irrigation District since 1919. Reclamation has an agreement with CCID for the operation of Mendota Pool." CCID does not own Mendota Pool. CCID owns and operates Mendota Dam and the San Luis & Delta-Mendota Water Authority operates Mendota Pool.	The text has been corrected. Please see Appendix C, Facilities Description, Section C.8.6, Mendota Canal.

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80-108	C C.8 and C.9 C-66 - C-80: Reclamation partners with numerous transferred works entities to operate and maintain various CVP facilities. On pages 79-80 the document recognizes that the Westlands Water District operates and maintains the Pleasant Valley Pumping Plant and sections of the Coalinga Canal. This is accurate. But if the document is to acknowledge some transferred works entities it should be consistent in acknowledging all transferred works entities. For example the San Luis & Delta-Mendota Water Authority operates and maintains the C.W. Jones Pumping Plant Delta-Mendota Canal Delta-Mendota Canal-California Aqueduct Intertie Pumping Plant and O'Neill Pumping-Generating Plant and operates the Mendota Pool.	The following language was added at the end of Appendix C, Facilities Descriptions, Section C.9.1: ."Under Contract No. 8-07-20-X0354-X, dated January 14, 2020, for a period up to 35-years, subject to renewal, the San Luis & Delta-Mendota Water Authority is responsible for the operation, maintenance, and replacement of C.W. 'Bill' Jones Pumping Plant, Delta-Mendota Canal, Delta-Mendota Canal Intertie, and other Project Works listed on Exhibit A of that Contract."
80-109	C C.8.2 P1 S1 C-75: Please revise the first sentence as follows: "Under D-1641 Reclamation operates Delta Division facilities in particular the Jones Pumping Plant to meet its contractual obligations and to help meet various water quality objectives in the 1995 WQCP."	"Under D-1641 Reclamation operates Delta Division facilities, in particular the Jones Pumping Plant, to achieve Project purposes and to help meet various water quality objectives in the 1995 WQCP."
80-110	C C.8.2.1 P1 C-76: Please revise the first paragraph as follows: Within the Delta Division Reclamation administers the Second Amended Contract for Exchange of Waters which allows the United States to use San Joaquin River water for CVP purposes and specifically the Friant Division so long as and only so long as Reclamation provides substitute water to the Exchange Contractors. The Second Amended Exchange Contract stems from a July 27 1939 Purchase Contract (No. I1r-1145) and Exchange Contract (Contract No. I1r-1144). It provides for the annual delivery of not to exceed 840000 acre-feet of Substitute Supply to four Exchange Contractors which reflects the Schedule 1 quantities in the 1939 Purchase Contract. In a Critical Year that amount is not to exceed 650000 acre-feet. Reclamation normally provides the Substitute Supply from the Delta through the DMC but the source of the Substitute Supply is not limited to the DMC. For a temporary	Thank you for the comment. It appears this paragraph paraphrases key concepts in the Exchange Contract and court rulings on this matter. Reclamation may provide further clarifying edits.

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	reduction in the Substitute Supply for any reason the water to be delivered may come from any source including the San Joaquin River.	
80-111	D D.3.2 / D.3.3 D-8: Appendix D includes a modification to Shasta operations as a MM for water supply but no mitigation to account for the significant impacts associated with water supply reductions to SOD. Under NEPA Reclamation is required to Reclamation "discuss the extent to which adverse effects can be avoided." (Japanese Village LLC v. Federal Transit Administration 843 F. 3d 445 455 (2016) citing Robertson v. Methow Valley Citizens Council 490 U.S. 332 351-52 (1989) (quoting 42 U.S.C. 4332(2)(C)(ii)).)	The EIS has been prepared in compliance with NEPA and evaluates potential impacts that may result from the alternatives. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS and discussion of mitigation measures.
80-112	D D.13.1.2 D-36: See comments above. The document does not include an adequate evaluation of how MM AG-1 would avoid or reduce the significant impacts associated with Alternative 2.	NEPA requires that an EIS include an analysis of potential means to mitigate adverse environmental effects. This analysis can include appropriate and reasonable mitigation measures that are outside the jurisdiction of the lead agency or the cooperating agencies. Such mitigation measures would not be committed to as part of the Record of Decision (ROD) issued by Reclamation. The mitigation measure identified, Mitigation Measure AG-1, relies on entities other than Reclamation to implement the measure. Because Reclamation does not have authority to implement this measure, Reclamation cannot ensure that it will be implemented. As the most comprehensive environmental document, the EIS is an ideal vehicle to present not only the range of environmental effects, but also the complete spectrum of appropriate mitigation measures. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding Reclamation's process of developing and approving the ROD using the appropriate mitigation measures discussed in the EIS. Please also refer to Appendix D, Mitigation Measures, regarding discussions of how Mitigation Measure

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		AG-1 could be implemented.
80-113	G G.1.2.3 Selenium P1 G-10: The first sentence states that the California RWQCB has determined acceptable selenium exposure levels for humans. This sentence is vague in that there are two Regional Water Quality Control Boards associated with this DEIS. The document needs to clarify which Regional Water Board. Further another clarification is necessary as follows: " and long term limit is 5 g/L as stated" should be "limit is 5 g/L as a 4-day average as stated." Also at the end of the second paragraph it should state that in 2019 the Central Valley RWQCB adopted waste discharge requirements - not just released.	The specific RWQCB in question is listed in the referenced paragraph" "For the San Joaquin River from Merced River to Vernalis, the short-term exposure is 12 µg/L and long-term limit is 5 µg/L, as stated in the Sacramento–San Joaquin River Basin Plan (Central Valley Regional Water Quality Control Board 2019)." No change to the EIS has been made in relation to this comment. The commenter is correct in stating that the 5 g/L criteria is based on a 4-day average. Information is presented in the existing text is adequate to understand the affected environment. The comment regarding "released" vs "adopted" is editorial in nature and does not impact the overall intent of the sentence; no change to the EIS has been made in relation to this comment. Central Valley Regional Water Quality Control Board. 2019. The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region-Fifth Edition. Revised February 2019 (with Approved Amendments). California Regional Water Quality Control Board, Central Valley Region. Rancho Cordova, CA.
80-114	G G.1.2.3 Selenium p2 and Table G-3 G-11: Reference to EPA's 2021 selenium criteria is confusing because it is not an enforceable standard like the CTR criteria or the site specific objectives contained in the Central Valley's Basin Plan for the San Joaquin River and its tributaries. Additional language should be added to either clarify that EPA's 2021 criteria are NOT adopted water quality objectives or remove reference to the 2021 criteria and Table G3 in	The first paragraph on p. G-10 in Appendix G, Water Quality Technical Appendix, outlines the enforceable standards set by the Agency for Toxic Substance and Disease Registry, California OEHHA, EPA, Water Board, and Central Valley RWQCB. This paragraph states, "The EPA also specified through the CTR that the water quality criteria for aquatic life in all of California's freshwater bodies, except for the San Joaquin River from

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	their entirety. At the very least language should be added to clarify that EPA's 2021 criteria are not applicable to the San Joaquin River or its tributaries where there is a numeric objective in the Central Valley's Basin Plan.	Merced River to Vernalis, are 20 µg/L for short-term (1-hour average) and 5 µg/L for long-term (4-day average) exposure (U.S. Environmental Protection Agency 2000). For the San Joaquin River from Merced River to Vernalis, the short-term exposure is 12 µg/L and long-term limit is 5 µg/L, as stated in the Sacramento–San Joaquin River Basin Plan (Central Valley Regional Water Quality Control Board 2019). The water quality criteria for aquatic life in all of California's water bodies is 5 µg/L (4-day average exposure) and 20 µg/L (1-hour exposure) (U.S. Environmental Protection Agency 2022a)." Discussion of the EPA's 2021 Revision to Aquatic Life Ambient Water Quality Criterion for Freshwater Selenium is discussed to ensure the most up-to-date and accurate information is presented within this EIS. Central Valley Regional Water Quality Control Board. 2019. The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region-Fifth Edition. Revised February 2019 (with Approved Amendments). California Regional Water Quality Control Board, Central Valley Region. Rancho Cordova, CA. U.S. Environmental Protection Agency. 2000. Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California; Rule. 18 May. Federal Register 65:97. U.S. Environmental Protection Agency. 2022. National Recommended Water Quality Criteria. Available: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfmf. Accessed: March 9, 2023.

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80-115	G G.1.8.1 Constituents of Concern p3 G-47: Elevated EC in the Grassland Marsh Mud Slough (North) Salt Slough and portions of the San Joaquin River are not exclusively related to agriculture. Shallow saline groundwater migration from the Coastal Range and subsequent shallow groundwater accretion into these channels contribute significantly to EC levels. Specific to Mud Slough (North) - discharges from the Grassland Bypass Project to Mud Slough through the San Luis Drain have been limited to storm event discharges since approximately 2015 with agricultural return flows retained within the Grassland Drainage Area. Out side of storm event discharges salinity conditions within Mud Slough (North) are largely due to shallow groundwater accretions.	The commenter is accurate in stating that elevated EC is not attributed exclusively to agriculture; groundwater intrusion also plays a role. Consistent with 40 CFR § 1502.15, information presented in the "Affected Environment"/"Background Information" section is succinct and provides enough information to understand impacts under the proposed alternative. This comment is included in the record of consideration for decision makers.
80-116	G G.1.8.1 Constituents of Concern P2 G-47: Reference to the San Joaquin River Water Quality Improvement Project (SJRIP) should be removed. The intent of the SJRIP is localized to and incorporated with the Grassland Bypass Project. Separate reference to the SJRIP is not necessary and could be taken out of context.	The referenced sentence outlines that the San Joaquin River Water Quality Improvement Project is part of the Grasslands Bypass Project and specific to this area.
80-117	G G.1.8.1 Constituents of Concern p6 G-47: This paragraph references data in the San Joaquin River from Bear Creek to Vernalis from October 1995 through February 2007. It is unclear why data from this time period was referenced: Water Quality conditions in this portion of the San Joaquin River have changed significantly since this time period due to the implementation of the Grassland Bypass Project and other projects.	This data is presented in the Final California 2020 Integrated Report (303d List) Supporting Information (https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_revised_final/apx-b/01268.shtml#76143) as Line of Evidence to support CVRWQCB's decision to list San Joaquin River as impaired by EC. State Water Resources Control Board. 2022ac. Final California 2020 Integrated Report (303(d) List/305(b) Report). Supporting Information. San Joaquin River (Bear Creek to Mud Slough). Available: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_revised_final/apx-b/01268.shtml#117030. Accessed: March 16, 2023.

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80-118	G G.1.9.3 Constituents of Concernp3 G-63: The selenium water quality objectives are set through the Regional Water Boards. The appropriate Basin Plan should be referenced rather than EPA recommendations for selenium criteria. This paragraph should be updated to reflect Basin Plan selenium objectives or removed.	The text on the page referenced in this comment is identifying water quality objectives/criteria for selenium applicable to surface waters in the Bay-Delta region. As described in this section, the EPA promulgated criteria in 1992 applicable San Francisco Bay, Suisun Bay, and the Delta, with reference to the associated Federal Register notice. These criteria are enforceable, not recommended, criteria; hence, the correct reference is provided. The remainder of the discussion describes recent proposed changes to criteria for the Bay-Delta, as well as California-wide, noting that the criteria would not apply to waters where site-specific criteria have been adopted.
80-119	G G.1.9.3 Constituents of Concern G-45-46: The document references draft waste discharge requirements for Grasslands. This reference should be changed to reflect that the waste discharge requirements were adopted in 2019 for stormwater discharges.	Table G-18 in Appendix G, Water Quality Technical Appendix, provides water quality objectives for selenium in the San Joaquin River region adopted by the Central Valley RWQCB in 2019.
80-120	G G.1.9.3 Constituents of Concern G.48: The reference to CV-SALTS should be expanded to explain that the Central Valley Water Board amended the Basin Plan in 2018 and 2019 to include the Salt Control Program which includes implementation of a 10-year study referred to as the Prioritization and Optimization Study to identify the most effective alternatives for managing salt throughout the entirety of the Central Valley.	The commenter is accurate in stating that the Salt Control Program, developed in collaboration with the CV-SALTS Program, was adopted by the Central Valley Water Quality Control Plans to address the long-term problem of salt accumulation in the Central Valley. However, the level of detail provided in the EIS is consistent with 40 C.F.R. § Section 1502.15, which requires a succinct description of the environment with enough detail to understand impacts.
80-121	H: Based on how data is aggregated in the Water Supply evaluations it is difficult to understand water supply impacts because Santa Clara Valley Water District a SWP & CVP contractor is located in the San Francisco Bay Area but receives both M&I and Agricultural water through the South of Delta deliveries. Please include an analysis showing CVP and SWP water supply deliveries for South of Delta M&I.	Appendix H, Water Supply Technical Appendix, Section H.2, Evaluation of Alternatives, includes a breakdown of deliveries by CVP and SWP hydrologic region. The appendix does not evaluate impacts by individual contractor but by hydrologic region. Appendix F, Modeling, Attachment F.2-4 presents results for SWP South of Delta M&I Water Service Contract Deliveries.

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80-122	H H.2.8.2 P1 H-56: Appreciate accurate description of adverse water supply impacts from Alts 2/3 copied below but wish this language were in the main document. "Alternatives 2 and 3 would generate reductions in average annual deliveries to some contractor types that would exceed 5% and would represent a measurable reduction in water supply when compared to the No Action Alternative. These reductions in water supply deliveries and water made available for diversion would not be able to be replaced reliably from other sources such as water transfers or groundwater pumping. Water transfers are included in the No Action Alternative and would not be available to further offset the reduced water supply deliveries generated by Alternatives 2 and 3. Reliance on groundwater pumping to offset these reductions would not be feasible given the potential for numerous environmental effects generated by additional groundwater pumping in an area with declining groundwater levels and the limits on the availability of groundwater supplies with the implementation of the Sustainable Groundwater Management Act (see Appendix I Groundwater Technical Appendix for more information). Given the environmental and technological limits on the implementation of other potential options to offset this impact no feasible mitigation has been identified to reduce the severity of these reductions."	NEPA regulations limit the number of pages and favor the use of appendices for technical information that supports the analysis. Detailed information about water supply impacts is included in Appendix H, Water Supply Technical Appendix.
80-123	H: See comment above on Chapter 5. The evaluation of water supply impacts does not provide information about reductions would apply in different year types which have different corresponding impacts. For example if the water supply reductions are more pronounced in dry and critically dry years then the air quality environmental justice and socioeconomics impacts for areas located SOD will be more pronounced than in average and wet years.	Please refer to Appendix H, Water Supply Technical Appendix, for the changes to water supply during critical and dry year types. NEPA regulations limit the number of pages and favor the use of appendices for technical information that supports the analysis.

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80-124	I I.1.5.1 I-17: "Between measurements in fall 2020 and fall 2021 groundwater levels generally declined. Many wells have decreased between 4 and 40 feet (California Department of Water Resources 2023). There is one well with a reported decrease of over 200 feet. Many wells showed a decrease of at least 2.5 feet between fall 2020 and fall 2021." Please update the Draft EIS with a particular citation to the DWR report from 2023 that was cited regarding this observed decrease in well levels."	The California Department of Water Resources 2023 reference is cited in Appendix I, Groundwater Technical Appendix, Section I.3, References, as review of data from the SGMA Data Viewer. California Department of Water Resources. 2023. SGMA Data Viewer. Available: https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels. Accessed: March 29, 2023.
80-125	I I.1.5.1 I-19: "In the Delta-Mendota GWSB within Merced County approximately 3% of groundwater withdrawals are used for municipal and industrial purposes (including uses in the Cities of Gustine and Los Banos and Santa Nella) and 97% of the groundwater withdrawals are used for agricultural purposes (Merced County 2012)."" It appears that the Draft EIS is relying on a study prepared in 2012 by Merced County for this statement regarding water use. The Groundwater Sustainability Plans that document water use in this area are much more recent and are comprehensive sources of information regarding existing municipal water use in the Delta-Mendota Subbasin."	The data provided in Appendix I, Groundwater, Section I.1.5.1, West of the San Joaquin River, provides general background on groundwater conditions in the Delta-Mendota groundwater subbasin, including the text cited in the comment. Additional data may be available for this subbasin; however, this data would not change the modeling analysis and results presented in Chapter 6, Groundwater, and Appendix I, Groundwater Technical Analysis.
80-126	I I.2.1p 2 I-81: "While the changes in CVP and SWP operations under the alternatives compared with the No Action Alternative do not directly result in pumping more or less groundwater changes to CVP and SWP operations may change the amount of surface water delivered to users. A change in surface water deliveries may result in users changing their amount of groundwater pumping to offset this change in surface water supply. For example if less surface water is supplied to an agricultural area additional groundwater would need to be pumped and supplied to maintain cropping." This discussion does not acknowledge that there is a significant likelihood that additional groundwater will not be	The Sustainable Groundwater Management Act (SGMA) prescribes that Groundwater Sustainability Agencies (GSAs) develop Groundwater Sustainability Plans (GSPs) to bring medium- and high-priority basins into sustainable operation. Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium and high priority basins with overdraft conditions or 2042 for medium and high priority basins without overdraft. Each GSP that is either currently being developed or has been developed is specific to each groundwater basin/subbasin. The C2VSim groundwater model does not include specific actions for each GSP relative to

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	available meaning that existing agricultural users will not be able to "maintain cropping."	parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decisions regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The C2VSim model represents effects to groundwater resources that may be more substantial than when GSP provisions are fully enacted. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives. The analysis provided in Chapter 6, Groundwater, and Appendix I, Groundwater Technical Appendix, indicates the potential decrease in groundwater levels for Alternative 3 as compared to the No Action Alternative. The location and timing of the changes are shown in the figures in Appendix I. As noted in Appendix I, decreases in groundwater levels below historical low levels have the potential to induce additional subsidence in areas that have geologic conditions favorable to subsidence. Also refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.
80-127	O O.7.38 p1 O-1593: "If effects are anticipated then actions under Alternative 2B will not be implemented." Potential typo; is this supposed to be 4B?	Thank you for the correction. Please refer to Final EIS for corrected text. The text has been corrected.

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80-128	O O.8 Table O-282 O-1595: This summary table is very helpful. Please update it to show how the implementation of 2B would change the impact summaries.	Reclamation appreciates this comment. The table has been updated with revised results for Alternatives 2 and 4 for the Final EIS.
80-129	O O.10.1.1 O-1675: "The Bay-Delta Water Quality Control Plan Update has the potential to modify Sacramento River flow. Potential effects from the Bay-Delta Water Quality Control Plan Update would result in increased flows in spring and decreased flows in summer with subsequent decreased water temperature in spring and increased water temperature in summer. This increase in flows may have a cumulative beneficial flow effect on salmonids particularly juveniles which are migrating downstream towards the Delta." This should say beneficial and adverse impacts to salmonids because of increased water temperature in the summer similar to how the impact was evaluated for sturgeon.	Please refer to the Final EIS for the updated text.
80-130	P P.2.4.1 Bank Swallow P-70: The last sentence of the first paragraph under "Bank Swallow" on page p-70 refers to giant garter snake. Should be revised to refer to bank swallow.	This language has been revised in the EIS to refer to Bank Swallow.
80-131	ATTACHMENT 3:F_LTO_0080_Att_1_of_Att_3[See original comment for Sunding et al. (2020)]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
80-132	F_LTO_0080_Att_2_of_Att_3[See original comment for Shires (2022)]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
80-133	12.2 Effects of the Alternatives[See original comment for table titled Comments on Chapter 12 Fishery Resources]	This describes the comment table that was provided as part of the letter. Those comments are addressed in these responses to comments.
80-134	Hanson et al. (2024) 12.2 Effects of the Alternatives Comments on Chapter 12 Fishery Resources Comment: Page 0-46 Figure 0-33 presents estimates of Central Valley Chinook salmon abundance under each of the alternatives in the Executive Summary but there is no corresponding figure or discussion in Chapter 12. Figure O-33	Figure 0-33 in the Executive Summary is from an analysis of prey availability for Southern Resident killer whales in the Pacific Ocean. This analysis looks at all runs of Chinook salmon, including hatchery origin fish, which are not included in the designated ESUs. The conclusions from this analysis are

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	shows virtually no difference among alternatives and should be included in Chapter 12.	included in Chapter 12, Fish and Aquatic Resources, under the Nearshore Pacific Ocean section. The organization of the Effects of the Alternatives section is by geography, and therefore the SRKW analysis would not be appropriate for inclusion in the Sacramento River section or the American River section, as the estimates are on ocean abundance.
80-135	Comment: Page 0-47 Figure 0-34 presents estimates of adult Chinook salmon abundance in the Pacific Ocean under each of the alternatives in the Executive Summary but there is no corresponding figure or discussion in Chapter 12. The Figure O-34 shows virtually no difference among alternatives and should be included in Chapter 12.	Figure 0-34 in the Executive Summary is from an analysis of prey availability for Southern Resident killer whales in the Pacific Ocean. This analysis looks at all runs of Chinook salmon, including hatchery origin fish, which are not included in the designated ESUs. The conclusions from this analysis are included in Chapter 12, Fish and Aquatic Resources, under the Nearshore Pacific Ocean section. The organization of the Effects of the Alternatives section is by geography, and therefore the SRKW analysis would not be appropriate for inclusion in the Sacramento River section or the American River section, as the estimates are on ocean abundance.
80-136	Comment: ES and Chapter 12 The discussion of the effects of each alternative on fishery resources in the Delta is predominantly qualitative using descriptive terms such as "is expected to have an adverse or beneficial impact" "is expected to have minor adverse or beneficial impacts" is expected to have negligible impacts" and "is expected to have minor to moderate" effects. There is no standardized criteria presented in the draft EIS that define what constitutes a minor impact from a negligible or moderate impact. Reliance on these qualitative descriptions makes it impossible to compare and evaluate the potential significance of differences among alternatives.	The context and magnitude of impacts are discussed throughout Chapter 12 and Appendix O and uses qualitative and quantitative approaches appropriate for supporting impact conclusions. The extensive analyses used for the evaluation of impacts on aquatic species demonstrated a range of differences between the alternatives. Some were smaller and some larger. Furthermore, even small differences may result in larger impacts, and therefore, the interpretation of the model results were assessed by expert opinion in Appendix O. Individual subject-matter experts did not use a standardized descriptor for impacts, and there were no set descriptors established that overlapped analysis throughout the document. Due to the extensive and diverse nature of the information, it was not appropriate to set universal descriptors. For example, a 1-5% increase in flows may be categorized as minimal while a 4%

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		increase in survival (within that 1-5% range) may not be minimal, particularly in a dry or critically dry water year type. A 5% increase in flows in the mainstem Sacramento River will not be categorized the same as a 5% increase in flows in Clear Creek.
80-137	Comment: ES and Chapter 12The differences in fishery-impact metrics among alternatives is so small that the EIS cannot present a scientific basis or rationale for selecting one alternative over another. For example Figures 0-33 0-34 and 0-20 re-presented below fail to differentiate substantive differences among the alternatives. That implies that several factors may be relevant to the credibility and accuracy of the EIS analyses and associated findings; those include (1) the alternatives are all so similar as to not provide for a meaningful comparison (2) the analytic models and analyses used in preparing the EIS are ill-suited to the task and results are so variable and uncertain that they are not able to distinguish the benefits and impacts attending each of the alternatives (3) quantitative analyses were performed but not used to assess the frequency magnitude or duration of beneficial or adverse impacts; they are not presented or referred to in the EIS Executive Summary or Chapter 12 rather are relegated to a 1500-page technical appendix with just a qualitative descriptive summary of results presented in the main body of the EIS. [See original attachment for Figure 12-3 Boxplots of predicted mean through-Delta survival across all routes; Figure 0-33 Central Valley Chinook Salmon Abundance; and Figure 0-34 Estimates of adult Central Valley Chinook salmon abundance]	Figure 0-33 in the Executive Summary displays results from an analysis of prey availability for Southern Resident Killer Whales in the Pacific Ocean (Attachment F.7). This analysis looks at all runs of Chinook salmon, including hatchery origin fish, which are not included in the designated ESUs. The conclusions from this analysis are included in Chapter 12, under the Nearshore Pacific Ocean section. The Effects of the Alternatives section is organized by geography, and therefore, the Southern Resident Killer Whale analysis would not be appropriate for inclusion in the Sacramento River section or the American River section, as the estimates are on ocean abundance. Please see Standard Response 7, Aquatic Resources, section Application of Modeling Results and Evaluation of Impacts and section Structure of the Aquatics Analysis, for details on the structure and location of the quantitative analyses used to assess impacts of the aquatic biological resources. The context and magnitude of impacts are discussed throughout Chapter 12 and Appendix O. The extensive analyses used for the evaluation of impacts on aquatic species demonstrated a range of differences between the alternatives. Some were smaller and some larger. Furthermore, even small differences may result in larger impacts, and therefore, the interpretation of the model results were assessed by expert opinion in Appendix O. Please see Standard Response 7, Aquatic Resources, section Application of Modeling Results and Evaluation of Impacts. Also, please see Standard Response 5, Adequacy of Analysis and Mitigation. Finally, refer to Standard

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		Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of a reasonable range of alternatives. 40 Code of Federal Regulations § 1502.7 requires that the main chapters of final environmental impact statements, shall not exceed 300 pages. It was not possible to fit the content of all of the lines of evidence with detailed impact analyses by each species and life stage from Appendix O within these requirements.
80-138	Comment: Page 12-1 The introduction to Chapter 12 states: "This impact assessment is based on the background information and technical analysis documented in Appendix O Fish and Aquatic Resources Technical Appendix which includes additional information on fish and aquatic resource conditions and technical analysis of the effects of each alternative." And "Using multiple lines of evidence the analysis described below considers both context and intensity (40 CFR 1508.27) the alternatives may have on fish and aquatics resources." The credibility and reliability of the EIS would be improved substantially by the addition of a section following the introduction that 1) provides an overview of the approach(es) used in performing the effects analyses 2) identifies the modeling tools (with reference to the specific pages in Appendix O describing each analysis and where the results of the "technical analyses" are presented and 3) describes the criteria used to identify significant adverse impacts the criteria and analyses used to distinguish significant differences between alternatives the criteria used to determine an impact is negligible minor moderate or severe -- for example impacts to salmon survival that only occur in 1 year may be considered to be moderate (effecting only 1 year class) while the same annual impact over 3 consecutive years could result in a severe impact to	Please see Standard Response 7, Aquatic Resources, section Structure of the Aquatics Analysis, for an explanation of how information was used in this Draft EIS to perform the effects analyses. The results of the comparative analyses were variable and specific to each analysis, species, and geography and cannot be provided in detail with the current page limit restrictions of under NEPA in Chapter 12. However, this information is provided on Appendix O and associated attachments. For details on the modeling approach(es) used please see Section O.2, Methods and Tools, in Appendix O. Please see Standard Response 7, Application of Modeling Results and Evaluation of Impacts. The context and magnitude of impacts are discussed throughout Chapter 12 and Appendix O. The Final EIS contains clarifying language regarding the terms used to describe the magnitude and context of the impacts evaluated in Chapter 4–22 and Appendices G–X. Reclamation agrees with the assertion that impacts occurring over consecutive years are more severe than impacts with the same magnitude occurring in a single year.

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	the population.	
80-139	Comment: Page 12-55 Figure 12-4 presents a comparison of mean annual population growth rate (cohort replacement rate) for delta smelt. A mean population growth rate less than 1.0 indicates a long-term declining trend in species abundance. A mean annual population growth rate greater than 1.0 indicates a positive trend (increasing abundance over time). The figure indicates that all of the alternative evaluated only one (Alt 3) is predicted to result in an increasing trend in delta smelt abundance. The discussion of mean annual population growth rate should be expanded to discuss this finding in more detail and to acknowledge the substantive levels of uncertainty associated with those population growth-rate estimates.	Detailed information about the uncertainty in the population growth rate estimates is expressed in describing the variation in Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.5.12.1, in the USFWS Delta Smelt Life Cycle Model. Additional narrative on uncertainty and finding is in Attachment F.4., Delta Smelt Life Cycle Model with Entrainment. Support for Alternative 3 is noted.
80-140	Comment: Page 12-57 The discussion of Alternative 2B is so general qualitative and unsubstantial that it provides little support for the analyses and findings intended to serve as a basis for policy-level assessment of the fishery benefits that attend Alt 2B in comparison to the other alternatives considered in the EIS. A wide range of simulation modeling analytical tools are available and should be applied to assess quantitatively and evaluate Alt 2B against the other alternatives in the draft EIS.	Alternative 2B in the Draft EIS built upon the modeling for Alternative 2. Updated modeling for Alternative 2 has been included in the Final EIS and has been revised to also include the assumptions and actions under Alternative 2B. There are no significant changes between the results for Alternative 2 in the Final EIS and Draft EIS. The Final EIS does not contain a separate Alternative 2B.
80-141	Comment: Page 12-58 The discussion of Alternative 4B is so general qualitative and unsubstantial that it provides little support for the analyses and findings intended to serve as a basis for policy-level assessment of the fishery benefits that attend Alt 4B over any of the other alternatives considered in the EIS. A wide range of simulation modeling analytical tools are available and should be applied to assess quantitatively and evaluate Alt 4B against other alternatives.	Alternative 4B in the Draft EIS built upon the modeling for Alternative 4. Updated modeling for Alternative 4 has been included in the Final EIS and has been revised to also include the assumptions and actions under Alternative 4B. There are no significant changes between the results for Alternative 2 in the Final EIS and Draft EIS. The FEIS does not contain a separate Alternative 4B.
80-142	Comment: Page 12-59 The effects analysis presented in Section 12.2 lacks comparative synthesis of findings and results. Based on	The complicated nature of seasonal operations on 29 different species with different life history strategies and behaviors

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	the qualitative descriptions of effects of each alternative on fishery resources it is difficult to distinguish differences between the Alternatives. A new Section 12.2.11 should be added that provides a comparative summary of the effects of each alternative for each relevant location and species. As an example a comparison between Alternatives 2 and 4 is shown in the attached table for fishery effects on temperature dependent mortality for winter-run Chinook salmon eggs downstream of Keswick Dam. The comparative summary table also includes examples drawn from the EIS for Bay-Delta fishery impacts. Such a comparative table would need to include each of the alternatives evaluated for each species and watershed included in the effects analysis.	produces impacts that may be beneficial or adverse depending on a multitude of factors, including the water year type, location, and month as demonstrated in the results of Appendix O. Table O-282 in Section O.8, Summary of Impacts, provides a comparison of all the modeled Alternatives, including Alternative 2 and Alternative 4, and is listed by species and location. Reclamation will note feedback on the organization of the document for future efforts.
80-143	Comment: Page 12-59Section 12.3 provides a summary discussion of mitigation measures for fishery impacts. Section 12.3 should more appropriately be labeled "Avoidance and Minimization Measures" rather than mitigation measures. Mitigation implies there are significant impacts to fishery resources that need to be mitigated. No significant impacts are identified in Chapter 12 to fisheries therefore with implementation of the suite of Avoidance and Minimization Measures significant impacts are lessened to a level where additional mitigation is not necessary.	Reclamation believes the headers are consistent with NEPA.
80-144	Comment: Page 12-59Section 12.4 provides a brief discussion of cumulative impacts citing Appendix O and Appendix Y for technical results of this assessment. Section 12.4 should at the least provide specific page references in both of these appendices to guide the reader to the appropriate discussion. Section 12.4 should be expanded to provide an actual summary of the cumulative effects identified through those analyses of fishery resources. The current description presents no meaningful substantive discussion that would inform the public or decision-makers by allowing evaluation of differences in cumulative effects among alternatives. Section 12.4 does not identify specific current and future projects and how	The EIS has been prepared in compliance with NEPA and it is subject to page limits requirement. NEPA regulations limit the number of pages and favors the use of appendices for technical information that supports the analysis. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding adequacy of the cumulative impact analysis. Please also refer to Chapters 4–22 regarding the analysis of potential cumulative impacts for each environmental resource topic evaluated by the EIS. Please refer to Appendix Y, Cumulative Impacts Technical Appendix, for a more detailed description of cumulative impacts associated with the alternatives. Finally, refer to Appendix O for

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	effects of the alternatives would contribute to cumulative effects. If current conditions are cumulative significantly impacting a species like delta smelt then the contribution of the proposed project would also be considered as contributing to significant adverse impacts.	a specific cumulative impacts analysis related to aquatic resources.
80-145	Comment: Page Global The EIS acknowledges that adaptive management is an integral element of implementing and evaluating the performance of actions in meeting their intended biological objectives. The draft EIS states: "Adaptive Management: science and decision analytic-based approach to evaluate and improve actions with the aim to reduce uncertainty over time and increase the likelihood of achieving and maintaining a desired management objective." Several of the management actions subject to assessment in this draft EIS are candidates for implementation in an adaptive resource management framework including but not limited to three actions that currently are the subjects of review and advice by a committee engaged by the National Academies enjoined by the Bureau of Reclamation. Management actions that are likely to be implemented in adaptive frameworks and subject to adjustment or amendment are those with greater water-cost requirements and substantial uncertainties that attend predictions of biological outcomes and species-specific ecological and behavioral responses. Those are the same uncertainties that have restricted the draft EIS analyses to qualitative impact assessments instead of the preferable quantitative assessments. It is essential to assess the prospective environmental impacts of any management action that will be or may be implemented in an adaptive resource management framework action as it is described in this draft EIS but also anticipating potential adjustments or amendments to the action consistent with implementation in an adaptive framework. Adaptive management actions can be expected to potentially	Refer to Appendix E, Draft Alternatives, for a full description of the adaptive management program, its approach to scientifically building knowledge and improving management over time in a goal-oriented and structured way, and its use as part of a collaborative decision-making process. As actions stemming from the adaptive management framework are considered, Reclamation will evaluate whether the actions are within the effects analyzed in the EIS or if there is a need for additional environmental compliance.

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	necessitate adjustments to spatial attributes of the management action the timing of the action and/or the intensity of the action or volume of water dedicated to mitigatory or minimization purposes. Prescribed adjustments for an adaptively managed action may require moving it between water-year categories -- critical dry below-average above-average wet. In any such cases an adjusted action is expected to enhance benefits to the target species and/or reduce the water costs associated with the action. Important in this draft EIS any adapted actions may be accompanied by increased or lessened impacts on other sensitive species or other species of concern. Any such changes in the attributes of the adaptively managed action can result but not necessarily will result in environmental impacts different than those predicted by models that address actions not subject to adaptive adjustments. The draft EIS document can best address environmental impacts of management actions most likely to be implemented in an adaptive framework. First is to identify those actions that are anticipated to be subject to adaptive management. They are the actions that are accompanied with the most consequential attending uncertainties that have previously been identified as requiring better justification including using enhanced monitoring or directed studies and those that require greater water allocation commitments as the conservation prescription. Once prospective adaptive management actions are identified the second step is to expand the analyzed-effects assessment envelope to consider prospective adjustments to the action. Reasonable adjustments might be bounded at 20% of the prescribed action. If a prescribed management action in the draft document requires the release of 10000 acre-feet of water and has been analyzed at that action level the analysis would be expanded to consider the effects of the adjusted action from 8000 acre-feet (the action necessitating and adapting to a lower required water commitment) to 12000 acre-feet (a greater water commitment). The timing of the prospective adaptive management	

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	action may require adjustment. Analyses might consider adjustments of several weeks but probably not more than a month as well as adjustments that could require implementation in more or fewer water-year types. With the standing assessments of environmental effects mostly qualitative (not quantitative) and frankly speculative drawn from operational models that make ecological projections from data and analyses accompanied by substantial uncertainties the necessary expansion of analyses to accommodate adaptive management is probably not onerous. Actions with lesser attending water commitments and some of those with particularly well-demonstrated benefits to the targeted species or habitats are less likely to be implemented in an adaptive framework in the future. That observed it is not acceptable to assess impacts on individual species and their habitats from prescribed management actions that are subject to adjustments amendments or enhancements as if those actions are not subject to such changes. In order to avoid the need for additional NEPA or CEQA environmental review and revisions to the Biological Opinions we recommend that the draft EIS be expanded to include: A description of the Adaptive Management framework and decision-making process; Identification of those elements of the Proposed Action that are anticipated to be subject to adaptive management; Identify the proposed process for a priori definition of the intended biological outcomes from the adaptively managed actions and the associated measurable objectives that will be used to assess the performance of each action; Identify monitoring criteria required to evaluate each action; Identify the range of potential adaptive management refinements to an action (e.g. +/- 20% above and below the action level); and Assess the potential effects of modifying each adaptively managed action for the upper and lower bounds on each action in a revised EIS and the Section 7 ESA consultation process. SLDMWA is prepared to offer Reclamation technical and management-level assistance in	

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	developing the recommended additions to the EIS.	
80-146	[Example table referenced in comments related to page 12-59 above; Table shows a comparison between Alternatives 2 and 4 as an example of what is requested to be added to the EIS by the commenter.] Sacramento River: Winter-run Chinook salmon Alternative 2 Alternative 2 is expected to have minimal to beneficial impact resulting from increased egg survival and decreased temperature dependent mortality (Anderson predicted mean proportional TDM estimate range of all non- critically dry water year types and critically dry water year type: 0.001 - 0.052 and 0.468; Martin TDM estimate range of all non-critically dry water year types and critically dry water year type: 0.006 - 0.087 and 0.556; Figure 12-1) less fry stranding and lower redd dewatering potential and little to no impact on fry and juvenile rearing (range of predicted mean instream rearing habitat quantities across all water year types: 31.06 (July) 60.70 (October) acres) and beneficial impact on juvenile survival (average mean annual survival range of all non-critically dry water year types and critically dry water year type: 11.72 26.12 and 6.98; Figure 12-2). Alternative 2 requires more storage in Shasta Reservoir for higher releases. Alternative 4 Alternative 4 is expected to have adverse to beneficial impacts resulting from no impact on egg survival except an increase in survival in critically dry water year increased egg to fry survival and generally decreased temperature dependent mortality except wet water year types (Anderson predicted mean proportional TDM estimate range of all non-critically dry water year types and critically dry water year type: 0.005 - 0.105 and 0.649; Martin TDM estimate range of all non-critically dry water year types and critically dry water year type: 0.019 - 0.111 and 0.595; Figure 12-1) less fry stranding lower redd dewatering potential particularly in critically dry water year type and higher fry survival particularly in critically dry water year type and little to no impact on fry and	Table O-282 in Section O.8, Summary of Impacts, provides a comparison of all the modeled Alternatives, including Alternative 2 and Alternative 4, and is listed by species and location. The table provided by the commenter compares Sacramento River impacts for a limited number of species, but does not provide a comparison of all the geographic locations, species, or analyses. Reclamation will note feedback on the organization of the document for future efforts. We appreciate the thorough comparison of impacts between Alternative 2 and Alternative 4 that has brought forward as part of these comments that will be part of the Final EIS. Please refer to Standard Response 4, Alternatives Formulation, regarding the rigorous approach Reclamation undertook in the formulation of alternatives with different approaches and priorities to the many environmental resources addressed by this multipurpose project. Reclamation strongly believes that this rigorous approach has led to an adequate range of reasonable alternatives. The ROD will identify the selected alternative and the key considerations for that selection.

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	juvenile rearing (range of predicted mean instream rearing habitat quantities across all water year types: 31.85 (July) 60.10 (October) acres) and beneficial impact on juvenile survival (average mean annual survival range of all non-critically dry water year types and critically dry water year type: 14.90 26.13 and 7; Figure 12-2). Alternative 4 releases from Shasta Reservoir for water service contract deliveries to achieve an EOS storage of 2.0 MAF in Shasta Reservoir based on the 90% forecast unless a less conservative forecast requires more releases. Figure 12-2. Boxplots of annual mean seasonal March 15th through June 15th probability of juvenile Chinook salmon survival in the Sacramento River between the confluence of Deer Creek and Feather River for each water year type. Comparison Little difference in mean survival or range of TDM across alternatives. Figure 12-2 shows large overlap across alternatives. No substantive difference between the two Alternatives. Spring-run Chinook salmon Alternative 2 Alternative 2 is expected to have little impact from changes to flow on spawning spawner abundance and egg/alevin incubation adverse and beneficial impacts on redd dewatering habitat minor beneficial impact from water temperature on spawning and egg/alevin incubation with few negative impacts at Keswick negligible impacts from changes to the pattern of flow on rearing habitat (range of predicted mean instream rearing habitat quantities across all water year types: 31.06 (July) 60.70 (October) acres) beneficial impact on survival (average mean annual survival range of all non-critically dry water year types and critically dry water year type: 11.72 26.12 and 6.98; Figure 12-2) adverse impacts on juvenile stranding in drier water year types and expected adverse and beneficial impacts from water temperature on juvenile and yearling growth smoltification and predation vulnerability. Alternative 2 requires more storage in Shasta Reservoir for higher releases and implements spring pulses. Alternative 4 Alternative 4 is expected to have impacts from changes to flow on spawning spawning habitat	

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	spawner abundance and egg/alevin incubation adverse to beneficial impacts on redd dewatering expected beneficial impacts from water temperature on spawning and egg/alevin incubation adverse to beneficial impacts from changes to the pattern of flow on rearing habitat (range of predicted mean instream rearing habitat quantities across all water year types: 31.85 (July) 60.10 (October) acres) beneficial impact on survival (average mean annual survival range of all non-critically dry water year types and critically dry water year type: 14.90 26.13 and 7; Figure 12-2) and expected adverse and beneficial impacts from water temperature on juvenile rearing and emigration. Alternative 4 releases from Shasta Reservoir for water service contract deliveries to achieve an EOS storage of 2.0 MAF in Shasta Reservoir based on the 90% forecast unless a less conservative forecast requires more releases. Comparison Change in habitat between Alt 2 (31.06-60.70) is nearly identical to the range for Alt 4 (31.85-60.10). Mean annual survival under Alt 2 (11.72-26.12) and Alt 4 (14.9-25.13) in all but critical years are virtually identical. Survival in critical years is virtually identical (Alt 2 6.98; Alt 4 7.0). No substantive differences between the two Alternatives. California Central Valley steelhead Alternative 2 Alternative 2 is expected to have changes in flow that result in adverse and minor beneficial impacts with a -1.4 % to 5.8% difference in rearing habitat area depending on water year type. Changes in flow are also expected to have general beneficial impacts on fry stranding with a 30% reduction in below normal water year types but may have adverse impact in critically dry water year types with up to 8.8% increase in fry stranding. Changes to water temperature are expected to have a beneficial impact on juvenile rearing and emigration. Alternative 2 requires more storage in Shasta Reservoir for higher releases. Alternative 4 Alternative 4 is expected to have changes in flow that result in minor adverse and minor beneficial impacts with a -0.8% to 3.9% difference in rearing habitat area depending on water year type.	

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	Changes in flow are also expected to have beneficial impacts on fry stranding with up to a 23.4% decrease during dry water year types. Changes to water temperature are expected to have frequent beneficial impacts on juvenile rearing and emigration. Alternative 4 releases from Shasta Reservoir for water service contract deliveries to achieve an EOS storage of 2.0 MAF in Shasta Reservoir based on the 90% forecast unless a less conservative forecast requires more releases. Comparison Differences in habitat are similar (Alt 2 -1.4 to 5.8%; Alt 4 -0.8 to 3.9%) with both alternatives showing adverse and beneficial effects. Fry standing risk is similar (Alt 2 30%; Alt 4 23.4%). No substantive differences between the two Alternatives. Fall-run Chinook salmon Alternative 2 Alternative 2 is expected to have changes in flow that result in minor to moderate adverse and beneficial impacts; with a -2.1% to 1.5% difference in spawning habitat area depending on water year type up to 13.8% increase in redd dewatering potential in critically dry water year types up to a 8.3% reduction in redd dewatering potential in below normal water year types a -1.8% to 2.8% difference in rearing habitat area depending on water year type and more frequent reductions in fry stranding that are greater than a >10% difference (compared to increases in fry stranding). Changes in water temperature are expected to have adverse impacts on spawning initiation and adverse and beneficial impacts on juvenile rearing and emigration. Alternative 2 requires more storage in Shasta Reservoir for higher releases. Alternative 4 Alternative 4 is expected to have changes in flow that result in minor to moderate adverse and beneficial impacts; with a -1.4% to 1.1% difference in spawning habitat area up to a 22.1% increase in redd dewatering potential (an absolute difference of 1.4%) in critically dry water year types a -0.9% to 2% difference in rearing habitat area and reductions in fry stranding in all water year types (up to a -7.2% difference). Changes to water temperature are expected to have negligible impacts on spawning egg incubation and juvenile rearing and emigration. Alternative 4	

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	releases from Shasta Reservoir for water service contract deliveries to achieve an EOS storage of 2.0 MAF in Shasta Reservoir based on the 90% forecast unless a less conservative forecast requires more releases. Comparison Differences in habitat are similar (Alt 2 -2.1 to 1.5%; Alt 4-1.4 to 1.1%) with both alternatives showing adverse and beneficial effects. Risk of redd dewatering in critical years is similar (Alt 13.8% increase; Alt 4 22.1% increased risk). No substantive differences between the two Alternatives. Late fall-run Chinook salmon Alternative 2 Alternative 2 is expected to have changes in flow that result in adverse and beneficial impacts; with -2.0% to 0.4% difference in spawning habitat area depending on water year type 57.6% increase to 15.3% in redd dewatering potential during critically dry water years depending on the phase (absolute difference is less than 3%) a -1.7% to 2.8% difference in rearing habitat area depending on water year type up to a 41.4% increase in fry stranding during critically dry water years and up to a 31.4% reduction in fry stranding in below normal water years. Changes in water temperature are expected to have frequent beneficial impacts on spawning and egg incubation and adverse and beneficial impacts on juvenile rearing and emigration. Alternative 2 requires more storage in Shasta Reservoir for higher releases. Alternative 4 Alternative 4 is expected to have changes in flow that result in minor to moderate adverse and beneficial impacts; with -1.4 to 1.1% difference in spawning habitat area up to a 49% increase in redd dewatering potential during critically dry water years (absolute difference is 1.2%) a - 0.3% to 5.7% difference in rearing habitat area depending on water year type and reductions in fry stranding in all water year types with up to a 21.8% reduction during dry water years. Changes in water temperature are expected to have frequent beneficial impacts to spawning and incubation and adverse and beneficial impacts to juvenile rearing and emigration. Alternative 4 releases from Shasta Reservoir for water service contract deliveries to achieve an EOS storage of 2.0 MAF in	

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	Shasta Reservoir based on the 90% forecast unless a less conservative forecast requires more releases. Comparison Differences in habitat are similar (Alt 2 -2 to 0.4%; Alt 4 1.4 to 1.1%) with both alternatives showing adverse and beneficial effects. Redd dewatering risk in critical years is similar (Alt 2 57.6 to 15.3% increase; Alt 4 up to 49% increase). Differences between Alternatives are very small. Southern DPS green sturgeon Alternative 2 Alternative 2 is expected to have beneficial impact of flows increasing up to 33% resulting in a potential impact on spawning habitat in critically dry years and negligible impacts in all other water year types and minor adverse and beneficial impacts from water temperature on spawning and egg incubation. Alternative 2 requires more storage in Shasta Reservoir for higher releases. Alternative 4 Alternative 4 is expected to have negligible impacts of flow on spawning habitat across all water year types and beneficial or adverse impacts from water temperature on spawning and egg incubation depending on water year type. Alternative 4 releases from Shasta Reservoir for water service contract deliveries to achieve an EOS storage of 2.0 MAF in Shasta Reservoir based on the 90% forecast unless a less conservative forecast requires more releases. Comparison Alternative 2 has beneficial effects on spawning habitat (asserting up to a 33% increase in spawning habitat) while Alternative 4 has negligible impacts on spawning habitat. Few quantified analyses support conclusions drawn regarding the two Alternatives. It is difficult to distinguish differences between the two. Other aquatic species For aquatic species in the Sacramento River not described above potential impacts range from adverse to beneficial including no impacts depending on species life stage month and water year type. Alternative 2 and Alternative 4 are expected to have no impacts. Alternative 2 is expected to have adverse to beneficial impacts on Pacific lamprey and striped bass whereas Alternative 4 is expected to have negligible to minor adverse impacts. No	

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	substantial differences are identified. Given the qualitative descriptions of the effects of the two Alternatives it is hard to differentiate effects between the two. Bay-Delta Winter-run Chinook salmon Alternative 2 Alternative 2 is expected to have an adverse or beneficial impact from increased and decreased entrainment of juvenile LAD winter-run Chinook salmon (predicted average December through April monthly salvage at the Delta fish collection facilities range all non-critically dry water year types and critically dry water year type: 1 - 43 fish 1 - 9 fish) negligible impact on proportion of juveniles salvaged and adverse and beneficial impacts on survival (predicted December through April monthly through-Delta survival across all routes range all non-critically dry water year types and critically dry water year type: 0.440 - 0.664 0.373 - 0.472; Figure 12-3). Alternative 2 includes Old and Middle River Flow Management which adjusts exports to minimize entrainment of fish and protection of critical habitat. Figure 12-3. Boxplots of predicted mean through-Delta survival across all routes for relevant migratory months box edges represent 25th and 75th percentiles whiskers are the product of the interquartile range and 1.5 for each water year type. Alternative 4 Alternative 4 is expected to have an adverse impact from increased entrainment of juvenile LAD winter-run Chinook salmon (predicted average December through April monthly salvage at the Delta fish collection facilities range all non-critically dry water year types and critically dry water year type: 1 - 23 fish 1 - 10 fish) negligible impact on the predicted proportion of juveniles salvaged and adverse and beneficial impacts on survival (predicted December through April monthly through-Delta survival across all routes range all non-critically dry water year types and critically dry water year type: 0.443 - 0.664 0.374 - 0.467; Figure 12-3). Alternative 4 includes Old and Middle River Flow Management which adjusts exports to minimize entrainment of fish and protection of critical habitat. Comparison Differences in entrainment are similar. Alternative 2 predicts 1 to 43	

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	fish in all but critical years in critically dry years it predicts 1 to 9 fish. Alternative 4 predicts 1 to 23 fish in all but critical years and 1 to 10 fish in critical years. Through-Delta survival-rate means and ranges are virtually identical -- Alternative 2 in all but critical years 0.440 0.664 and Alternative 4 0.443 0.664. No demonstrated difference. The mean and 25%-75% survival ranges are virtually identical indicating similar through-Delta survival under both alternatives. No substantive difference is apparent. Spring-run Chinook salmon Alternative 2 Alternative 2 is expected to have beneficial and adverse impacts from decreased and increased entrainment (predicted average March through June monthly salvage at the Delta fish collection facilities range all non-critically dry water year types and critically dry water year type: 1 3544 fish 7 105 fish) and a negligible to beneficial impact on survival of out migrating juveniles (mean predicted survival to Chipps Island range all non-critically dry water year types and critically dry water year type: 0.182 0.328 0.134 0.143). Alternative 2 includes Old and Middle River Flow Management which adjusts exports to minimize entrainment of fish and protection of critical habitat. Alternative 4 Alternative 4 is expected to have an adverse impact from increased entrainment (predicted average March through June monthly salvage at the Delta fish collection facilities range all non-critically dry water year types and critically dry water year type: 1 3106 fish 9 105 fish) and a negligible impact on survival of out migrating juveniles (mean predicted survival to Chipps Island range all non-critically dry water year types and critically dry water year type: 0.182 0.326 0.134). Alternative 4 includes Old and Middle River Flow Management which adjusts exports to minimize entrainment of fish and protection of critical habitat. Comparison Differences in predicted entrainment are similar -- Alternative 2 1 to 3544 fish in all but critically dry years 7-105 fish in critical years; Alt 4 1 to 3106 fish in all but critical years 9-105 fish in critical years. Through-Delta survival-rate mean and ranges are virtually identical. Alt 2 in all but	

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	critical years 0.182-0.328; Alt 4 0.182 0.326. No substantive difference is apparent. California Central Valley steelhead Alternative 2 Alternative 2 is expected to have adverse and beneficial impacts from increased and decreased entrainment (predicted average December through June monthly salvage at the Delta fish collection facilities range all non-critically dry water year types and critically dry water year type: 23 8549 fish 13 500 fish) and adverse and beneficial impacts on survival of out migrating juvenile steelhead in the winter and spring dependent on OMR conditions. Alternative 2 includes Old and Middle River Flow Management which adjusts exports to minimize entrainment of fish and protection of critical habitat. Alternative 4 Alternative 4 is expected to have adverse and beneficial impacts from increased and decreased entrainment (predicted average December through June monthly salvage at the Delta fish collection facilities range all non-critically dry water year types and critically dry water year type: 15 9545 fish 12 590 fish) and adverse and beneficial impacts on survival of out migrating juvenile steelhead dependent on OMR conditions. Alternative 4 includes Old and Middle River Flow Management which adjusts exports to minimize entrainment of fish and protection of critical habitat. Comparison Differences in entrainment are minimal. Alternative 2 predicts 23 to 8549 fish in all but critically dry years 13-500 fish in critical years. Alternative 4 15 to 9545 fish in all but critical years 12-590 fish in critical years. Through-Delta survival rate means and ranges are essentially identical. Alternative 2 in all but critically dry years 0.182-0.328. Alternative 4 0.182 0.326). No differences between Alternatives. Southern DPS green sturgeon Alternative 2 Alternative 2 is expected to have a negligible impact on entrainment at both Delta fish collection facilities. Alternative 2 includes Old and Middle River Flow Management which adjusts exports to minimize entrainment of fish and protection of critical habitat. Alternative 4 Alternative 4 is expected to have a negligible impact on entrainment at both	

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	Delta fish collection facilities. Alternative 4 includes Old and Middle River Flow Management which adjusts exports to minimize entrainment of fish and protection of critical habitat. Comparison Impacts from both Alternatives are negligible. No substantive differences between them. Fall-run and late fall-run Chinook salmon Alternative 2 Alternative 2 is expected to have an adverse and beneficial impact on both fall-run and late fall-run Chinook salmon from increased and decreased entrainment at both fish facilities (predicted fall-run Chinook salmon average monthly salvage at Banks range all non-critically dry water year types and critically dry water year type: 0 15229 fish 0 336 fish; predicted fall-run average monthly salvage at Jones range all non-critically dry water year types and critically dry water year type: 0 4970 fish 0 244 fish; predicted late fall-run Chinook salmon average monthly salvage at Banks range all non-critically dry water year types and critically dry water year type: 0 700 fish 0 - 269 fish; predicted late fall-run average monthly salvage at Jones range all non-critically dry water year types and critically dry water year type: 0 - 210 fish 0 - 67 fish) and negligible impacts on through-Delta survival of both fall-run and late fall-run Chinook salmon (mean predicted fall-run Chinook salmon survival to Chipps Island range all non- critically dry water year types and critically dry water year type: 0.157 0.250 0.123 0.131; mean predicted late fall-run Chinook salmon survival to Chipps Island range all non-critically dry water year types and critically dry water year type: 0.151 0.265 0.137 0.139). Alternative 2 includes Old and Middle River Flow Management which adjusts exports to minimize entrainment of fish and protection of critical habitat. Alternative 4 Alternative 4 is expected to have an adverse and beneficial impact on both fall-run and late fall-run Chinook salmon from increased and decreased entrainment at both fish facilities (predicted fall-run Chinook salmon average monthly salvage at Banks range all non-critically dry water year types and critically dry water year type: 0 14888 fish 0 357 fish; predicted fall-	

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	run average monthly salvage at Jones range all non-critically dry water year types and critically dry water year type: 0 4987 fish 0 220 fish; predicted late fall-run Chinook salmon average monthly salvage at Banks range all non-critically dry water year types and critically dry water year type: 0 - 644 fish 0 - 237 fish; predicted late fall-run average monthly salvage at Jones range all non-critically dry water year types and critically dry water year type: 0 - 197 fish 0 - 65 fish) and negligible impacts on through-Delta survival of both fall-run and late fall-run Chinook salmon (mean predicted fall-run Chinook salmon survival to Chipps Island range all non-critically dry water year types and critically dry water year type: 0.157 0.249 0.122; mean predicted late fall-run Chinook salmon survival to Chipps Island range all non-critically dry water year types and critically dry water year type: 0.151 - 0.265 0.138). Alternative 4 includes Old and Middle River Flow Management which adjusts exports to minimize entrainment of fish and protection of critical habitat. Comparison Differences in entrainment predictions are non-existent. Alternative 2 0 to 15229 fish in all but critically dry years critical years 0-336 fish. Alternative 4 0 to 14888 fish in all but critical years 0-357 fish in critical years at SWP (Jones) and 0-4970 at CVP (Banks) in all but critical years 0-244 fish in critical years. Through-Delta survival rate means and ranges are essentially identical. Alternative 2 in all but critical years 0.157-0.250 at SWP Alt 4 0.157 0.249 at SWP). Survival estimates for the CVP are identical between Alternative 2 and 4. No demonstrated difference. Delta smelt Alternative 2 Alternative 2 is expected to have little to negligible impacts to larvae resulting from increased and decreased entrainment of larvae (Neutrally buoyant particle fate by inflow bin entrained at exports: 45% hi-hi 90% hi-lo; neutrally buoyant particle fate by OMR bins entrained at exports 56% at -2000 cfs 79% at -5000 cfs). For rearing habitat there are expected minor adverse to minor beneficial impacts on juveniles (Habitat Suitability Index (HSI) without temperature threshold of non-	

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	critically dry water year types and critically dry water year type: 0.513 0.65 and 0.402 0.424 and HSI with temperature threshold: 0.203 0.525 and 0.129 0.137). For population abundance there are expected adverse to beneficial impacts on the population growth rate (LCME: Geometric mean of predicted population growth rate of wet and above normal water year types and below normal dry and critically dry water year types: 1.24 (Wet and Above Normal) 1.28 (Wet and Above Normal) 0.74 (Below Normal Dry and Critically Dry) 0.74 0.77 (Below Normal Dry and Critically Dry) Figure 12-4). Alternative 2 includes Old and Middle River Flow Management which adjusts exports to minimize entrainment of fish and protection of critical habitat. Figure 12-4. Mean population growth rates aggregated across the years. Bar plot demonstrating the geometric mean of population growth rate (lambda) from 1995 to 2015 for the various alternatives. Alternative 4 Alternative 4 is expected to have adverse to beneficial impacts larvae resulting from increased and decreased entrainment of larvae (Neutrally buoyant particle fate by inflow bin entrained at exports: 53% hi-hi 92% hi-lo; neutrally buoyant particle fate by OMR bins entrained at exports 56% at -2000 cfs 80% at -5000 cfs). For rearing habitat there are expected negligible to minor adverse impacts on juveniles (Habitat Suitability Index (HSI) without temperature threshold of non-critically dry water year types and critically dry water year type: 0.483 0.638 and 0.387 and HSI with temperature threshold: 0.201 0.516 and 0.126). For population abundance there is an expected minor negative impact on the population growth rate (LCME: Geometric mean of predicted population growth rate of wet and above normal water year types and below normal dry and critically dry water year types: 1.25 (Wet and Above Normal) 0.72 (Below Normal Dry and Critically Dry) Figure 12-4). Alternative 4 includes Old and Middle River Flow Management which adjusts exports to minimize entrainment of fish and protection of critical habitat. Comparison Differences in availability of habitat (as	

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	measured using HSI) for delta smelt are similar. Alternative 2 0.513 to 0.65 in all but critical years 0.402 0.424 without a temperature threshold. Alternative 4 0.483 to 0.638 in all but critical years 0.387 in critical years. Assuming a temperature threshold the availability of "suitable" habitat was virtually identical between Alternatives 2 and 4. Alternative 2 0.203 0.525 in all but critical years 0.129 0.137 in critical years. Alt 4 0.201 0.516 in all but critical years 0.126 in critical years. Population-growth rates predicted by the life-cycle model were essentially identical between Alternatives 2 and 4. Alternative 2 1.24 in wet and above normal years and 0.74-0.77 in below-normal dry and critically dry years. Alternative 4 1.25 in W and AN years and 0.72 in BN D and C years. No substantive difference between the alternatives. Mean population growth rate is virtually identical between Alternatives 2 and 4. Longfin smelt Alternative 2 Alternative 2 is expected to have adverse to beneficial impacts to larvae (Neutrally buoyant particle fate by inflow bin entrained at exports: 45% hi-hi 90% hi-lo; neutrally buoyant particle fate by OMR bins entrained at exports 56% at -2000 cfs 79% at -5000 cfs) and adverse to beneficial impacts to juveniles resulting from increased and decreased entrainment (April May predicted juvenile longfin smelt salvage range all non-critically dry water year types and critically dry water year type: 1403 3757 fish 1110 1170 fish). For population abundance there are expected minor adverse to beneficial impacts to juveniles (Means of annual posterior predictive means for the FMWT index of longfin smelt abundance range all non-critically dry water year types and critically dry water year type: 94.7 716.3 76.8 79.1). Alternative 2 includes Old and Middle River Flow Management which adjusts exports to minimize entrainment of fish and protection of critical habitat. Alternative 4 Alternative 4 is expected to have adverse to beneficial impacts on larvae resulting from increased to decreased entrainment (Neutrally buoyant particle fate by inflow bin entrained at exports: 53% hi-hi 92% hi-lo; neutrally buoyant	

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	particle fate by OMR bins entrained at exports 56% at -2000 cfs 80% at -5000 cfs) and substantial adverse impacts on juveniles resulting from increased entrainment (April May predicted juvenile longfin smelt salvage range all non- critically dry water year types and critically dry water year type: 2124 3813 fish 1114 fish). For population abundance there is an expected negligible to minor adverse impacts on juveniles (Means of annual posterior predictive means for the FMWT index of longfin smelt abundance range all non-critically dry water year types and critically dry water year type: 94.6 702.5 76.3). Alternative 4 includes Old and Middle River Flow Management which adjusts exports to minimize entrainment of fish and protection of critical habitat. Comparison Differences in entrainment are similar. Alt 2 1403 to 3757 longfin smelt in all but critically dry years 1110 1170 juvenile longfin smelt in critical years; Alternative 4 2124 to 3813 smelt in all but critical years 1114 juvenile smelt in critical years. The predicted FMWT smelt abundance was virtually identical between alternatives Alternative 2 94.7 to 716.3 in all but critical years 76.8 79.1 in critical years. Alternative 4 94.6 702.5 in all but critical years 76.3 in critical years. No substantive differences are found between alternatives. Other aquatic species For aquatic species in the Bay-Delta not described above potential impacts range from adverse to beneficial including no impacts depending on species life stage month and water year type. Alternative 2 and Alternative 4 are expected to have beneficial to negligible impacts from seasonal operations on Pacific lamprey in the Bay-Delta. Alternative 2 is expected to have adverse and beneficial impacts and Alternative 4 is expected to have beneficial impacts. Alternative 2 and Alternative 4 are expected to have adverse and beneficial impacts. Alternative 1-4 are expected to have negligible impacts from seasonal operations to threadfin shad although impacts from entrainment are more variable. Alternative 2 and Alternative 4 are expected to have adverse and beneficial impacts from entrainment. Beneficial and adverse	

Ltr#-Cmt#	Comment	Response
	impacts appear to be similar between Alternatives 2 and 4. Based on the qualitative descriptions of effects on Bay-Delta fishery resources it is not possible to distinguish differences between Alternatives 2 and 4. Bay-Delta Alternative 2B Alternative 2b is anticipated to be more restrictive on Delta exports than Alternative 2 and the No Action Alternative. Please see Chapter 5 Water Supply for a description of the restrictions associated with the QWEST criteria under Alternative 2B. These restrictions on exports may result in increased outflow and a potential less adverse impact to fish and aquatic resources as larval and juvenile longfin smelt would be less likely to be entrained into the CVP and SWP Delta export facilities. In addition to the more restrictive QWEST criteria Alternative 2B includes an extension of the CCF operation period to December 1 through March 31 from mid-December through mid-March effectively increasing the operation of the SWP by one month. This expansion may result in more frequently meeting water quality seasonal thresholds and also meeting water quality weekly thresholds that may not have otherwise been met. Meeting these thresholds would result in additional export restriction under Alternative 2B that would result in increased outflow. Increased outflow could translate in less potential adverse impacts to fish and aquatic resources as larval and juvenile longfin smelt would be less likely to be entrained into the CVP and SWP Delta export facilities. On the other hand an increase in water supply could materialize in the event that the water quality thresholds are not met during the extended operation of CCF under Alternative 2B. Then Alternative 2B would result in additional exports that may decrease outflow and increase entrainment. Avoidance and Minimization Measures: Adult Migration and Holding Water Temperature Objectives - Relevant to water quality because it will influence the management of water temperatures which is a component of water quality. Under a circumstance where conditions may cause water temperatures to rise to concerning levels prior to the final TMP	

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	Reclamation will begin water temperature management as early as March 1 to target water temperatures of 58.0 F daily average at the Sacramento River above the Clear Creek Gage (CCR). Reclamation is a higher priority on maintaining storage for drought protection. The strategy is framed around a framework adapted from the multi-year drought sequence experienced in Victoria Australia (Mount et al. 2016 "Victorian Objectives") that establishes different objectives depending on hydrologic conditions and identifies actions that can be taken for fishery management and drought protection. Pulse Flows Relevant to Clear Creek water quality because it will result in higher flows which may increase dilution capability is a beneficial component of water quality. Except in years with significant uncontrolled spill Reclamation will release up to 10000 acre-feet from Whiskeytown Dam for channel maintenance spring attraction flows and to meet other physical and biological objectives. In critical years Reclamation will release up to 5000 acre-feet. Reclamation through CCTT will develop pulse flow schedules which include measures (e.g. nighttime down ramping slow down ramping rates coordination with natural precipitation events) to mitigate for potential risks (e.g. potential juvenile fish stranding). Water Temperature Management - Relevant to water quality because it will influence the management of water temperatures in Clear Creek to the targets shown in Table 3-12 which is a component of water quality. Reclamation will target Whiskeytown Dam releases to not exceed the mean daily temperatures at Igo gauge: 61F from June 1 through August 15. 60F from August 16 through September 15. 56F from September 16 through November 15. Reclamation may not be able to meet these water temperatures and will operate Whiskeytown Dam as close to these water temperatures as practicable. Delta Smelt Adult Entrainment Protection Action (Turbidity Bridge) - Relevant to water quality because it will influence turbidity which is a component of Delta water quality. If after a "First Flush" Action or	

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	after December 20 whichever occurs first daily average turbidity remains or becomes elevated to 12 FNU or higher at each of three turbidity sensors in the OMR corridor creating a continuous bridge of turbidity from the lower San Joaquin River to the CVP and SWP export facilities Reclamation and DWR will manage exports to achieve a five-day average OMR flow that is no more negative than -3500 cfs until the daily average turbidity in at least one of the three turbidity sensors is less than 12 D-3 FNU for two consecutive days thereby indicating a break in the continuous Turbidity Bridge. Spring Delta Outflow Relevant to water quality because this measure will enhance Delta outflows in the Spring which is a component of Delta water quality. Reclamation and DWR will take actions intended to supplement Delta outflow per the terms of the voluntary agreements (VAs). Reclamation and DWR will operate consistent with the VAs approved by the SWRCB and executed agreements by VA Parties. Actions that will support the additional Delta outflow include: (1) Reclamation and DWR south of Delta export modifications; (2) Reclamation reoperating upstream reservoirs to advance and allow for scheduling of water made available by contractors in CVP watersheds; and (3) passing Delta inflow from water made available by VA Parties. Volumes are reflected in the Memorandum of Understanding signed by VA parties in March 2022. Delta Smelt Summer and Fall Habitat - Relevant to water quality because it will enhance Delta outflows to maintain the location of X2 which addresses salt intrusion in the Delta. Maintain a 30-day average X2 less than or equal to 80 km for September through October in above normal and wet years. Under Alternative 2 DWR will operate the SMSCG in summer and fall (June through October) for 60 days using a seven-day tidal -seven-day open operation (7-7) schedule to maximize the number of days that Belden's Landing three-day average salinity is equal to or less than 4 practical salinity units. In dry years following below normal years DWR will operate SMSCG for 30 days using 7-7 operation to	

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	maximize the number of days Belden's Landing three-day salinity is equal to or less than 6 practical salinity units. Additional Mitigation Same as Alternative 1. Independent but Related Programs Same as Alternative 1. Alternative 4B Average monthly total exports are expected to be lower under Alternative 4B compared to the No Action Alternative in the winter higher in the spring and similar in the summer and fall. Higher exports during spring may increase entrainment of fish present like juvenile spring-run Chinook salmon winter-run Chinook salmon and steelhead. Lower exports during the winter may decrease entrainment of fish present like juvenile winter-run Chinook salmon. Avoidance and Minimization Measures: Water Temperature Management Relevant to water quality to fisheries because this will influence the management of water temperatures. Reclamation through governance would prepare a TMP consistent with requirements in WRO 90-5 and update the plan throughout the water temperature management season to improve water temperature conditions in the Sacramento River on or after June 16. Fall and Winter Instream Flows - Relevant to Sacramento River water quality because it will result in higher flows which is a beneficial component of water quality by augmenting the dilution capacity of the Sacramento River. Table D-1. Keswick Dam December through February Default Release Schedule determined by EOS Storage. Keswick Release (cfs) 3250 Shasta EOS Storage (MAF). Additional Mitigation Same as Alternative 1. Independent but Related Programs Same as Alternative 1. Comparison Based on the qualitative descriptions of effects on Bay-Delta fishery resources it is not possible to distinguish differences between Alternatives 2B and 4B. Based on the qualitative descriptions of avoidance and minimization measures it is not possible to distinguish differences between Alternatives 2 and 4. No differences.	
80-147	Attachment 4 of Attachment 3 [See original comment for	The commenter provided this attachment for reference

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	PowerPoint Presentation from April 18 2024 Trinity River Interested Parties Technical Meeting]	purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
80-148	Attachment 5 of Attachment 3 [See original comment for August 21 2024 Letter to BOR and DWR re: Fall X2 Request]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.
80-149	Attachment 6 of Attachment 3 [See original comment for August 30 2024 Joint Reply by BOR & DWR to Fall X2 Request]	The commenter provided this attachment for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.

Table 4-81. Letter No. 81

Ltr#-Cmt#	Comment	Response
81-1	I am a Sacramento resident living adjacent to the Lower American River who is very concerned with the long-term operation (LTO) of the Central Valley Project's (CVP) Folsom Dam which is congressionally authorized for both water supply and flood protection. Like many Sacramentans I care about flood risk on the Lower American River (LAR) but I absolutely treasure the river which is a California State-designated and federally-designated Wild and Scenic River offering amazing wilderness-quality character and wildlife in the heart of our city. I'm grateful for the prior flood control measures (like slurry cut-off walls in the levees) and the new infrastructure either recently completed at Folsom Dam (the auxiliary spillway) or under construction now (the Folsom Dam raise) and for the highly sophisticated hydrological forecast-informed decision-making system that's been in place officially in the wet season since 2019 (Update to Folsom Water Control Manual project) (Update project). The improvements to the Dam's infrastructure and the wet season operational approach are valuable additions for improving Greater Sacramento flood protection. However due to uncertainties of climate change and hydrological response to climate change and the reduction of flood control volume space assigned to Folsom reservoir in the Update project's selected alternative (essentially storing of water in the rainy season is now done more aggressively) I feel strongly that significantly more dedicated flood control space (somewhere on the scale of hundreds of thousands of acre feet) is needed for Folsom Reservoir as part of CVP-SWP Long Term Operations. More dedicated flood control space would better protect Greater Sacramento and its Wild and Scenic Lower American River from destructive river flooding.	Flood control diagrams for Folsom Reservoir are under the purview of the U.S. Army Corps of Engineers and outside of the scope of this EIS. Flood control is a nondiscretionary action for Reclamation.

Ltr#-Cmt#	Comment	Response
81-2	With more reservoir volume dedicated for flood control there would be reduced frequency and magnitude of large flood releases going down the Lower American River; and Greater Sacramento would therefore be more protected from river flooding. In this scenario Greater Sacramento would have a larger shock absorber and margin for error for controlling major storms and flooding. In addition because peak flows would be reduced the Wild and Scenic River would be less likely to suffer major channel/flood damage and losses such as to fishery habitat and recreation resources. This in turn has bearing on proposed "bank erosion" measures on the Lower American River. I am very concerned about the joint Army Corps and State-of-California project known as American River Common Features which is performing large scale riparian forest/habitat removal to install rip-rap rock on the Lower American River streambanks and making the Wild and Scenic River look like a tree-less hardened canal.	Reclamation appreciates the concern brought forward. Flood control diagrams for Folsom Reservoir and the American River Common Features Project are under the purview of the Army Corps of Engineers and are non-discretionary and outside the scope of this EIS.
81-3	In 2019 as part of the Folsom Update project an alternative was selected that allows for a maximum release of 160000 cubic feet per second (cfs) for the control of a 200-yr storm. There was very little public participation in this project possibly due to the COVID-19 pandemic. With more public input and more representation from Greater Sacramento it's possible a much lower maximum flow limit would have been chosen to reduce the peak flood flow going through a major urban area and to reduce overall flood risk. It's virtually certain that much less of the destructive river bank protection work would be needed if the CVP's Folsom Reservoir operated more toward the flood-control benefit side of the spectrum. In a more conservative flood protection stance for Folsom dam via the reservoir level being kept significantly lower in the wet season it would avoid needing to release dangerous levels of flow. A peak flow much	Changing flood control operational criteria of the CVP is outside the scope of the LTO EIS. Flood control operational criteria are established by USACE, and flood control is a nondiscretionary action for Reclamation.

Ltr#-Cmt#	Comment	Response
	less than 160000 cfs would be able to pass the same 200-yr storm (as already shown in modeling supporting the update Project.) In water year 2017 the Lower American saw a peak flow of ~ 82000 cfs enough to swell the river and to cause some to worry about flooding. Under the current long term operating plan of the CVP (which would allow and design for even higher peak flows) Sacramento is effectively taking some flood risk for the benefit of CVP water supply reliability interests overall (such as for exports from the Delta for San Joaquin Valley CVP contractor deliveries). Alternative operation could greatly reduce that flood risk. And the cost of the operational alternative in terms of somewhat lower water supply reliability for Greater Sacramento and the CVP is expected to be only a slight effect. There is favorable reservoir refill given the ratio of Folsom reservoir annual inflow relative to its capacity. The reservoir will still commonly fill just slightly less so than it does with more aggressive winter storage (that is less flood protective).	
81-4	I feel strongly that new alternatives need to be developed for CVP-SWP LTO that prioritize protecting Greater Sacramento from flood risk for the American River and include substantially lower peak flow limits for 200-yr storm events in the American River Basin (including modification of the Folsom Reservoir Water Control Manual). I hope that new modeling for inflow and reservoir operations can be performed which would include using an ensemble of the latest and best climate change data and tools together with various sizes of new flood control space as options on top of the existing alternatives. Just in the five years since the Update project there have been major advancements in climate change science. With new modeling and evaluations (weighing flood control and water supply benefits from changes in reservoir operation priorities) a new balance could be achieved that better accounts for climate	Please refer to Standard Response 9, Climate Change, for information on the climate change assumptions and methodology for all of the alternatives. Flood control is non-discretionary and outside the scope of this EIS.

Ltr#-Cmt#	Comment	Response
	change; is more flood protective of Greater Sacramento's lives and properties; avoids the need to design for (and rip-rap riverbanks for) destructive high peak flows; and still satisfies CVP water supply requirements.	
81-5	Thank you for your time and the opportunity to comment.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text.
81-6	Please see further references: The below articles and USACE website items confirm that the Folsom Dam Raise and the added storage capacity were earmarked for flood protection for the Greater Sacramento area. 1. FAQ question and response from the USACE website for the Folsom-Dam-Raise:https://www.spk.usace.army.mil/Missions/Civil-Works/Folsom-Dam-Raise/ (Question: Will the Folsom Dam Raise program create more floodplain in the areas around the lake?) USACE Answer: -No. The purpose of the Folsom Dam Raise program is to reduce flood risk to the entire Sacramento area.-We are adding top seals to the Folsom Dam gates and increasing the height of the earthen structure by 3.5 feet to create an extra 42000 acre-feet of temporary storage capacity within Folsom Lake. This extra capacity will only be used in significant flooding events to reduce the likelihood of Folsom Dam and other downstream structures overtopping or failing.-When completed the Folsom Dam Raise program should provide reduced flood risk for nearly 500000 people and 125000 structures. 2. And the "USACE Breaks Ground" article includes a photo and quotes of leaders from Congress the Bureau of Reclamation USACE and other federal state and local partners and it says the purpose of the Folsom Dam Raise is reducing flood risk.USACE breaks ground on $373 million Folsom Dam Raise project: https://www.spk.usace.army.mil/Media/News-	The commenter provided these sources for reference purposes in support of the EIS comments. Comments specifically referencing these sources are addressed in these responses to comments. Reclamation has reviewed and considered the information cited by the commenter.

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	Releases/Article/2062062/usace-breaks-ground-on-373-million-folsom-dam-raise-project/ 3. Corps awards contract to raise Folsom Dam:https://www.hydroreview.com/dams-and-civil-structures/dam-design-and-construction/corps-awards-contract-to- raise-folsom-dam/#grefFolsom Dam Constructors will raise the main dam and left and right-wing dams on the American River in California up to 3.5 feet and modify the eight spillway gates by adding top seals strengthening the gates and raising the gate piers. Together these measures will allow greater control of releases from the dam during large flood events and increase the temporary storage capacity of Folsom Lake that can be used to mitigate flooding for the greater Sacramento area. This will reduce the flood risk for 500000 residents and $58 billion of assets downstream.	
81-7	Please find attached my comment submission for the public draft EIS for the Long-Term Operation of the CVP and SWP.	In addition, the commenter provided attachments for reference purposes in support of the EIS comments. Those comments are addressed in these responses to comments.

Table 4-82. Letter No. 82

Ltr#-Cmt#	Comment	Response
82-1	We need to do more to protect the environment and in this situation save water to prevent extinction of fish. Farmers use the vast majority of the state's water which belongs to all of us and then use the subsidies to "export" it overseas. Enough. Select Alternative 3.	Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding comments that state opinions of general support for the project. Refer to Standard Response 7, Aquatic Resources, regarding general concern for adverse effects on aquatic resources that could potentially result from the alternatives. Support for Alternative 3 is noted.

Table 4-83. Letter No. 83

Ltr#-Cmt#	Comment	Response
83-1	I am a native to California, and this is really important to me. We need to follow objective science, while supporting state, national and international #30x30 protections for our flora [and] fauna.	40 Code of Federal Regulations § 1502.23 requires that agencies ensure the professional integrity, including scientific integrity, of the discussions and analyses in environmental documents. Please refer to Chapter 12, Fish and Aquatic Resources, regarding the analysis of potential effects on fish and aquatic resources, which has been conducted in compliance with NEPA. The analysis of potential effects in Chapter 12 is supported by multiple lines of evidence. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis contained in the EIS.
83-2	Please follow the scientists' proposal to support native species and select Alternative 3.	Each of the alternatives considered in the EIS has been developed with input from scientific experts from a variety of fields. Refer to Appendix A, List of Preparers. Refer to Standard Response 4, Alternatives Formulation, regarding the development of alternatives. Support for Alternative 3 is noted.

Table 4-84. Letter No. 84

Ltr#-Cmt#	Comment	Response
84-1	My word, give life a chance. Water is life: you have a duty to nourish the Biosphere. Alternative 3 for the win.	Refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding support for the proposed project. Support for Alternative 3 is noted.

Table 4-85. Letter No. 85

Ltr#-Cmt#	Comment	Response
85-1	Alternative 3 supports species ecosystems and potential tribal community recovery. All other alternatives including alternative 2b continue to manage California watersheds not as landscapes with natural processes but as if they are a set of ditches and dams.	Please refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach, regarding the purpose and need for the continued operation of the CVP and SWP as authorized consistent with applicable laws, contractual obligations, and agreements. Also, refer to Standard Response 1 regarding comments that state opinions of general opposition to the project. Refer to Standard Response 7, Aquatic Resources, regarding the evaluation of endangered fishes. The analysis is documented in EIS Chapter 12 and Appendix O, Fish and Aquatic Resources Technical Appendix. Support for Alternative 3 is noted.
85-2	The "voluntary agreements" that form the backbone of environmental mitigation for Reclamation preferred alternative 2b were created by a process that excluded community input particularly tribal input. Traditional Ecological Knowledge was not considered nor were tribal community interests. These agreements were voluntary only among the water consuming agencies who participated. They are involuntary for all others--the general public; NGOs tribes--who have only recently been invited to participate in the "voluntary agreements" after the parameters processes and structures were established.	Refer to Standard Response 10, Voluntary Agreements, regarding general concern about voluntary agreements. Please refer to Standard Response 1, Responses to General Comments and Comments About Public Outreach regarding the public outreach conducted during the environmental review process. Refer to the EIS Section 23.4, Consultation and Coordination, regarding Reclamation's coordination with interested parties, including tribal consultation. Furthermore, as described in Chapter 17, Environmental Justice, Mitigation Measure EJ-1 would require that Reclamation identify opportunities to gather Tribal Indigenous Knowledge for consideration in future Reclamation projects.

Table 4-86. Letter No. 86, Defenders of Wildlife

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86-1	Mr. Karl Stock Bureau of Reclamation Bay-Delta Office 801 I Street Suite 140Sacramento CA 958142536 Sent via email to [email]RE:2024 DEIS Regarding the Reinitiation of Consultation on Long-Term Operations of the Central Valley Project and State Water Project Dear Mr. Stock: This letter is submitted as the comments of Defenders of Wildlife on the 2024 Draft Environmental Impact Statement ("DEIS") regarding the reinitiation of consultation on long- term operations of the Central Valley Project ("CVP") and State Water Project ("SWP"). These comments are being transmitted to the Bureau of Reclamation ("BOR" or "Reclamation") the National Marine Fisheries Service ("NMFS") and the U.S. Fish and Wildlife Service ("USFWS").	This comment provides background information for subsequent comments.
86-2	In summary: Apart from Alternative 3 all the DEIS alternatives including the Proposed Action are as bad as or worse than the No Action Alternative ("NAA") and would jeopardize the continued existence of species. This is according to Reclamation's own analysis in the DEIS [Footnote 1: Given the short time window to review this extensive document and engage in the larger reconsultation process we have attached and incorporate by reference more detailed comments previously submitted to the Bureau on the Proposed Action. See Attachments 1 and 2].	The Council for Environmental Quality's (CEQ) NEPA Implementing Regulations require a minimum of 45 days for public review and comment on an EIS (40 C.F.R. § 1506.11[d]). Reclamation circulated the Draft EIS for public review for 45 days (July 26, 2024, to September 9, 2024). The duration of the comment period therefore complied with NEPA requirements. Reclamation also conducted extensive outreach over the course of developing the Draft EIS to help inform the public. Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, for duration of the comment period and general comments in opposition to a project. Reclamation staff and management remain available throughout the environmental review process to coordinate with interested parties and the public.

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		Each resource chapter and associated appendices of the EIS includes analysis of the effects of all alternatives. EIS resource chapters are 4–22. Specifically, please refer to Section O.1.12.1 in *Appendix O, Fish and Aquatic Resource Technical Appendix,* regarding the fall-run Chinook salmon ocean abundance. The results presented use the smolt survival estimated from various lines of evidence, including the Delta Passage Model. Please refer to Standard Response 2, Related Regulatory Processes, for the related ESA process, specifically the development of the biological opinions by USFWS and NMFS. Also refer to Standard Response 1 for duration of the comment period and general comments in opposition to the project. Support for Alternative 3 has been noted.
86-3	Reclamation's own analysis in the DEIS does not appear to have informed the agency's findings or selection of the preferred alternative. Indeed the quantitative results of the analyses are not reflected in the main body of the DEIS. Instead the results of the analyses which clearly show that all the alternatives except Alternative 3 will result in continued decline and extinction of listed species need to be disclosed in a clear and accessible form.	Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy and structure of the analysis.
86-4	The potential adverse impacts of the Proposed Action and other alternatives (except Alternative 3) are actually likely to be far worse than indicated in the DEIS. There are serious problems with the DEIS's analysis including but not limited to: a deeply flawed and unreliable analysis of temperature effects on juvenile Chinook Salmon; a failure to acknowledge or incorporate into its modeling analysis the best available science from recent studies on the effect of river flows on survival of different runs of Chinook Salmon upstream into and through the Delta; a failure to consider	Not only did Reclamation use reliable data per NEPA, but it also used the best available science and modeling to support the impacts analysis sections of the Draft EIS. Reclamation utilized the following modeling simulations: CalSim 3, HEC-5Q, Reclamation Temperature Model, DSM2, and USRDOM (Upper Sacramento River Daily Operations Model) as described in Appendix O, Fish and Aquatic Resources Technical Appendix, Section O.2,

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	both the current unsustainable levels of entrainment-related mortality of larval and juvenile Longfin Smelt and the increase in mortality for these life stages expected under the Proposed Action; and a failure to consider the current status of the San Francisco Bay estuary's White Sturgeon population or to properly analyze the Proposed Action's effect on this species and the threatened Green Sturgeon DPS. The Voluntary Agreements are not likely to occur and therefore the VAs should not be included as a component of the alternatives in the DEIS. In addition the purported magnitude and benefits of VA-associated flows are incorrectly described. The DEIS's treatment of drought management relies in large part on a voluntary largely qualitative Drought Toolkit without current authorization or funding for its implementation. Because this Toolkit is not reasonably certain to occur Reclamation must identify and commit to specific actions that will mitigate the highly foreseeable and largely avoidable conditions of drought and avoid the reliance on temporary urgency changes that have characterized drought management in the past fifteen years. Alternative 3 should be prioritized by Reclamation because it is the only alternative that adequately protects species and significantly reduces greenhouse gas emissions of the CVP. The DEIS improperly assumes that groundwater impacts of implementing Alternative 3 will be large and unmitigated rather than understanding that implementation of and compliance with the Sustainable Groundwater Management Act will prohibit such impacts. The DEIS also overlooks the immense water savings potential of water conservation measures to offset water supply impacts.	Methods and Tools. Forty lines of evidence, with input from these models, were used to support the analysis and are further described in detail in Appendix O, Section O.2. Entrainment of longfin smelt is addressed in the affected environment in Appendix O, Section O.1.9.1, and analyzed for the preferred Alternative 2 in Section O.5.13. Entrainment is also discussed relative to the No Action Alternative. The current status and affected environment of white sturgeon are described in Section O.1.9.1, Fish and Aquatic Species Evaluated in the Bay Delta. Impacts on white sturgeon are described in Appendix O (Sections O.3.8.1, O.4.15, O.5.15, O.6.15, and O.7.15), as well as in Section O.8, Table O-282. Green Sturgeon DPS is described in Chapter 12, Fish and Aquatic Resources, within the Bay-Delta section. Impacts on green sturgeon are described in Chapter 12, Fish and Aquatic Resources, within the Bay-Delta and Sacramento River sections, and in Appendix O (Sections O.3.4, O.4.11, O.5.11, O.6.11, and O.7.11), as well as in Section O.8, Table O-282. Groundwater Sustainability Plans (GSP) under SGMA for areas in the Central Valley have not been fully developed and adopted yet, so the exact details of sustainable management under SGMA for each basin and GWSB are not known. The C2VSimFG model does not directly simulate limitations to groundwater levels and pumping that may be imposed as part of SGMA. The model assumes that groundwater will be used to supplement water supply if surface water supplies are decreased to

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		meet demands. Conversely, if surface water supplies are increased, the C2VSimFG model will decrease groundwater pumping. The C2VSim FG model is reliable information under NEPA, appropriate for the comparative analysis of alternatives under this Draft EIS. Reclamation is one of the parties to the Healthy Rivers and Landscapes Program and signed a Memorandum of Understanding Advancing a Term Sheet for the Voluntary Agreements to Update and Implement the Bay-Delta Water Quality Control Plan, and Other Related Actions, dated March 29, 2022. The Healthy Rivers and Landscapes Program parties continue to work with the State Water Resources Control Board to adopt the Healthy Rivers and Landscapes Program into the Bay-Delta Water Quality Control Plan, which the Board currently has scheduled for adoption in Spring 2025. Reclamation understands the State Water Board has had delays in its schedule; this is why the Healthy Rivers and Landscapes Program flows are addressed as both early and post-implementation. The Draft EIS, specifically Tables F.2.4-7 through F.2.4-10 of Appendix F, Modeling, Attachment F.2.4 CalSim 3—Water Supply, presents the most current information and best available representation of Healthy Rivers and Landscapes operations related to the CVP and SWP export reductions, Shasta and Folsom reservoir reoperations, and Delta water purchase program. The cyclical nature of California hydrology and the resulting effect on federally listed species warrants special consideration for operation during droughts. Although

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		each drought is unique, contingency planning can facilitate an adequate response. California experiences variable climate, and periods of droughts are a recurring feature. Water stored in CVP and SWP reservoirs and groundwater basins mitigate droughts. Multi-year droughts occur when two or more successive years are dry, and reservoirs and groundwater reserves are depleted. The Drought Toolkit in general is a common component to the LTO of the CVP. Within 18 months of executing a Record of Decision, Reclamation would coordinate with DWR to develop a Drought Toolkit, which focuses on actions to implement as intervention measures during hydrologic years with drought and dry conditions. The Drought Toolkit includes actions that can either mitigate or avoid impacts throughout the Central Valley. Difficult trade-offs must be made to respond to year-specific conditions because decisions impact different resources. Reclamation would meet and confer with the USFWS, NMFS, DWR, CDFW, and Sacramento River Settlement Contractors on voluntary measures to be considered for implementation if drought conditions continue into the following year, including measures that may be beyond Reclamation and DWR's discretion. If dry conditions continue, Reclamation would regularly meet with this group (and potentially other agencies and organizations) to evaluate current hydrologic conditions and the potential for continued dry conditions that may necessitate the need for development of a drought

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		contingency plan (that may include actions from the toolkit) for the water year. Support for Alternative 3 has been noted.
86-5	In 2021 the Biden Administration appropriately reinitiated consultation in order to significantly revise and replace the Trump Administration's highly flawed and insufficiently protective 2019 biological opinions ("2019 BOs"). The 2019 BOs were subject to political interference and scientific misconduct and violated federal law. In addition we note that reinitiation of consultation was required as a matter of law because operations of the CVP and SWP have repeatedly exceeded the incidental take limits set in those biological opinions over the past several years. These exceedances include the incidental take limit in the 2019 NMFS BO regarding egg-to-fry survival of winter-run Chinook salmon. Most recently the CVP and SWP exceeded the incidental take limits in the 2019 NMFS BO for salvage of protected steelhead and winter-run Chinook Salmon. (50 C.F.R. 402.16; see also Defenders et al. Letter to BOR DWR USFWS CDFW and NMFS on ITL exceedance March 2024 Attachment 6).Given the alarming declines in the abundance of spring-run Chinook salmon the complete closure of the salmon fishery in 2023 and 2024 due to low abundance of fall-run Chinook salmon the Service's listing of Longfin Smelt under the Endangered Species Act ("ESA") and its finding that existing regulatory mechanisms are inadequate to prevent extinction of this species it is clear that significant changes in water project operations are necessary and appropriate [Footnote 2: See Endangered and Threatened Wildlife and Plants; Endangered Species Status for the San Francisco Bay-Delta Distinct Population segment of the Longfin Smelt 89 Fed. Reg. 61209 (July 30 2024). Available online: https://www.regulations.gov/ by searching for Docket No. FWSR8ES20220082; see also 50 CFR 17.11(h).]. Unfortunately review of the DEIS shows that those significant revisions have not occurred.	Please refer to Standard Response 2, Related Regulatory Processes, for a description of the ESA Section 7 consultation associated with this effort. Also refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, for general opposition to the project.

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86-6	I. The DEIS's Proposed Action is Deficient. The Proposed Action otherwise referred to hereinafter as the Preferred Alternative or Alternative 2 is deficient. According to the DEIS's own analysis the Proposed Action would jeopardize the continued existence of listed species. Indeed the potential adverse impacts from the Proposed Action are likely even worse than predicted given flaws in the DEIS's analysis of impacts to listed species. The entire analysis of effects of temperature on juvenile Chinook Salmon is deeply flawed and unreliable. The DEIS also overlooks the best available science from recent studies on the effect of river flows on survival of different runs of Chinook Salmon upstream into and through the Delta and fails to use that information to update its modeling analyses. In addition the DEIS fails to acknowledge that its own modeling shows winter-run Chinook Salmon juvenile production would decrease relative to the No Action alternative and temperature impacts to migrating adults would increase under the Proposed Action. The DEIS fails to acknowledge the beneficial effects of enhancing fall outflows for Delta Smelt or to acknowledge the findings of its own Delta Smelt Lifecycle Model analysis that Delta Smelt will go extinct under the Proposed Action. The DEIS likewise fails to disclose what its own analysis of Longfin Smelt clearly shows: that the species will go extinct under the Proposed Action (and most of alternatives other than Alternative 3) and that in contrast Alternative 3 is highly beneficial for the species. Furthermore the DEIS fails to consider both the current unsustainable levels of entrainment- related mortality of larval and juvenile Longfin Smelt and the increase in mortality for these life stages expected under the Proposed Action. Additionally the DEIS fails to adequately consider the current status of White Sturgeon or the Proposed Action's effect on the species or to use appropriate methodology to address the non-linear flow-recruitment relationship for this species. Similarly the DEIS fails to adequately consider expected negative impacts to threatened Green Sturgeon under the Proposed Action.	Reclamation consults with USFWS on any federal action with discretion that may affect federally listed species or their designated habitat, and they determine whether the action is likely to jeopardize the continued existence or adversely modify. The jeopardy determination will be conducted by USFWS and NMFS. Please refer to Standard Response 2, Related Regulatory Processes, for information on related regulatory processes. The juvenile Chinook salmon temperature impact analysis is adequate for NEPA purposes. Reclamation's analysis quantitatively evaluated temperature effects on eggs, fry, and adults (e.g., spawning initiation, pathogen susceptibility) based on published literature, historical observation, and available modeling tools. Please refer to Standard Response 7, Aquatic Resources, regarding the adequacy of the analysis for aquatic resources. Section O.5.8.1 of Appendix O, Fish and Aquatic Resources Technical Appendix, discusses potential changes to winter-run Chinook salmon from seasonal operations, including winter-run Chinook salmon juvenile production and temperature impacts to migrating adults. Attachment L.3 provides the full model results for Winter-run Chinook Salmon Juvenile Production Index Model. Attachment L.1 provides the full model results for Sacramento River Water Temperature Analysis (Table 4 for Keswick Dam, Table 6 for Red Bluff Diversion Dam, and Table 8 for Hamilton City). Alternative 2 and the No Action Alternative are expected to have a negligible water temperature–related impact on upstream migrating and holding adult winter-run Chinook salmon (Appendix O, p. O-723)

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		Discussions of entrainment of longfin smelt can be found in Chapter 12, Fish and Aquatic Resources (p. 22), and Appendix O (pp. O-401, O-404, O-407, O-836, O-838, O-842, O-1186, O-1188, O-1191, O-1448, O-1450, and O-1453); these are summarized in Appendix O (p. O-1615). Impacts on white sturgeon can be found in Chapter 12 (pp. 37, 42 and 44). Also, white sturgeon impacts can be found in Appendix O (pp. O-195–O-197, O-458–O-468, O-891–O-907, O-1223–O-1231, O-1435, O-1485– O-1491, O-1683, and O-1687). Impacts on green sturgeon can be found in Chapter 12 (pp. 26, 36, 44, 50, and 51). Also, green sturgeon impacts can be found in Appendix O (pp. O-185, O-239, O-375, O-383, O-595, O-809, O-816, O-1049, O-1167, O-1326, O-1431, and O-1579). The Draft EIS acknowledges that Alternative 3 has beneficial effects of enhancing fall outflows for Delta smelt in Appendix O (p. O-1177). Lifecycle modeling represents impacts from all ecological stressors to the species. Lifecycle modeling results are acknowledged in Draft EIS Chapter 12, Sections 12.2.7.6. and 12.2.7.7. Population growth rates for Delta smelt are shown Chapter 12, Figure 12-4. Figure 12-4 shows Alternative 3 as having positive population growth with Lambda 1.2 on average. Figure 12-4 also shows all other alternatives with lambda less than 1, and the preceding paragraphs describe the variability. Additional

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		information on longfin smelt relation to outflow can be found in Appendix O. The No Action Alternative, Alternative 2, and Alternative 4 include Delta smelt supplementation that is anticipated to benefit the population. Several tidal restoration projects included within the cumulative impacts chapter and appendix are also anticipated to benefit the Delta smelt and longfin smelt populations.
86-7	A. The DEIS's Proposed Action Will Have Negative Impacts on Listed Species. The DEIS fails to apply the best available science to analysis of impacts to endangered species and other biological outcomes. Its interpretation of modeling results fails to disclose the significance of impacts to listed species. To the extent that the analyses adequately compare the NAA with alternatives the DEIS demonstrates that Alternative 3 the modified natural hydrograph performs far better than the Proposed Action (also known as Alternative 2) and its variants. Furthermore the analyses reveal that incorporating the Voluntary Agreements ("VAs") into Alternative 2 does little or nothing to improve protections for endangered species and in some cases the VAs would exacerbate negative outcomes. Indeed several analyses reveal that the Proposed Action/Alternative 2 variants are worse for listed species than the NAA.	Please refer to Standard Response 5, *Adequacy of Analysis and Mitigation*, regarding the methodology and scientific accuracy of the Draft EIS. Reclamation used reliable data and scientific information resources throughout the EIS (40 CFR § 1502.23). Refer to Standard Response 10, *Voluntary Agreements,* for additional information regarding the effects and effectiveness of VAs and selection of the preferred alternative in relation to VAs. Impacts from the alternatives on listed species are described in *Chapter 12, Fish and Aquatic Resources,* and *Appendix O, Fish and Aquatic Resources Technical Appendix*. NEPA does not specify thresholds of significance; however, an EIS should identify the effects of an action and the significance of such effects. In this EIS, the primary approach to analyzing impacts on specific resources was to determine the degree and context of an expected change (40 CFR § 1501.3). Support for Alternative 3 is noted.

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86-8	The DEIS fails to adequately describe or disclose the context for the proposed changes in CVP operations. Fish and wildlife populations of San Francisco Bay and its watershed are experiencing an ecological crisis that has led to listing of six native fish species under state and/or federal Endangered Species Acts (SWRCB 2010 2017 2018; CDFW 2010). [Footnote 3: In June 2024 the California Fish and Game Commission made California White Sturgeon whose only known spawning population is in the San Francisco Bay watershed is a "candidate" for California endangered species act listing as threatened. Candidate species receive full protection under the California Endangered Species Act (CESA) making White Sturgeon the seventh native fish species protected under state and/or federal ESAs.] Declining production of Central Valley Chinook Salmon has led to closure of California's ocean fishery for the past two years and severe constraints on Tribal fisheries and has also contributed to food shortages for federally listed Southern Resident Killer Whales in the Pacific Ocean. The U.S. Environmental Protection Agency ("EPA") recently stated the problem succinctly: "Currently six fish species (Delta smelt longfin smelt green sturgeon Sacramento River winter-run Chinook salmon Central Valley spring-run Chinook salmon Central Valley steelhead) are listed or proposed as threatened or endangered under the Endangered Species Act. The Bay-Delta and its watersheds have also experienced increased frequency of harmful algal blooms (HABs) affecting aquatic life and human health. EPA reiterates that swift action is needed to address the imperiled state of the Delta and the species communities and economies that depend on this ecosystem for survival." USEPA 2024 enclosure at 1 and 2 (Pages 4-5 of the PDF).The conservation status of these imperiled species continues to deteriorate. For example in its recent evaluation of endangered winter-run Chinook Salmon NOAA-Fisheries' Southwest Fisheries Science Center stated:"Until additional [winter-run Chinook Salmon] populations are established the ESU will remain in the "High" biological extinction risk category. The overall viability of the ESU has continued to decline since the 2015 viability assessment (Johnson and Lindley 2016) with the single spawning population on the mainstem	The information provided is generally consistent with the affected environment in *Appendix O, Fish and Aquatic Resources Technical Appendix*. The Draft EIS analyzed impacts to longfin smelt in Chapter 12, Section 12.2.7.7, and within Appendix O (pp. O-124, O-163, O-165, O-190, O-398, O-833, O-1185, and O-1447). Pursuant to the ESA, Reclamation consults with USFWS on actions that may affect longfin smelt. Both the Reclamation's Draft EIS and the Biological Assessment Appendix incorporate existing environmental conditions including statues and regulations. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation. Please refer to Standard Response 2, Related Regulatory Processes, for a description of the ESA Section 7 consultation associated with this effort. Also, please refer to Standard Response 5, Adequacy of Analysis and Mitigation.

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	Sacramento River no longer at a low/moderate risk of extinction (Table 5.4)." (SWFSC 2023).Longfin Smelt were recently listed as "endangered" by the U.S. Fish and Wildlife Service (USFWS 2024a). Moreover the State of California recently declared California White Sturgeon as a candidate for listing under the California ESA listing as threatened (CDFW 2024). This state listing made White Sturgeon the seventh native fish species protected under state and/or federal ESAs. It is well-understood that water management including particularly operations of the CVP and SWP is a principal driver in the demise of native fish and wildlife species and water quality in the Bay-Delta estuary and its Central Valley watershed (SWRCB 2010 2017 2018; CDFW 2010). Again the U.S. EPA is clear on this point stating:"[Several] State Water Board reports in which the State Water Board compiled and analyzed a significant amount of comprehensive scientific information recognize that substantially more flow is needed in the Delta and Sacramento-San Joaquin watersheds to support aquatic life. Scientific consensus indicates that native fish population abundance is positively associated with flow volumes (e.g. Jassby et al. 1995 Sommer et al.1997 Mac Nally et al. 2010 Tamburello et al.2019) and that largescale increases in both flow and habitat restoration are needed to recover and protect these and other native species. Restoration of higher flow volumes may address key drivers of HABs including increased stream temperature and water residence time (Kudela et al. 2023; Berg & Sutula 2015 Lehman et al. 2013)." USEPA 2024 enclosure at 1 and 2 (Pages 4-5 of the PDF). Furthermore it is clear that existing regulations are not adequate to halt the decline of native species and water quality. For example USFWS recently concluded that listing of Longfin Smelt was necessary because: "Despite efforts such as those identified above [including existing requirements for the protection of other state and federal endangered species] the current condition of the estuary and continued threats facing the estuary and Bay-Delta longfin smelt such as reduced freshwater inflow severe declines in population size and disruptions to the DPS's food	

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	resources have not been ameliorated." (USFWS 2024a at 61046).The DEIS fails to transparently disclose this crucial context and thus denies decision makers and the public information needed to evaluate proposed changes to CVP operations and alternatives.	
86-9	1. Chinook Salmon The DEIS frequently fails to apply the best available science to analysis of impacts of the Proposed Action to Chinook Salmon in general and the listed winter-run and spring-run in particular. The interpretation of modeling results fails to disclose the significance of impacts to the endangered species or fisheries. To the extent that the analyses adequately compare the NAA with alternatives the DEIS demonstrates that Alternative 3 performs better than all other alternatives including the Proposed Action (Alternative 2b and its variants). Furthermore the analyses reveal that incorporating the Voluntary Agreements (VAs) into Alternative 2 does little or nothing to improve protections for winter-run Chinook Salmon or spring-run Chinook salmon and in some cases the VAs would exacerbate negative outcomes that are driving these ESA- listed species to extinction. Several of the DEIS's analyses clearly indicate that the Proposed Action will continue the trend towards extinction for listed salmonids or even exacerbate their decline. For example the "CVPIA SIT winter-run life-cycle model" (DEIS Appendix F Modeling Attachment F at 2) predicts that Alternative 2 variants will result in population growth rates that are as low or lower than the NAA in most cases. (DEIS Table F.2-9). Addition of the VAs to Alternative 2 leads to the worst population declines (Table F.2-10). Alternative 3 is the only set of operational criteria expected to produce population growth over the model's 19-year study period. (DEIS Table F.2- 10). In addition the DEIS's Oncorhynchus Bayesian Analysis (OBAN) model finds that all Alternative 2 variants and the NAA have a high probability of extinction for winter-run Chinook Salmon. As the DEIS appendix reports [Footnote 4: Reference to OBAN (or other models) does not indicate that we believe the model represents the best available science. Here the reference simply indicates that this model provides no evidence that the Proposed Action is likely to	Please refer to Standard Response 5, *Adequacy of Analysis and Mitigation*, regarding the methodology and scientific accuracy of the Draft EIS. Reclamation used reliable data and scientific information resources throughout the EIS (40 CFR § 1502.23). Refer to Standard Response 3, *Baseline and No Action,* for additional information regarding the No Action Alternative and sufficiency of the basis of comparison. Refer to Standard Response 10, *Voluntary Agreements,* for additional information regarding the effects and effectiveness of VAs and selection of the preferred alternative in relation to VAs. Impacts from the alternatives on listed species, including Chinook salmon, are described in Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix. NEPA does not specify thresholds of significance; however, an EIS should identify the effects of an action and the significance of such effects. In this EIS, the primary approach to analyzing impacts on specific resources was to determine the degree and context of an expected change (40 CFR § 1501.3). Clarifying text was added to the EIS regarding potential impacts to spring-run Chinook salmon resulting from the Park wildfire.

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	prevent further jeopardy to endangered species or that it is a meaningful improvement over the NAA.]:"Under all Alternative 2 components and the NAA median abundances dropped to below the quasi-extinction threshold within 10 years and to a value of less than 1.0 within 14 years. Median abundance was less than 9.0 for the remainder of the time series across all Alternative 2 components and the NAA. The pattern in abundance across components was due to low levels of egg to fry survival and delta survival throughout the model. In all components the median egg to fry survival was less than the median historical estimated egg to fry survival (median= 0.212 95% Credible Interval (0.083 0.501)) and the median delta survival (median = 1.23 x 10-2 95% Credible Interval 5.60 x 10-3 3.39 x 10-2)) . The historical estimated survival rates were estimated from escapements in 1967 2011 which was a period of winter-run Chinook population decline. Thus median survival rates that are below the historical values would result in modeled abundance declines over the 98-year time series." (DEIS Appendix F Modeling Attachment F.6 Oncorhynchus Bayesian Analysis Model at F.6-21). Similarly the DEIS's modeling of spring-run Chinook Salmon population dynamics shows that Alternative 2 will result in the same mean population growth rate as the NAA (Appendix F Modeling Attachment F.3 Tables F.3-5 and F.3-6). The status quo is not a good outcome for spring-run Chinook Salmon as this unique population is severely imperiled and its abundance and productivity continue to decline precipitously under current operations. Referring to spring- run Chinook Salmon the NOAA-Fisheries Regional Administrator was recently quoted as saying: "We are running out of options. We want this species to thrive in the wild but right now we are worried about losing them." (CDFW 2023a). Furthermore the DEIS fails to disclose that spring-run Chinook Salmon viability is now even further impaired by catastrophic wildfires that burned through their few remaining watersheds in 2024; the destruction of forests threatens to degrade habitats used for holding spawning incubation and early rearing. [Footnote 5: See e.g. https://www.latimes.com/environment/story/2024-08-06/park-fire-threatens-critical-california-salmon-	Support for Alternative 3 is noted.

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	habitat#:~:text=California's%20spring%2Drun%20Chinook%20salmonthat%20provide%20critical%20spawning% 20habitat]. It is in this context that the DEIS must interpret its modeling results; they reveal that spring-run Chinook Salmon will continue to decline under the Proposed Action as they are doing under the unacceptable status quo. Below we critique and interpret other analyses in the DEIS that deal with specific stressors and salmonid life-stages. Collectively these results reinforce the finding of the life cycle modeling operations under the Proposed Action will produce biological outcomes for listed salmonids that are worse or only marginally better than the NAA.	
86-10	Temperature Impacts The DEIS (Appendix AB-L Attachment L.1 Table L.1-1 at L-3)) and BA (Table 5-1 at 5-4) assume temperature thresholds for Chinook Salmon that are incorrect according to the best available science. [Footnote 6: The dissolved oxygen threshold presented in BA Table 5.1 is also incorrect as the best available science indicates that 5 mg/L of DO is detrimental for all life stages of Chinook Salmon and Steelhead (SEP 2019 at 110 121 126 139 151). The DEIS should be corrected to reflect this fact. Because effects of alternatives on DO are not analyzed in the DEIS we make no further comment on this error.] In addition the DEIS fails to disclose the time-step for its temperature metrics and modeled results (e.g. whether they represent daily averages daily maxima multi- day averages or multi-day averages of maximum temperatures). The absolute effect of the results in the DEIS are difficult to interpret without such specifics. With respect to egg incubation the best available science reveals that temperature dependent egg mortality (TDM) increases rapidly at daily average temperatures above 53.5oF (Martin et al.2017 2020). The Martin studies demonstrate this temperature threshold using field data laboratory studies and computer models. They collectively and convincingly explain (a) the mechanisms driving TDM in winter-run Chinook Salmon; (b) why earlier laboratory studies consistently overestimated the upper temperature threshold for Central Valley Chinook Salmon eggs and (c) the temperature tolerances for teleost fishes in general. Furthermore Martin et	The EIS summarizes temperature-related effects using multiple lines of evidence. Reclamation relied on ESU-specific information from California watersheds being considered; when this was not available, it deferred to the primary literature sources, not other regulatory or programmatic syntheses of temperature criteria. For lines of evidence presenting biological outcomes of alternatives, the models use the temperature parameter they were calibrated for, and they are each different. (For estimated TDM, see *Attachment L.2, Egg-to-fry Survival and Temperature-Dependent Mortality*, for Martin et al. 2017 and Anderson et al. 2022; for juvenile production index methodology, see *Attachment L.3, Winter-run Chinook Salmon Juvenile Production Index,* for model for JPI.) The assumptions and caveats and/or citations describing the limitations of these are included in each of the line of evidence attachments. For lines of evidence presenting modeled temperature data and exceedance of temperature criteria, multiple index values were identified from the literature and applied to consider exceedances. Regardless of whether there is disagreement with indices, the Draft EIS presents a comparative analysis of expected

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	al.'s results are consistent with recent literature reviews specific to Chinook Salmon in the Central Valley (Myrick and Cech 2004; SEP 2019) and well-documented syntheses of range-wide temperature tolerances (US EPA 2003). Thus there is no justification for the assumption that temperatures above 53.5oF are suitable for Chinook Salmon or for relying on old laboratory- based studies (e.g. Slater 1963) as a basis for temperature sensitivity of Chinook Salmon eggs. Indeed SEP (2019 Table 36 at 137) identifies daily average temperatures 53.6F to 55.9F as "stressful" and temperatures greater than or equal to 56oF as "detrimental" to incubating Chinook Salmon eggs. [Footnote 7: As defined by the SEP (2019 at p. 103) detrimental conditions are: "[a]ssociated with a significant level of harm at the individual or population level."] The optimal temperature range for Steelhead eggs is even lower than the upper end of the optimal range for Chinook Salmon (Myrick and Cech 2004; SEP 2019).Similarly the DEIS and BA assertions about temperature ranges suitable for juvenile Chinook Salmon rearing migration and smoltification (metamorphosis from freshwater to ocean-going juveniles) are entirely incorrect. Far from being "optimal" 68oF (20oC) as a 7-day average of daily maxima (7DADM) is the boundary between "stressful" and "detrimental" conditions for Chinook Salmon juveniles in river channel environments where food is typically limiting (Table 1; SEP 2019). [Footnote 8: Juvenile Chinook Salmon optimal temperatures are higher in inundated floodplain habitats because of the ad libitum availability of food (SEP 2019) but the 68oF 7DADM threshold for detrimental conditions still applies (Table 1).] [Footnote 9: Despite a wealth of recent "performance based" studies of different Chinook Salmon juvenile responses to temperature there is no convincing evidence that juveniles of the different Chinook Salmon runs differ materially in their temperature tolerances. The authors of several of those studies state: "Performance-based studies such as this one typically evaluate only short-term peak physiologic performance in a controlled setting and free of ecological stress and therefore may not reflect true capacity to tolerate high temperatures in a natural setting. In identifying temperature thresholds including site-specific targets it is critical to also consider how	temperatures under the action alternatives and the No Action Alternative. Additional clarifying text has been added to Appendix F.7, TDM. Dissolved Oxygen has been addressed qualitatively within *Appendix AB, Biological Assessment*. Anderson, J.J., Beer, W.N., Israel, J.A., and Greene, S. 2022. Targeting river operations to the critical thermal window of fish incubation: Model and case study on Sacramento River winter-run Chinook salmon. River Research and Applications 38: 895-905. Martin, B.T., Pike, A., John, S.N., Hamda, N., Roberts, J., Lindley, S.T., and Danner, E.M. 2017. Phenomenological vs. biophysical models of thermal stress in aquatic eggs. Ecology Letters 20: 50-59.

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	factors in the ecological setting (e.g. diet competition predators disease duration and habitat quality) impact fish response to temperature.] Although the time step of results for the DEIS and BA are not clearly stated we suspect that they report daily average or monthly average temperature results. Because averages are less than maxima by definition even daily average temperatures of 68oF represent even higher maximum temperatures. The DEIS's failure to apply the correct numeric temperature threshold (and associated time-step) for harm to juvenile Chinook Salmon biases its analysis of absolute effects of temperature on juvenile Chinook Salmon survival rendering them deeply flawed and unreliable.[See original comment for Table 1: Temperature thresholds for Central Valley salmonids identified in a recent literature review (SEP 2019). The upper three rows apply to fall-run and spring-run Chinook Salmon (which are believed to have the same temperature requirements as other Chinook Salmon runs) in river channel environments where food is usually limited. The lower 7 rows apply to Central Valley Steelhead (O. mykiss). Copied from SEP 2019 (Table 42).]Prolonged exposure to average daily maximum temperatures above 60.8oF (16oC) is sub-optimal for Central Valley juvenile Chinook Salmon when food is limited (Table 1; US EPA 2003; SEP 2019). Increases in temperature between 60.8oF and 68oF are associated with decreasing performance. Based on numerous review papers US EPA (2003) identified several negative impacts on juvenile Chinook Salmon of temperatures less than 68oF (20oC) and this is consistent with field studies from the Central Valley that found steady declines in survival above ~60.8oF. [Note: ... Further directly equating the results of performance-based site-specific tests to the thresholds in EPA 2003 would be inappropriate; such tests typically do not incorporate ecological factors to the extent of EPA 2003." (Zillig et al. 2020).[Note: Their caveat regarding US EPA 2003 would also apply to Myrick and Cech 2004 and SEP 2019 which considered empirical field results and ecological analyses in addition to laboratory studies in identifying key thermal thresholds.] (~ 16oC; Kjelson and Brandes 1989). Recent studies also indicate that negative effects on juvenile Chinook Salmon increase in severity as temperatures approach	

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	68oF (20oC).For example Nobriga et al. (2021) conclude:"[s]urvival was nearly zero for two smolt release groups exposed to water temperatures closest to 20oC and two others exposed to slightly warmer water. Qualitatively this abrupt decline in survival coincides with declining swimming capacity and increasing predation risk. This synthesis reinforces earlier studies that similarly indicated young Chinook Salmon must emigrate through the Delta before water temperature reaches 20oC."Similarly Lehman et al. (2017) (at their Figure 3) showed that performance of Chinook Salmon declined at temperatures above 18oC. Furthermore Munsch et al. (2019) found that cold water in the lower rivers and estuarine habitats promotes juvenile rearing such that size and duration of freshwater rearing increased measurably for every 1C decrease in April water temperatures. There is no suggestion in the relevant literature that 68oF is a suitable temperature for Chinook Salmon or Steelhead smoltification as asserted by the DEIS. In fact USEPA (2003) indicates that smoltification for both species may be impaired at temperatures above 53.6oF (12oC).Richter and Kolmes (2005) indicate that Steelhead smoltification may be inhibited at temperatures as low as 11C to 14C (51.8F to 57.2F). (See also USEPA (1999)). Myrick and Cech (2005) cautioned that smolting Steelhead in the Central Valley must experience temperatures less than 51.8F (11C) to successfully complete this metamorphosis. Finally the DEIS thresholds of 37.9-68oF for adult Chinook Salmon migration are also not supported by the best available science. USEPA (2003) identifies constant temperatures in this range (greater than 64.4-68oF (>18 - 20C)) as associated with "high" risk of disease outbreaks. Even the DEIS alternative temperature "index value" of 59.9oF is too high to reflect suitable conditions. SEP (2019 Table 19 at 108) finds daily average temperatures 57.2F to 66.2F (14C to 19C) are "stressful" to migrating adult Chinook Salmon and Steelhead and temperatures above 66.2oF are detrimental.The temperature thresholds applied in the DEIS affect the veracity of analysis for each of the Chinook Salmon runs (and Steelhead). The net result of these erroneous temperature thresholds is to underestimate and misrepresent the impacts of the Proposed Action and	

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	alternatives to each Chinook Salmon run. For example Tables L.1-3 through 1-8 and Tables L.1-9 through 1-14 (Appendix AB-L Attachment L.1 Sacramento River Water Temperature Analysis) are likely to underestimate the frequency of impacts to adult Chinook Salmon from high water temperatures because the DEIS's definitions of "optimal" or suitable temperatures are egregiously high.	
86-11	In another example of how incorrect temperature thresholds obscure the effects of the Proposed Action and its alternatives the DEIS analysis that purports to show how alternatives increase or decrease the number of month-water year type combinations with favorable and unfavorable temperature results (DEIS Appendix O Table O-32) is very likely to be incorrect in absolute terms. The table's defined range for temperatures "favorable" for juvenile growth migration and smoltification (55.4F68F) is distinctly unfavorable for Chinook Salmon and Steelhead with the high end of the range being well above the upper optimal thresholds for those two species identified. [Footnote 10: Not included in original comment] [Footnote 11: As elsewhere in the DEIS this analysis is further confused by the failure to provide temporal units for the temperature thresholds. The table title implies that it reflects monthly average temperatures in or out of its (incorrect) temperature range. Chinook Salmon temperature thresholds are typically expressed as daily averages or 7DADM (USEPA 2003) because these are timesteps that are relevant to the species' biology. Monthly average temperatures have little value for evaluating absolute impacts of project operations as they almost certainly incorporate daily average and daily maximum temperatures (and associated impacts) that are much higher. Even if daily average (or maximum) temperatures cannot be calculated using existing models the DEIS must acknowledge the implications of using monthly average outputs to evaluate impacts that occur at a daily (or shorter) timestep.] As a result the DEIS does not disclose how frequently project alternatives cause warm water temperatures that are harmful to juvenile Chinook Salmon and Steelhead.	The 55.4°F–68°F range used in the analysis was taken from the scientific literature (Myrick and Cech 2002, Marine and Cech 2004) and represents the best available science. These studies are based on fish from the Central Valley of California. The monthly timestep used in the temperature analyses is disclosed in the EIS in multiple locations: Attachment L.1, Sacramento River Water Temperature Analysis; Attachment M.2, American River Water Temperature Analysis; and Attachment N.1, Stanislaus River Water Temperature Analysis. Discussion of the monthly timestep as a limitation is found in Attachment L.1, Section L.1.2.1, Assumptions/Uncertainty; Attachment M.2, Section M.2.2.2, Assumptions/Uncertainty; and Attachment N.1, Section N.1.2.2, Assumptions/Uncertainty. Marine, K. R., and J. J. Cech. 2004. Effects of High Water Temperature on Growth, Smoltification, and Predator Avoidance in Juvenile Sacramento River Chinook Salmon. North American Journal of Fisheries Management, 24(1): 198–210. Available: https://doi.org/10.1577/M02-142.

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		Myrick, C. A. and Cech, J. J. 2002. Growth of American River Fall-Run Chinook salmon in California's Central Valley: Temperature and Ration Effects. California Fish and Game, 88(1): 35-44. Available: https://www.noaa.gov/sites/default/files/legacy/document/2020/Oct/07354626790.pdf.
86-12	Furthermore the low end of the range in Table O-32 is much higher than the minimum optimal temperature for juvenile Chinook Salmon (it is also inconsistent with the optimal range identified in Appendix AB-L.1). As a result operations that result in temperatures colder than the DEIS's (incorrect) lower temperature bound would be scored as "unfavorable" in Table O-32 when in fact they have no detrimental effect on juvenile Chinook Salmon. This is likely to be the case for some of the "unfavorable" results alleged in Table O-32 including those for "Below Keswick Dam" and "Red Bluff Diversion Dam" (compare Table O-32 to Appendix AB-L.1 Table L.1-4). Similarly the results relating to temperature impacts for migrating juveniles (Appendix AB-L.1 Table L.1-30) are uninformative and misleading. For example it is highly unlikely that river temperatures at Red Bluff are in excess of 68oF in December of all year types as the table portrays. Instead it is likely that this analysis shows that temperatures will be below 55.4oF in December; however that water temperature is not known to have significant negative effects on juvenile Chinook Salmon. The temperature standards used to assess project alternatives in the DEIS must be based in the best available science. The errors in analysis and interpretation of temperature impacts caused by the DEIS's use of erroneous temperature indicators must be corrected. In that vein the DEIS must also indicate the temporal units of index temperatures and its modeled temperature results.	Water temperature index values and ranges used in the analysis were taken from the scientific literature and represent reliable information and best available science. For the purpose of completeness, the analysis evaluates occurrence water temperatures outside the indicated range during the entire period when a life stage is present regardless of how "highly unlikely" an occurrence outside a range in a specific month of presence might be.
86-13	To the extent that comparisons between alternatives using the temperature thresholds above still represent the relative impacts of the Proposed Action it is clear that Alternative 3 is the superior alternative. The NAA frequently generates the worst temperature outcomes of the	Support for Alternative 3 has been noted. Please refer to Standard Response 1, Response to General Comments and Comments about Public Outreach, for information regarding general support and opposition to the project.

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	alternatives considered. Most variants of Alternative 2 represent little to no improvement over the inadequate NAA.	
86-14	Results for TDM are key to evaluating performance of alternatives relative to the 2019 Biological Opinion which failed to maintain even its own wholly inadequate requirements regarding egg and fry survival. The sheer number of studies of egg temperature tolerance thresholds (reviewed in Myrick and Cech 2004; Richter and Kolmes 2005; SEP 2019) illustrates the unquestionable importance for Central Valley Chinook Salmon of preventing high levels of TDM. For this reason tables comparing TDM under all alternatives should appear in the main body of the EIS and/or in the Appendix dedicated to fish impacts. The figures related to TDM in DEIS Chapter 12 (Figures 12-28 12-29 and 12-30) are not informative and fail to disclose that Alternative 3 will result in TDM that is less than half of that expected under the NAA (Appendix AB-L attachment L.2 Table L.2-2). TDM in Critical years during which high levels of TDM have occurred in the past and on average across all years is lowest for Alternative 3.[Footnote 12: The DEIS estimates TDM based on two different models the "Anderson Model" and the "Martin Model" based on Martin et al. 2017 2020. As noted above the model developed by Martin et al. is the gold-standard for estimating temperature impacts on incubating Chinook Salmon. There is no reason to present the "Anderson" alternative especially since it produces qualitatively similar results. For the sake of clarity and scientific accuracy the final EIS should omit reference to the "Anderson Model" estimates.] Of the Alternative 2 variants the version without VAs and with TUCPs performed best. Other Alternative 2 variants performed remarkably worse (each is projected to produce >50% TDM in Critical years and >10% TDM on average); there is no evidence that Alternative 2 variants adequately mitigate temperature impacts of the NAA. Alternative 1 displayed the worst performance increasing TDM over the unacceptable status quo in all drier years and causing high levels of TDM even in Wet and Below Normal years when TDM is generally low. Alternative 4 was the second worst scenario among the alternatives.	Please refer to Standard Response 4, Alternatives Formulation, regarding the structure and organization of the EIS. Please also see standard Response 5, Adequacy of Analysis and Mitigation. During alternative development, the rationales behind different concepts and approaches to coldwater pool management strategies were documented. These concepts and approaches are analyzed through multiple lines of evidence, which included temperature-dependent mortality. To inform the lines of evidence, Reclamation solicited input from agencies and interested parties for the knowledge base paper Shasta Cold Water Pool and Storage Management—Chinook Salmon and Steelhead Growth and Survival. Both the Martin et al. (2017) and Anderson et al. (2022) models were identified for the knowledge-based paper since both can be used to predict egg-to-fry survival for winter-run Chinook salmon as a function of temperature-dependent egg mortality, background mortality, and density-dependent mortality. The Draft EIS presents all results of the lines of evidence to best disclose the impacts of the alternatives. Anderson, J. J., W. N. Beer, J. A. Israel, and S. Greene. 2022. Targeting River Operations to the Critical Thermal Window of Fish Incubation: Model and Case Study on Sacramento River Winter-Run Chinook Salmon. River Research and Applications 38: 895–905.

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		Martin, B.T., Pike, A., John, S.N., Hamda, N., Roberts, J., Lindley, S.T., and Danner, E.M. 2017. Phenomenological vs. biophysical models of thermal stress in aquatic eggs. Ecology Letters 20: 50-59.
86-15	As described above the DEIS fails to use the best available science with respect to adult migration temperature thresholds. [Footnote 13: This impact is not hypothetical. Reclamation's operations of Shasta in April-May 2021 led to 6% pre-spawning mortality of winter-run Chinook Salmon upstream of Red Bluff (CDFW 2021 "Discussion" tab Row 5 available from https://www.calfish.org/ProgramsData/ConservationandManagement/CDFWUpperSacRiverBasinSalmonidMonitoring/tabid/357/Agg2208_SelectTab/4/Default.aspx]. Thus Tables L.1-3 through L.1-8 (Appendix AB attachment L.1) do not provide reliable information about the magnitude of temperature impacts on migrating adult Chinook Salmon. Furthermore the analysis ignores the fact that winter-run Chinook Salmon migration is not evenly distributed across the January-June period. According to the BA over 90% of winter-run have migrated past Red Bluff by the first week of June and only 10% of the annual run migrates past this location in January (BA Appendix AB-C Table C- 1). Moving forward Reclamation should indicate the relative impact of temperature exceedances on winter-run Chinook Salmon (and other species) in different months as weighted by the portion of the population expected to be exposed to these temperatures.	Reclamation used reliable data and best available science in developing its Draft EIS. The EIS summarizes temperature-related effects using multiple lines of evidence. Reclamation relied on ESU-specific information from California watersheds being considered; when this was not available, it deferred to the primary literature sources, not other regulatory or programmatic syntheses of temperature criteria. For lines of evidence presenting modeled temperature data and exceedance of temperature criteria, multiple indices values were identified from the literature and applied to consider exceedances (e.g., Appendix AB-L, Shasta Coldwater Pool Management). Reclamation considered the periodicity of species presence and the relative impact in the Biological Assessment evaluating the proportion of the population affected by a stressor. Please see Standard Response 5, Adequacy of Analysis and Mitigation.
86-16	To the extent that this analysis provides relevant information on relative impacts across the different alternatives we note that Alternative 3 outperforms all other alternatives in May of Wet years eliminating temperature impacts at Hamilton City; this alternative also performs best (lower temperatures) in May across all years (Table L.1-8). Projected increases in temperature impacts in June (of any water year type) are unlikely to occur because almost all winter-run Chinook Salmon are upstream of Hamilton City (and even upstream of Red Bluff) by June; thus	Support for Alternative 3 has been noted.

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	the results that combine "all" months within year-types at Hamilton City are erroneous and misleading.	
86-17	Similarly although the DEIS arbitrarily uses 59.9oF as an indicator of suitable temperatures for Chinook Salmon adults the relative differences between alternatives may provide some useful information. Again temperatures in different months and locations are differentially important to winter-run Chinook Salmon; no temperature impacts are projected under any alternative far upstream at Keswick and temperatures downstream of Red Bluff are not relevant to winter-run Chinook Salmon in June. At Red Bluff Alternative 1 performs best (Table L.1-12). Alternative 3 performs second best in May when most winter-run Chinook Salmon would be exposed to high temperatures expected under the NAA at this location. [Footnote 14: It is not clear what the data/units are for values in the "NAA" column represent given that the Table is said to reflect "Percent (difference in percent relative to NAA) of months This should be clarified in a revised DEIS.]With respect to holding temperatures for winter-run Chinook Salmon adults the temperature range used for analysis appears to match that supported by the best available science (SEP 2019 Table 26 at p. 120); therefore the DEIS's results for this analysis may reflect absolute as well as relative impacts of the Proposed Action and Alternatives. The analysis indicates that Alternative 3 produces the most suitable temperatures in Critical years and (along with Alternative 1) across all years (Table L.1-16). Of the Alternative 2 variants Alt2wTUCPwoVA produces the best holding temperatures on average but it is only the third best alternative.	As described in the header of Table L.1-12 in Attachment L.1, Sacramento River Water Temperature Analysis, the value of the No Action Alternative is in percent of months. For example, the No Action Alternative for a wet water year type in May (month 5) may be above the pathogen threshold in 75% of months, but Alternative 1 is only different in 32.1% of months. The difference in percent between 32.1% - 75% = -42.9%.
86-18	JPI Calculation -The DEIS attempts to predict the annual production of juvenile winter-run Chinook Salmon that migrate past Red Bluff each year a "juvenile production index" ("JPI"). The JPI is used to determine allowable take limits such as winter-run Chinook Salmon loss limits at the CVP and SWP export facilities in the south Delta. However the statistical prediction of JPI developed in the DEIS is not peer-reviewed not credible and not based in the best available science. First the model does not do a good job	Multiple lines of evidence are presented to evaluate operations on species. As the comment notes, the JPI has not been peer reviewed, but it is the only tool considered for evaluating operations (storage, blending, releasing from Shasta Division) on juvenile production, which is an independent metric from temperature-dependent mortality. Many lines of evidence are presented to

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	of predicting the data from which it was developed and it is not tested against data from other years. (DEIS Appendix AB-L attachment L.3 Winter-run Chinook Salmon Juvenile Production Index Model Figure L.3-2). Thus there is no evidence that this model is a reasonably good predictor of egg-to-to fry survival rates which is the key to JPI calculation. Second the model underestimates the importance of high water temperature one of the most important drivers of poor Chinook Salmon egg larval and fry survival. The DEIS reports that the one temperature variable included in the JPI predictive model mean water temperature at Highway 44 during winter-run Chinook Salmon incubation and emergence was not well supported statistically. (DEIS Figure L.3-6). As a result the model downplays or ignores the known effect of temperature impacts on winter-run Chinook Salmon egg-to-fry survival. A wealth of published studies makes the unassailable case that water temperature is a key factor in reproductive success of Chinook Salmon (e.g. USEPA 1999 2003; Myrick and Cech 2004; Richter and Kolmes 2005; Martin et al. 2017 2021). In fact, the DEIS uses models of TDM as its only means of estimating egg-fry-survival. (Appendix AB-L Attachment L.2 Egg-to-fry Survival and Temperature-Dependent Mortality). The DEIS states: "The Martin et al. (2017) or Anderson et al. (2022) models can be used to predict egg-to-fry survival for winter-run Chinook salmon as a function of temperature-dependent egg mortality background mortality and density-dependent mortality." (DEIS Appendix AB-L Attachment L.2 Egg-to-fry Survival and Temperature- Dependent Mortality at L.2-1). Furthermore, the State Water Resources Control Board ("State Water Board" or "SWRCB") states: "Exposure of Chinook salmon and steelhead populations to elevated water temperature is a major factor contributing to their decline (see Section 3.4; Myrick and Cech 2001). Reductions in cold water storage impede reservoirs from meeting their downstream water temperature requirements especially during critically dry years (NMFS 2009a 2014a)." (SWRCB 2017 at p. 4-18). Moreover the draft NMFS BiOp lists water temperature and storage egg Incubation and emergence temperature as a "primary stressor" for the listed Chinook Salmon runs and Central Valley	evaluate water temperature effects because, as noted by the commenter, it is a major factor. The Draft EIS describes the temperature stressor caused by storage and blending water on early life stages of Chinook salmon. Appendix O, Fish and Aquatic Resources Technical Appendix, *Section O.5.8.1* presents information for early life stages as well as adults supporting these effects with multiple lines of evidence. Reclamation presents several lines of evidence to allow for more fully considering impacts of operations, unbiased by perception of magnitude of drivers.

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	Steelhead (Draft NMFS Biological Opinion Table C p. 4). Elsewhere it reports a "high" weight of evidence that TDM is a "high" magnitude stressor for winter-run Chinook Salmon eggs that occurs with "medium" frequency affecting a "large" portion of the population (Draft NMFS BiOp Table KK at p. 71).Failure to include a variable that effectively captures the effect of high water temperature on Chinook Salmon egg larvae and fry success in the final JPI predictive model likely reflects inadequacy of candidate variables chosen to represent temperature effects rather than a lack of such an effect. Each of the temperature variables assumes a linear effect of temperature on winter-run Chinook Salmon JPI but the effect of temperature on Chinook Salmon eggs larvae and fry is non-linear (Myrick and Cech 2004; Martin et al. 2017). Below a critical threshold temperature has no effect on egg survival (water that is too cold for egg development is not a concern for winter-run) and above that threshold increases in temperature and exposure time produce very rapid increases in mortality. Thus, the candidate variables (average temperature during key incubation period "Temp_SAC_I" and cumulative degrees per day above 11.67C during incubation period at Hwy 44 "CD_above_11.67_I") would not be expected to correlate with JPI in a linear fashion. For example the average temperature indicator ("Temp_Sac_I") assumes that every increment of temperature has the same effect on egg larvae and juvenile success this is not true. Similarly the cumulative temperature variable ("CD_above_11.67_I") assumes that repeated small temperature exceedances (e.g. 0.2oC exceedance per day for 30 days) have the same effect on egg success as large exceedances over a short term (e.g. 6oC exceedance for one day) this is not the case. Also the "CD_above_11.67_I "variable would begin to increase before the critical temperature threshold had been exceeded for the bulk of the winter-run Chinook Salmon eggs. Because the vast majority of winter-run spawning occurs well- upstream of Highway 44 and water warms as it flows downstream in the summer temperatures equal to and a little above 11.67oC at Highway 44 correspond to optimal temperatures upstream where the vast majority of eggs are incubating. This kind of flawed construction of candidate variable	

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	explains in part the DEIS's failure to detect significant temperature effects on JPI. But this failure is not an excuse for the DEIS to reject the overwhelming body of literature showing negative effects of high water temperature on incubating Chinook Salmon eggs and the subsequent size of the juvenile cohort.Moreover the flow variables included in the DEIS's statistical model of JPI are not independent of river temperature.[Footnote 15: By contrast within the range of winter-run Chinook Salmon spawning river temperatures are not significantly affected by reservoir release volume; Danner and Daniels (2020) found that reservoir release temperature dominates the effect of river flow rate on river temperatures in the winter-run Chinook salmon spawning reach.] Winter-run survival is likely to be good during high flow years exactly because there is ample cold water behind Shasta Dam in addition to any other benefits provided by river flow. Shasta releases are liable to be low in years when coldwater pool is limited resulting in high TDM and poor JPIs. High summer Sacramento River flows are most likely in years when reservoir releases are not constrained by coldwater pool management. As an example the data set used to create the DEIS's JPI model includes 2014 2015 2021 and 2022 years when the Bureau and DWR requested and received waivers from Delta flow standards (also referred to as Temporary Urgency Change Orders) with the explicit intent of preserving cold water upstream behind Shasta Dam for the benefit of winter-run Chinook Salmon [Footnote 16: For example see SWRCB orders in 2014 2015 and 2022 specifically referencing preservation of upstream coldwater storage at: http://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/2014/wro2014_0029.pdf; https://www.waterboards.ca.gov/drought/docs/tucp/2015/tucp_order020315.pdf; and https://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/2022/wro2022_0095.pdf] . Despite those waivers temperature impacts on winter-run Chinook Salmon eggs were extraordinarily high and egg-to-fry survival exceptionally low during most of those years (DEIS BA Appendix AB Chapter 5 Table 5-13 at 5-45 and 5-46). In other words	

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	reservoir releases and flows in the incubation habitat of winter-run Chinook Salmon eggs were artificially low in those years because temperature impacts were expected to be and eventually were high. The relatively strong negative correlation between both discharge and mean flow at Red Bluff and the two temperature variables demonstrates that the JPI model's flow variables represent temperature effects at least in part. (DEIS Appendix L.3 Table L.3-2 at p. L.3-4.)Finally TDM does not necessarily correlate with JPI in a linear fashion. Instead TDM constrains JPI -- high or low reproductive success (egg-to-fry survival) are possible when TDM is low but only low egg-to-fry survival rates (and relatively low JPIs) are possible when TDM is high. The mechanism is clear: eggs that die due to exposure to high temperature do not contribute to juvenile production. This does not mean that TDM is unimportant (even at moderate levels) it simply means that TDM and the forces that produce it should not be expected to show up in the kind of statistical modeling attempted in the DEIS.Moving forward Reclamation should not use the current JPI model. Either a new valid predictor of JPI that accurately reflects the known role of river temperature on survival of Chinook Salmon egg larvae and fry must be developed or future documents must omit such a predictor and rely on estimates of TDM to gage the effect of alternatives on juvenile production. Reclamation should analyze the effects of alternative operations on winter-run Chinook Salmon using a version of the NMFS winter-run Life Cycle Model (https://oceanview.pfeg.noaa.gov/wrlcm/) updated to incorporate the best available science regarding the effects of river flow on winter-run juvenile survival (including Michel 2018; Henderson et al. 2019; Hance et al. 2021; Hassrick et al. 2022).If despite the flaws described above the DEIS's JPI estimate represents the relative effects of operational alternatives then this model predicts that all Alternative 2 variants will produce lower numbers of juvenile winter-run Chinook Salmon passing Red Bluff than the NAA (See Table 2 below). Furthermore the Alternative 2 variant that includes watershed-wide VAs ("Alt2woTUCPAllVA") performs worse than other Alternative 2 variants in the vast majority of years. If the final EIS maintains use of the DEIS's JPI prediction model then it must	

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	disclose the negative impact to winter-run Chinook Salmon population viability of reduced juvenile production expected under the Proposed Action relative to the current unacceptable status quo the NAA.[See original comment for Table 2: Predicted juvenile winter-run Chinook Salmon production indices for variants of Alternative 2 relative to the NAA. Copied from Appendix AB-L Shasta Coldwater Pool Management Attachment L.3 "Winter-run Chinook Salmon Juvenile Production Index Model".]	
86-19	In-stream flow effect on survival The DEIS fails to acknowledge findings of recent peer-reviewed literature which reveals the positive effect of river flow into the Delta on habitat use in and survival beyond the Delta (Michel 2018; Munsch et al. 2020). Similarly the DEIS fails to disclose the effect of flow on juvenile Chinook Salmon as they migrate downriver from Red Bluff to the Delta despite recent peer-reviewed research that shows that flow is the dominant variable affecting in-stream migration success (Henderson et al. 2019; Sturrock et al. 2019; Friedman 2019Notch et al. 2020; Hassrick et al. 2022)). Reclamation should incorporate the findings of these recent studies and others that represent the best available science on the effect of river flow upstream and into and through the Delta on survival of each run of Central Valley Chinook Salmon.	The Draft EIS evaluates the effects of alternative operations (storage, release, diversion, and routing) on instream flow using multiple tools selected during the Initial Alternative Report Phase. This includes considering effects on travel time and survival by reviewing the literature (including some of the citations listed by the commenter), available models: XT Model (Attachment J.4) and Flow Threshold Salmon Survival Model (Attachment J.5). The flow-threshold salmon survival model is from Michel et al. 2018. Please refer to Standard Response 5, Adequacy of the Analysis and Mitigation. Michel, C. J., J. M. Smith, N. J. Demetras, D. D. Huff, S. A. Hayes. 2018. Non-Native Fish Predator Density and Molecular-based Diet Estimates Provide Direct Evidence of Predation on Juvenile Salmon in the San Joaquin River, California. San Francisco Estuary and Watershed Science 16(4). Available: https://doi.org/10.15447/sfews.2018v16iss4art3.
86-20	Through-Delta Survival Impacts The DEIS states: "The survival of juveniles in the Sacramento River downstream of Red Bluff Diversion Dam is addressed primarily under the outmigration cues stressor while the	As noted in the comment, Reclamation did complete lines of evidence to evaluate through-Delta survival impacts from water operations including releases,

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	survival of juveniles in the Delta is addressed primarily by entrainment risk." (BA Appendix AB Chapter 5Winter-Run Chinook Salmon at 5-56). This is misleading. Whereas entrainment of listed Chinook Salmon at the CVP and SWP pumps is an important indicator of the impact of water exports it is far from the only impact of CVP/SWP operation on through-Delta survival. Citing the U.S. Department of Interior the State Water Board notes: "More important than direct entrainment effects however may be the indirect effects caused by export operations increasing the amount of time salmon spend in channelized habitats where predation is high (USDOI 2010 29)." (SWRCB 2017 at p. 3-47). In fact the DEIS employs several models to estimate through- Delta survival of Chinook Salmon that incorporate flow including the STARS model and Delta Passage Model (see below) particle tracking models the CVPIA SIT models for winter-run Chinook Salmon and spring-run Chinook Salmon the Interactive Object-oriented Simulation (IOS) Model etc.	diversions, and routing through the DCC gates. The BA evaluates two mechanisms affecting through-Delta survival: (1) fish routing through specific migratory pathways in the Delta (travel time and survival effects); and (2) fish encountering CVP and SWP facilities (loss). These model results are reflected in the BA and EIS (Appendix AB-I—Old and Middle River Flow Management).
86-21	STARS Model -The DEIS employs the Survival Travel Time and Routing Simulation ("STARS") model to evaluate the effect of flows in Delta channels on the routing and ultimate success of migrating Chinook Salmon juveniles. The results of Perry et al. (2018) upon which the STARS model is based have been largely corroborated for other runs of Chinook Salmon migrating in different seasons (Hance et al. 2021). The STARS model should be updated to incorporate the more recent results from Hance et al. Also the DEIS should acknowledge that the STARS model is relevant to routing and survival of Chinook Salmon smolt only not fry that rear in the Delta before migrating to the ocean. Munsch et al. (2020) document the effect of flow on occupancy and density of wild-spawned Chinook Salmon fry in shallow tidal rearing habitats in the Delta.Reclamation should analyze the effect of different operational alternatives on juvenile Chinook Salmon survival in-river to the Delta. In addition Reclamation should investigate how each operational alternative affects use of shallow tidal habitats by emigrating fry Chinook Salmon; this is especially relevant given that mitigation for combined project	The Hance et al. (2021) version of STARS code was not available to Reclamation at the time of model selection in 2020–2021. As noted in the comment, the results have largely been corroborated through other studies. In future planning processes, updated and available models may be used. Reclamation considered the effects of operations of juvenile Chinook salmon survival by evaluating the effects of releases, diversions, and routing at the DCC gates by considering their stress on outmigration cues, entrainment risk, predation and competition, refuge habitat, food availability and quality, and water temperature. Consideration for model selection for evaluating these stressors occurred during the Initial Alternative Report Phase. Fall-run and spring-run Chinook salmon specific results evaluating through-Delta survival include the Delta Passage Model, salvage density model, and the negative binomial loss model,

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	operations has emphasized restoration of this type of "habitat."Using the STARS model the DEIS compares through-Delta survival of Chinook Salmon smolt from December-April under each of the project alternatives. (DEIS Appendix AB-I Attachment I.5 Table I.5-3). This time-period is most relevant to winter-run Chinook Salmon smolt migration. It is not clear why the model was not applied in each month that Chinook Salmon smolt migrate so that readers could easily understand impacts to other runs including the listed spring-run Chinook Salmon and economically ecologically and culturally important fall-run Chinook Salmon. Moving forward Reclamation should ensure that the STARS model is used to investigate the success of migrating smolt of each Central Valley Chinook Salmon run.In each month studied the DEIS projects that the greatest modeled increase in survival of winter- run smolt will occur under operations specified in Alternative 3. Effects of other alternatives vary from month to month and the DEIS does not summarize them. However it is clear that Alternative 1 performs worse than the other runs (with through-Delta survival declining 7.6% in December and 2.6% in January versus NAA). Alternative 4 is nearly identical to the NAA. The Alternative 2 variants are barely different from NAA in most cases with each variant expected to result in survival less than or equal to the NAA in at least one month. Table I.5-4 presents a different view of the same output from the STARS model this time binning the data by categories of Sacramento and San Joaquin inflow to the Delta. Not surprisingly Alternative 3 is again the superior operational approach with through-Delta survival exceeding that of other operational alternatives in nearly every "inflow group" combination (DEIS DEIS Appendix AB-I Attachment I.5 Figure I.5-4). Figure 1.5-10 clearly displays the substantial effect of increasing river flow on through-Delta survival under all alternatives. The BA's "takeaways" do not disclose these results focusing instead on the range of Delta survivals estimated for the NAA and the Alternative 2 variants alone. Reclamation should disclose that Alternative 3 is expected to result in higher Delta survival than any of the Alternative 2 variants and that the latter are only marginally different and sometimes worse than the NAA.	which were developed for these species. The model used by Reclamation provided results consistent with the expected outcomes. Reclamation is not aware of the model cited by the commenter (Munsch et al. 2020) that provides a method to estimate occupancy or density of fish related to flows and shallow tidal habitats. Hance, D. J., R. W. Perry, A. C. Pope, A. J. Ammann, J. L. Hassrick, and G. Hansen. 2021. From Drought to Deluge: Spatiotemporal Variation in Migration Routing, Survival, Travel Time, and Floodplain Use of an Endangered Migratory Fish. Canadian Journal of Fisheries and Aquatic Sciences 79(3):410-428.

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86-22	Delta Passage Model - The DEIS also applies the Delta Passage Model (DPM) to study through-Delta survival. As elsewhere in the DEIS and BA where different models are used to analyze the same outcomes the DEIS must identify the purpose of applying different models and the specific benefits and shortcomings of the models applied. Otherwise application of different models to the same phenomenon generates confusion and obscures the best available science. Like the STARS model DPM relies on data from tagged smolt to estimate routing and survival of smolt through the Delta; neither model addresses survival probabilities of smaller fish that migrate into and attempt to rear in the Delta. Because they are weaker swimmers than smolt and because they reside in the Delta longer Chinook Salmon fry and parr are likely to be more susceptible to differences in Delta hydrodynamics caused by operational alternatives for the CVP/SWP. Reclamation should acknowledge that survival of the very large portion of juvenile Chinook Salmon that enter the Delta as fry or parr is not modeled by either the STARS model or DPM. Figures depicting survival under the alternatives analyzed (e.g. Appendix AB-I Attachment I.6 Delta Passage Model: A Simulation Model of Chinook Salmon Survival Routing and Travel Time in the Sacramento San Joaquin Delta Figures I.6-12 & 6-14) obscure actual differences between the alternatives by depicting variance that has nothing to do with the alternatives. River flow conditions that effect through-Delta survival of Chinook Salmon (and other fish) are affected by underlying annual hydrology. Within a water year-type the wettest years may be many-fold wetter than the driest years. This variance in underlying conditions will affect river flows in each alternative but much of the resulting variance in annual hydrology within water year types has nothing to do with the alternatives themselves. Each alternative will experience the same underlying (unimpaired) hydrology in each year. Thus, plotting the variance (box and whiskers) of survival outcomes for each alternative expands the y-axis and tends to make the alternatives look similar or even indistinguishable and it implies that the relative differences between alternatives in any given year is uncertain because they are "variable". But this is not the case. Studying the	Multiple models are used comparatively to look for differences or similarities in prediction. The STARS and DPM model documentation both describe caveats, assumptions, and/or citations for these models where there is guidance and interpretation related to the model's potential sources of uncertainty. The difference between each alternative and the No Action Alternative is provided by year and water year type in each of the line of evidence (e.g., STARS, DPM) appendices, and raw results are available from Reclamation. During alternative development, the rationales behind different concepts and approaches to Old and Middle River Flow Management strategies were documented. These concepts and approaches are analyzed through multiple lines of evidence, which included the STARS and DPM models. To inform the lines of evidence, Reclamation solicited input from agencies and interested parties for the knowledge base paper Old and Middle River Reverse Flow Management—Smelt, Chinook Salmon, and Steelhead Migration and Survival Knowledge Base Document. Both the Perry et al. 2018 (STARS model) and Delta Passage Simulation Model were identified for the knowledge-based paper since both can be used to inform salmon survival from the Sacramento River Basin out to the Delta. The Draft EIS presents all results of the lines of evidence to best disclose the impacts of the alternatives. Please refer to *Appendix Q, Regional Economics Technical Appendix,* for additional details on Reclamation's analysis of potential effects on fisheries-related changes to the regional economy, which include the commercial and

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	differences between alternatives would focus the analyses on the variation that results from the alternatives themselves. Reclamation should visualize differences between alternatives by plotting the average differences and variation in differences rather than average outcome and variation in those outcomes for each alternative. Because the DEIS uses STARS only to evaluate winter-run Chinook Salmon smolt survival through the Delta we are left with the DPM results to evaluate survival for the other runs. Table I.6-6 (Appendix AB-I Attachment I.6) corroborates the STARS model projections for winter-run Chinook Salmon smolt under each alternative relative to the NAA. Alternative 3 displays substantially higher survival for smolt of each run than any of the other alternatives; winter-run smolt survival is projected to increase by up to 7.73 percent relative to the NAA and improvements are substantial in every year type. Depending on year-type survival of listed spring-run Chinook Salmon smolt is expected to increase by 5.16-9.31 percent under Alternative 3 operations versus the NAA. Each of the Alternative 2 variants results in worse survival for spring-run Chinook Salmon smolts than the NAA in at least one water year type. Alternative 1 results in declines in winter-run Chinook Salmon smolt survival compared to the NAA in all water year types and in all but Critical years for spring-run Chinook Salmon smolt. Alternative 3 is also projected to result in substantial increases in survival of fall-run and late-fall run smolts relative to the NAA. In fact survival for these runs under Alternative 3 is superior to all other alternatives in the vast majority of years. By contrast Alternative 1 results in survival worse than the NAA in all water year types for late-fall run Chinook Salmon. Three of the Alternative 2 variants (wTUCPwoVA; woTUCPwoVA; woTUCP; DeltaVA) result in fall-run smolt survival that is worse than the NAA in most years. Moving forward Reclamation must disclose the likely negative effects on Central Valley and marine Chinook Salmon fisheries of the reduced fall-run and late-fall run smolt survival in some water year types under certain operational alternatives.	recreational ocean salmon fishery under the range of alternatives. Perry, R. W., A. C. Pope, J. G. Romine, P. L. Brandes, J. R. Burau, A. R. Blake, A. J. Ammann, and C. J. Michel. 2018. Flow-Mediated Effects on Travel Time, Routing, and Survival of Juvenile Chinook Salmon in a Spatially Complex, Tidally Forced River Delta. Canadian Journal of Fisheries and Aquatic Sciences 75(11):1886–1901.

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86-23	2. Delta Smelt. The DEIS applies the USFWS Delta Smelt Life Cycle Model (Delta Smelt LCM) to analyze CVP operational alternatives. This model represents the best available science. However as applied in the DEIS the Delta Smelt LCM does not consider supplemental fall outflow (the "Fall X2" action) to be a benefit to Delta Smelt despite the fact that many papers (including research that informs the Delta Smelt LCM) indicate that fall outflow has a significant positive effect on Delta Smelt abundance probably via its effect on larval recruitment (USFWS 2008; Rose et al.2013ab; Polansky et al. 2021; CSAMP 2024). Other research demonstrates that increased fall Delta outflow corresponds to improved habitat for Delta Smelt including increased availability of Pseudodiaptomus forbesi the principal prey for sub-adult Delta Smelt (Hassrick et al. 2023; Kimmerer et al. 2018) and reduced temperatures in October (Bashevkin and Mahardja 2022).The DEIS fails to apply the peer-reviewed Delta Smelt life cycle by Rose et al. (2013ab) which uses an individual based-mechanistic approach to analyze Delta Smelt population response to management alternatives. However another recent study (Compass 2024) used the Rose et al. (2013a.b) model and showed positive population growth for Delta Smelt when fall outflow was set to month-specific locations < 80Km following Wet and Above Normal year-types. The Compass (2024) results also indicated that Delta Smelt populations would have declined more rapidly than observed over the 1994-2014 period if fall outflow had been set to month-specific locations of > 80 km in those same year-types (Compass 2024Table 8 at p. 25). Because research continues to indicate that supplemental fall outflow may have a beneficial effect on Delta Smelt Reclamation should consider the sensitivity of the Delta Smelt population to differences in fall outflow among the modeled operational alternatives.The Delta Smelt LCM analysis clearly demonstrates that Alternative 3 substantially outperforms all other alternatives with respect to estimated future population growth rates (DEIS Figure 1; Attachment F.4 Table F.4-5 and Figure F.4-9). In fact Alternative 3 is the only alternative that produces positive Delta Smelt population growth rates on average. Negative average population growth rates	Please refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for an analysis of impacts on Delta smelt associated with the alternatives. Reclamation used the Delta Smelt LCM as described in Smith et al. (2021). Reasoning as to why there is a lack of "Fall X2" component in the Delta Smelt LCM can be found in the article. The individual-based model used in Compass (2024) was not available to Reclamation at the time of model selection in 2020–2021. Please refer to Standard Response 11, Fall X2, for additional information. Refer to Standard Response 3, Baseline and No Action, for additional information regarding the No Action Alternative and sufficiency of the basis of comparison. Support for Alternative 3 is noted. Compass Resource Management. 2024. CSAMP Delta Smelt Structured Decision Making, Round 1 Evaluation Report. Prepared for Collaborative Science and Adaptive Management Program by Brian Crawford and Sally Rudd, Compass Resource Management, in collaboration with CSAMP Delta Smelt Technical Working Group. June 6. Draft Version 3.0. Smith, W. E., L. Polansky, and M. L. Nobriga. 2021. Disentangling Risks to an Endangered Fish: Using a State-Space Life Cycle Model to Separate Natural Mortality from Anthropogenic Losses. Canadian Journal of Fisheries and Aquatic Sciences 78: 1008–1029 (2021) dx.doi.org/10.1139/cjfas-2020-0251.

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	shown in all other alternatives are consistent with inviable populations and extinction (McElhaney et al. 2002). Alternative 2 variants produce negative growth rates that are on average nearly indistinguishable from or worse than the NAA and empirical growth rates that have led to the near disappearance of this once abundant endemic fish species. Furthermore all Alternative 2 variants perform worse than NAA or empirical results in Wet and Above Normal Years. The DEIS provides some insight into this result explaining :"Meanwhile NAA and the PA components may have produced lower [population growth rate] than the empirical data during wetter years because of the lower June-August Delta Outflow values and more negative OMR values for some months. NAA and the PA components did not produce higher despite OMR restrictions that should reduce entrainment of Delta smelt. This may be due to the apparent trade-off between OMR flow and summer Delta outflow that somehow occurred between PA components and the empirical data." (DEIS Appendix F Attachment F.4 Delta Smelt Life Cycle Model with Entrainment at F.4-21). This demonstrates that Alternative 2 is not consistent with requirements of the ESA (especially given that Alternative 3 and non-alternative scenarios ("EXP1" and "EXP3") demonstrate that operations that result in positive population growth are possible). Alternative 1 performs far worse than the NAA (Figure 1 below; see also DEIS Attachment F.4 at Table F.4-5). [See original comment for Figure 1: Graphic showing mean Delta Smelt population growth rates projected under each project alternative across years as compared to empirical estimates of Delta Smelt population growth from 1995-2015. Population growth rates of 1.0 represent a stable population (no growth or decline on average); growth rates less than 1.0 indicate long-term decline in population abundance over time. Persistent negative growth rates eventually lead to population extirpation.] Other DEIS analyses are consistent with the finding that the Proposed Action will not improve conditions for Delta Smelt relative to the unacceptable NAA and that conditions under the Proposed Action may be worse than the NAA at times. For example another Delta Smelt population model shows that the No Action Alternative is worse than the baseline that Alternative 2	

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	variants are roughly equivalent to or worse than the NAA and that Alternative 3 vastly outperforms the other alternatives (Appendix F Attachment F.1 Tables F.1-5 and F.1-6). Similarly, the DEIS analysis of summer and fall Delta outflow and habitat concludes:" HSI [habitat suitability index] values across the Alternative 2 components were similar to those of the NAA at all levels of spatial organization (Delta summer and fall habitat subregions together individual subregions; Table K.1-7 Table K.1-8). For the Delta and summer and fall habitat subregions percent differences were slightly negative; for each subregion percent changes generally ranged between -3 to 2 except in the Confluence during the critical water year and in some of the Suisun Bay subregions during the wet below normal and critical water year types (Table K.1-7 Table K.1-8)." (DEIS Appendix K Attachment K.1at p. K.1-42). Reclamation should acknowledge and emphasize the clear implications of its Delta Smelt Life Cycle Model analysis. This species will go extinct under the No Action Alternative and may go extinct more rapidly under the Proposed Action. Meanwhile alternative operational scenarios exist that could potentially prevent extinction and enable recovery.	
86-24	3. Longfin Smelt. As with other listed fish species in San Francisco Bay Delta and its watershed operations that do not improve conditions relative to the status quo for this estuary's Longfin Smelt population are inconsistent with the requirements of the ESA. The USFWS recently observed that Bay-Delta Longfin Smelt DPS "...has plausibly been declining for over 50 years and that decline is presently at circa 34 orders of magnitude below initial observations." (USFWS 2024b at p. 36). In its final listing decision USFWS found that despite numerous efforts regarding conservation and regulation of the San Francisco Bay estuary and its resources including the 2019 Biological Opinions 2020 CESA ITP and existing water quality requirements "the current condition of the estuary and continued threats facing the estuary and Bay-Delta longfin smelt such as reduced freshwater inflow severe declines in population size and disruptions to the DPS's food resources have not been ameliorated"	Please refer to Standard Response 2, Related Regulatory Processes, for information on the required process to follow to comply with the ESA. The Final EIS will include as an attachment the final USFWS Biological Opinion, which includes the most updated information on the environmental baseline for longfin smelt.

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	(USFWS 2024a; see also Federal Register Vol. 87 No. 194 [Friday October 7 2022] at pp. 60957-60974). Furthermore USFWS's analysis revealed that: "[f]orecasts of population size using vital rates estimated by the model indicate that it is likely that Longfin Smelt population sizes will dip below recoverable levels within a decade if these recent levels of reproduction and survival continue" and "[b]ased on the meta-analysis the mean quasi-extinction value for the population is 33% (25% 41%) over 20 years and rises to 50% (42% 58%) in 30 years (USFWS 2024b at p. 195 and p. 115) (emphasis added).Despite the extremely precarious state of the Longfin Smelt population the proposed combined operations of the CVP and SWP analyzed in the DEIS would not only fail to improve conditions for the Bay-Delta Longfin Smelt population often they would make those conditions worse.	
86-25	Delta Outflow model - The DEIS employs flawed modeling to estimate the impacts of the Proposed Action and fails to disclose the harm to Longfin Smelt revealed by its modeled results. The DEIS employs a novel statistical approach which has not been peer-reviewed to combine multiple models of Longfin Smelt population dynamics into a single predictive model. [Footnote 17: These models are not likely to produce credible estimates of absolute abundance or abundance index values for this population. First the modeling relies on incorrect assumptions about the nature of the Longfin Smelt-flow abundance relationship. Specifically the models incorporate different Longfin Smelt flow-abundance relationships during multi-year periods that it identifies as "ecological regimes" citing Nobriga and Rosenfield (2016) as the source of these different categories. In fact Nobriga and Rosenfield provide no support for the "ecological regimes" used in the DEIS' modeling approach and neither does Thomson et al. (2010 at 1439-140 and Figure 6 at 1442).] This model indicates that the Longfin Smelt population is likely to decline versus the unacceptable NAA in all years for Alternative 1 and almost all years for Alternative 4 (DEIS Appendix AB-J Winter and Spring Pulses and Delta Outflow Attachment J.1 Table J.1-3). Three of the four Alternative 2 variants are estimated to result	Please refer to Chapter 12, Fish and Aquatic Resources, and Appendix O, Fish and Aquatic Resources Technical Appendix, for analysis of impacts on longfin smelt associated with the alternatives. Reclamation provided the longfin smelt-outflow analysis (*Attachment J.1, Longfin Smelt Outflow)* to the DSP peer-review panel that provided input about the statistical methods and results. The approach to the analysis was deemed *"statistically sounds and attempts to quantify uncertainty using several techniques. … The overall fit is encouraging as a description of historical trends."* Also please refer to Standard Response 5, Adequacy of Analysis and Mitigation. The Longfin Smelt Outflow line of evidence is documented in the Draft EIS to show that longfin smelt abundance is similar between Alternative 2 phases and the No Action Alternative and varies slightly (±5%)

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	in Longfin Smelt abundance less than or equal to the NAA in the vast majority of years. Only Alternative 3 is expected to produce substantial increases in the Longfin Smelt population overall and it accomplishes this in every water year type. Figure 2 below illustrates the mean difference between each alternative and the NAA by water year type.[Note: Second the modeling employs non-traditional approaches. For example the DEIS generates multiple models whose "distributions were combined as a weighted average across models" in a process called "stacking". The DEIS explains (at Appendix AB-J Attachment J.1 at J.1-2):"Compared to more traditional model averaging approaches stacking differs in terms of how model weights are assigned. Instead of calculating model weights based on the relative predictive ability for each individual model where the best model for prediction would be given the highest weightthe model weights estimated through stacking minimize the LOO mean squared error of the resulting averaged posterior predictive distribution across models. In other words stacking was used to estimate the optimal linear combination of model weights for averaging predictive distributions across the model set (Yao et al. 2018). Hence the model with the largest stacking weight does not necessarily have the highest predictive score compared to other models in the set." (emphasis added). Thus the DEIS's predictions of Longfin Smelt response to different operational alternatives is based on a weighted average of multiple models where the weights applied do not correspond to the predictive ability of the relevant model. Furthermore the final "stacked" model includes models where the flow variable is measured from December-May Delta outflow (as per CDFW 2010; see also Nobriga and Rosenfield 2016) and other models where outflow is measured from March-May. This means that flow during the months of March April and May are differentially represented in the final model the DEIS provides no explanation of or justification for this emphasis on March-May flows. Third the models rely on randomization procedures used to generate "probability distributions" for the modeled results. (DEIS Appendix 6B at 6B-395 thru 6B-403). These randomizations confound variability frommultiple sources including those that have nothing to do with the	depending on water year type and specific phase (Appendix O, *Section O.5.13.1, Bay-Delta,* p. O-840). Abundance between Alternative 3 and the No Action Alternative is estimated to be higher regardless of water year type (*Appendix O, Section O.6.13.1, Bay-Delta,* p. O-1185). Refer to Standard Response 3, *Baseline and No Action,* for additional information regarding the No Action Alternative and sufficiency of the basis of comparison. The No Action Alternative was evaluated in this EIS and as the Proposed Action in the 2020 Long-term Operation of the CVP and SWP environmental compliance. Support for Alternative 3 is noted. The No Action Alternative is the appropriate comparison for alternatives, and comparison between alternatives is not described.

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	effect of project alternatives. These "probability distributions" for model predictions are then inappropriately compared to the differences in means for several water year types across different alternatives; these water year-types include such as variation in abundance over the entire Longfin Smelt data series. The resulting analysis is used to imply that differences between alternatives are small compared to the variability in population estimates this is highly misleading. These overwrought statistical machinations obscure very simple facts (1) Delta outflow is the only known variable affecting changes in Longfin Smelt abundance from year to year that is affected by combined CVP/SWP operations (USFWS 2024b and sources cited therein) and (2) the effect of Delta outflow on the Longfin Smelt population is most likely due to its relationship with recruitment of young-of-year fish a relationship that has not changed in five decades of sampling data (Nobriga and Rosenfield 2016).][See original comment for Figure 2: The mean percentage difference between estimated annual Longfin Smelt Fall Midwater Trawl abundance indices and the NAA in each water-year type. Positive values indicate that an alternative is expected to produce more Longfin Smelt in a given water year type than the NAA on average. Source data from DEIS Appendix AB-J attachment J.1 provided by the U.S. Bureau of Reclamation.] Moreover a proper comparison of alternatives (i.e. comparing the differences in predicted annual Longfin Smelt abundance indices among alternatives) shows that the relative performance of different alternatives is very consistent. The fact that the Longfin Smelt population displays high variance (and that the 3-4 order of magnitude decline over time adds to this variance) does not mean that there is any uncertainty regarding the relative performance of Alternative 3 as compared to NAA. Notwithstanding the DEIS's statistically inappropriate efforts to minimize the different effects of the alternatives by comparing them to the variance within alternatives (e.g. as in DEIS Appendix AB-J attachment J Figure J.1-2) Alternative 3 is superior to the NAA in every year modeled (Figure 3). The other alternatives are barely different from the NAA during drier years (Figure 2) and when the estimated population is low (Figure 3) and their	

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	performance decreases relative to NAA as conditions become wetter and/or as the estimated annual population index increases. Under the NAA and all alternatives other than Alternative 3 the Bay-Delta Longfin Smelt population is likely to continue to decline to extirpation in the near future.[See original comment for Figure 3: The percentage difference between the estimated annual Longfin Smelt Fall Midwater Trawl abundance index and the NAA in each year as a function of the modeled log (FMWT index) for the NAA (i.e. each year is represented by points for each alternative arranged vertically). Positive values indicate that an alternative is expected to produce more Longfin Smelt in a given year than the NAA. The positive effect of Alternative 3 operations increase in absolute and relative terms as the estimated FMWT abundance index increases. Performance of other alternatives tend to decrease relative to the NAA as the estimated FMWT abundance index increases.]Furthermore these results likely underestimate the true impact on Longfin Smelt of combined proposed project operations particularly for alternatives that allow for TUCOs because the modeling assumes that requirements of the Bay-Delta Water Quality Control Plan and D-1641 and federal biological opinions will be enforced in all years. This has not been the case historically. (See e.g. Reis et al. 2019).Reclamation should disclose that the NAA is likely to lead to extinction of the Bay-Delta Longfin Smelt population in the near future. The results of the Longfin Smelt-Delta Outflow analysis must be depicted in a way that informs readers of the likely catastrophic outcomes of the Proposed Action and Alternatives 1 and 4 which all perform similarly to the NAA. Reclamation must also disclose the sizeable potential benefits of Alternative 3 operations relative to the NAA. These disclosures should be made in transparent text and visually through comparison of the differences in predicted Longfin Smelt abundance in each year that arise from differences among alternatives. Natural variance in projected Longfin Smelt abundance that has nothing to do with differences among alternatives (e.g. variance across years within a water-year type) is irrelevant to evaluation of the Proposed Action.	

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86-26	Entrainment Mortality model juvenile - The DEIS's projected response of Longfin Smelt abundance to changes in Delta Outflow does not account for the massive increases in entrainment mortality of Longfin Smelt juveniles predicted to result from implementation of the Proposed Action (Table 3). Again Alternative 3 is the environmentally superior alternative in all water year types. Salvage under the Proposed Action is expected to increase substantially in the vast majority of years under every variant of Alternative 2. In fact salvage (and related mortality) increase so much in wetter years that the Proposed Action would invert the established pattern in which Longfin Smelt were at greatest risk of entrainment in Dry and Critical years (Grimaldo et al. 2009; Rosenfield 2010); rather entrainment-related mortality is now predicted to be greatest in wetter years. This continues a shift from the historical condition (under the 2008/2009 biological opinions) that began with huge increases in expected Longfin Smelt juvenile entrainment (up to 576% higher salvage in Wet years) under the 2019 biological opinion and 2020 ITP (see for example CDWR 2019 Table 4.4-13 and Figure 4.4-56 at 4-185. The anticipated increases in entrainment-related mortality of Longfin Smelt may change entrainment from a potential episodic impact on the population (Rosenfield 2010) to a chronic threat to Longfin Smelt population viability.[See original comment for Table 3: Predicted salvage of juvenile Longfin Smelt under the NAA and operational alternatives considered in the DEIS by water year type. Copied from Appendix AB-I attachment I.4.] Reclamation should disclose the potential harm to Longfin Smelt viability caused by the high rates of Longfin Smelt mortality from entrainment that are expected under the NAA relative to historical conditions. Furthermore Reclamation should disclose that mortality due to this mechanism is likely to increase several-fold under the Proposed Action.	The potential effect of operations on longfin smelt abundance was investigated through development of a statistical modeling approach relating the Longfin Smelt Fall Midwater Trawl (FMWT) abundance index to (1) Delta outflow; (2) the FMWT abundance index two years earlier (as a representation of parental stock size); and (3) ecological regime (i.e., 1967–1987, pre-*Potamocorbula amurensis* invasion; 1988–2002, post-P. *amurensis* invasion; and 2003–2022, Pelagic Organism Decline). The longfin smelt salvage OMR relationship is a model of salvage at South Delta facilities as a function of flow based on historical salvage data. Both these lines of evidence are included within the aquatic resource impact analysis and provided within the Draft EIS Biological Assessment Appendix. A jeopardy analysis is within the USFWS purview and will be provided in the resulting biological opinion. Please refer to Standard Response 2, Related Regulatory Processes.
86-27	Entrainment Mortality model larvae - The DEIS fails to adequately analyze entrainment of larval Longfin Smelt or to disclose the impact of entrainment-related larval mortality on the Longfin Smelt population as a whole. The state of California acknowledges that larval Longfin Smelt are	Refer to Standard Response 3, *Baseline and No Action,* for additional information regarding the No Action Alternative and sufficiency of the basis of comparison.

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	more vulnerable to entrainment- related mortality than juveniles (CDWR 2019 at 6-96). Yet it fails to adequately address the major increases in larval entrainment expected under the NAA with respect to the previous baseline (2008/2009 biological opinions) or under the Proposed Action. Instead the DEIS relies on findings of Kimmerer and Gross (2022) to assert that larval entrainment will average 1.5% of the population (DEIS BA Chapter 10 at p. 10-51). No rationale is provided which would explain why chronic loss of 1.5% of this one life stage via this one mechanism does not represent a significant impact to the population. Kimmerer and Gross (2022) underestimate the likely magnitude of larval entrainment in several ways. First that paper studied larval Longfin Smelt exposure to entrainment based on data from 2009-2020. But the rules that governed Delta flows exports and entrainment risk during that period (the 2008/2009 operational baseline) have now changed in ways that are expected to increase entrainment- related mortality of larval Longfin Smelt (CDWR 2019 Table 4.4-8a at 4-173 shows estimated increases in entrainment of particles that serve as proxies for larval fish). Second they assumed that larval Longfin Smelt were only susceptible to entrainment for approximately 7-13 days post hatching but recent data reveal that many larval Longfin Smelt remain in low salinity habitats which are often within the area affected by water exports for 100-150 days (Lewis et al. 2019 at p. 9 and at pp. 48-83 of the PDF). Third Kimmerer and Gross (2002) estimated direct entrainment only during January-March but the DEIS and BA show that Longfin Smelt larvae are present in March-June (Biological Assessment Appendix AB Chapter 10 Figure 10-3) although the BA's estimate of larval Longfin Smelt relative abundance after March is understated. Larvae remain in the upper estuary through at least May (SWRCB 2010 Table 2 atp. 45; CDFW 2010) and likely into June (CDFW 2010; Rosenfield 2010; Lewis et al. 2019 at p. 9 of the PDF). Thus, to compare estimated changes in Longfin Smelt larval entrainment mortality in the DEIS one must look at particle entrainment estimates for March-June. In general we disagree that Longfin Smelt larval entrainment risk is completely captured by studying neutrally buoyant particles as Longfin	Multiple lines of evidence including literature, observations, and models are used to evaluate longfin smelt entrainment risk and identified net negative OMR flows increase entrainment risk. No life cycle model exists for putting different sources of mortality of different life stages into context for the population. Please refer to Attachment I.3*, Delta Export Zone of Influence Analysis*, for key takeaways on inflow and OMR Bins, including corresponding Sacramento and San Joaquin Rivers flow ranges and mean OMR and Exports flow ranges. Support for Alternative 3 is noted.

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	Smelt larvae do exhibit behavior with respect to depth (Kimmerer personal communication). Nevertheless the only means of estimating the distribution of Longfin Smelt larvae with respect to the alternatives are modeling studies of neutrally buoyant particles injected where Longfin Smelt are believed to spawn (Sacramento River (Appendix AB-I Attachment I.8 Particle Tracking Fate Modeling of Larval Smelt Entrainment Table I.8-42) West Delta Table (I.8-45) and Suisun Bay (Table I.8-46)). These tables consistently show that the number of particles entrained (or for fish killed) in the export facilities decreases substantially (up to 100%) in every inflow-combination bin under Alternative 3; no other alternative shows this magnitude or consistency of reduced entrainment. Alternative 1 typically showed the greatest increases in particle entrainment [Footnote 18: DEIS's reliance on qualitative bins of Sacramento*San Joaquin inflow is generally uninformative as there is no indication how often these bins occur over the modelled time period or how their frequency is expected to differ across alternatives (which modify flow levels in the two rivers). The DEIS should categorize years by a measure of unimpaired flow which will allow for apples-to-apples comparisons of outcomes based on the frequency of year types that is consistent among alternatives]. Entrainment under the Alternative 2 variant that includes all VAs is expected to increase in more year-type bins than it decreases and the increases are generally of higher magnitude than the decreases. These increases are on top of massive increases in particle entrainment predicted to occur under the NAA versus the previous baseline (2008/2009 Biological opinions). According to modeling by DWR particle entrainment rates increased by over 200-300% in some water year types during April and May under the state's proposed operations in 2019 which is today's baseline as compared to the previous baseline (CDWR 2019 Table 4.4-8a at p. 4-173).Reclamation should disclose the potential effect of larval entrainment under the NAA (which is not adequately represented by Kimmerer and Gross (2022)). It must also disclose how predicted increases in larval entrainment under some hydrological conditions are expected to impact components of	

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	viability (i.e. abundance and productivity) for the Bay- Delta's endangered Longfin Smelt population.	
86-28	4. White Sturgeon. The California Fish and Game Commission recently declared California White Sturgeon to be a candidate for listing under the state Endangered Species Act (CESA). This means that this population receives full protection under CESA until CDFW completes a status review. White Sturgeon harvest is now prohibited. A parallel federal petition is pending. It is thus appropriate for the DEIS to analyze potential impacts of proposed combined project operations on White Sturgeon and to minimize and fully mitigate those impacts that are expected to result from those operations. The only known spawning population of White Sturgeon in California is found in the San Francisco Bay watershed. Most spawning occurs in the Sacramento River although NMFS (17388 Federal Register/Vol. 70 No. 65 citing Beamesderfer et al. 2004) CDFW (2015) and Heublein et al. (2017) indicate that White Sturgeon may spawn in the Feather River. Spawning has also been detected in recent years in the San Joaquin River mainstem though reproductive success has not been confirmed (Jackson et al. 2016). The California White Sturgeon population is declining and imperiled. CDFW states "Annual recruitment of white sturgeon in California appears to have decreased since the early 1980s." (2015 at p. 224). Similarly Blackburn et al. observed that "Few age-0 and age-1 White Sturgeon have been sampled since 1998 and only two strong year-classes (2006 and 2011) have been documented in the last 19 years [through 2016]"; they concluded "[c]ontinued poor recruitment has the potential to put the population at risk." (2019 at pp. 897-898). In 2022 and 2023 large numbers of White Sturgeon were killed by a harmful algal bloom in San Francisco Bay which further degraded the viability of this imperiled fish (CDFW 2023b).One of the main threats to California White Sturgeon is the diversion of fresh water from major Central Valley rivers where they spawn incubate and rear as larvae (or did so historically) and diversion from the Delta which is habitat for juveniles sub-adults and adults. Above certain flow thresholds recruitment of juvenile White	Reclamation manages the CVP, and DWR manages the SWP. Because Reclamation is a federal agency, the Proposed Action is subject to NEPA review. DWR, as a state entity, is conducting separate CEQA review for the decisions that must be made regarding operation of the SWP. On June 16, 2023, DWR issued a Notice of Preparation (California Department of Water Resources 2023) notifying interested parties that the State would commence preparation of an environmental impact report (EIR) for the LTO of the SWP pursuant to CEQA. In the Notice of Preparation, DWR states that it intends to seek a new Incidental Take Permit from the California Department of Fish and Wildlife, which would provide CESA authorization for SWP operations regardless of whether there are changes to federal law during the term of the Incidental Take Permit. DWR subsequently released its Draft EIR for public review from May 29, 2024. Although Reclamation and DWR strive for a coordinated operation of the CVP and SWP, Reclamation and the CVP are not subject to requirements under CESA or CEQA. Reclamation and DWR have elected to meet their respective environmental review requirements independent of one another. The information provided is generally consistent with the affected environment for white sturgeon described in *Appendix O, Fish and Aquatic Resources Technical Appendix*. The EIS used reliable data per NEPA to assess impacts to green and white sturgeon. Please see

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	Sturgeon is positively correlated with high river flows and Delta outflow during spring and early summer months (Israel et al. 2009; CDFW 2015 2023b; SWRCB 2017; see also AFRP 2001; Moyle 2002; Willis et al. 2022). Below the flow threshold recruitment of White Sturgeon is very low or non-existent. As UC Davis Professor Dr. Andrew Rypel recently explained: "Most of our native fishes rely on those high- flow years for recruitment and white sturgeon are the extreme example of that. They only recruit on the highest of flow years." (https://mavensnotebook.com/2024/07/11/feature-a-bigger-older- fish-gasping-for-more-water-white-sturgeon-slipping-away/). The connection between White Sturgeon reproductive success and high river flows is also known from other watersheds (Parsley and Beckman 1994). Successful cohort formation for California White Sturgeon which corresponds to years of high spring-summer river flows into and out of the Delta (Moyle 2002; Fish 2010; CDFW 2015 citing Kohlhorst et al. 1991 and Schaffter and Kohlhorst 1999; SWRCB 2017). Chronically low river flows and reductions in freshwater inflow to San Francisco Bay (also referred to as Delta outflow) resulting from water diversion and storage operations have been implicated in the decline of California White Sturgeon (CDFW 2015; Jackson et al. 2016; SWRCB 2017; Baykeeper et al. 2023).The State Water Board analyzed the relationship between recruitment of juvenile White Sturgeon and average freshwater Delta outflow in March-July (SWRCB 2017). That analysis found that recruitment of juvenile White Sturgeon was much less likely to occur when March-July average flows were below certain thresholds (see Figures 3.6-2 and 3.6-3 of SWRCB 2017 at pp. 3-65) and that monthly average Delta outflows > 37000 cfs during this period were necessary to protect the public trust benefits of California White Sturgeon. From 1980-1999 average March- July Delta outflows >37000 cfs occurred 30 percent of the time (6 out of 20 years). Since 1999 flows of this magnitude have occurred only 17.4 percent of the time (4 out of 23 years). Reis et al. (2019 Table 5 at 12) show that the frequency of wet and above average hydrology (as they measured it) experienced by White Sturgeon in the Bay's watershed is reduced by water diversions and	Standard Response 5, Adequacy of Analysis and Mitigation, for additional information. Although Reclamation is not subject to CESA, the status of white sturgeon as a candidate species under CESA was updated around the publishing of the Draft EIS and has been updated in the affected environment in Section O.1.3.2. An updated CDFW outflow year class index analysis was completed in Attachment J.2. This analysis shows mixed predictions of year class strength depending on which phase of Alternative 2 is actionable and water year type. The summary of project impacts for green sturgeon, southern DPS, are located in Section O.5.11 for Alternative 2, with the summary of impacts in Table O-282. The summary of project impacts on white sturgeon are located in Section O.5.15 for Alternative 2 with the Summary of Impacts in Table O-282. Support for Alternative 3 is noted. California Department of Water Resources. 2023. Notice of Preparation of an Environmental Impact Report for Long-Term Operations of the State Water Project. June 16.

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	storage including operations of the CVP and SWP. Furthermore Baykeeper et al. (2023) showed that recruitment of YOY White Sturgeon was very low or zero when Sacramento River flows ("SAC" + "YOLO" variables in Dayflow) average < 30000 cfs between April and July. The DEIS's analysis of White Sturgeon response to alternative operations of the CVP Appendix AB-J Winter and Spring Pulses and Delta Outflow Attachment J.2 is flawed. Specifically, the DEIS's method for calculating Delta Outflow impacts of the Proposed Action on White Sturgeon (DEIS Appendix 6B at 6B-408) assumes that the relationship between production of White Sturgeon juveniles and Delta outflow is log-linear across the range of inflows. However because it is highly unlikely that White Sturgeon reproduce successfully in drier year types projected effects of alternative operations in those year types are erroneous and reveal flaws in the analysis that would tend to understate the true impact of the Proposed Action. Because the DEIS applies a log-linear regression across the range of flows it estimates that water project operations will affect production of juvenile White Sturgeon across the range of flows. Ignoring the non-linear nature of the flow-juvenile production relationship also means that the DEIS's regression relationship is lower magnitude ("flatter") than the actual relationship thus it likely underestimates the effect of high flows on juvenile production. As a result the DEIS's analysis likely underestimates the Proposed Action's negative effects on White Sturgeon production in wetter years relative to the baseline. The same problem is likely to apply to the DEIS's analysis of Green Sturgeon (DEIS Appendix AB Chapter 8).Despite these flaws in estimation of the Proposed Action's effects on the Bay's imperiled White Sturgeon population it is likely that the analysis reflects the relative impact of proposed operations with respect to the No Action Alternative. Except for Alternative 3 all project alternatives (and Proposed Action variants) perform worse than the NAA in Wet years when the bulk of White Sturgeon juvenile production is expected to occur (Table J.2-5). A relatively small amount of White Sturgeon recruitment is expected in some "Above Normal" water years. Although the variant of the Proposed Action that includes all VAs is expected to perform slightly	

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	better than the NAA under these conditions the overall expected change under this variant is still negative with respect to the NAA when the effects in Wet Years and Above Normal years are considered together (This is especially true because "Wet" years are expected to occur more frequently than "Above Normal" years). Again no recruitment of Age 0 juvenile White Sturgeon is expected in years that are drier than "Above Normal" but even if it did Table J.2-5 demonstrates that all alternatives except for Alternative 3 are worse for White Sturgeon than the NAA on average. [Footnote 19: The same general pattern applies to the DEIS's analysis of Green Sturgeon Alternative 2 variants perform worse than the NAA (Appendix AB Chapter 8 Green Sturgeon Table 8-10). Alternatives 1 3 and 4 were not analyzed in the Green Sturgeon appendix.] By contrast Alternative 3 is expected to produce significant proportional increases in White Sturgeon production as compared to the NAA. Because of the population modeling errors described above the DEIS probably underestimates the differences (positive and negative) between the alternatives and the NAA. Reclamation should disclose the precarious and deteriorating conservation status of White Sturgeon under the NAA and the likely negative effects of the Proposed Action on both White Sturgeon and the threatened Green Sturgeon DPS. Furthermore Reclamation should revise their methodology to account for the non-linear nature of the flow- recruitment relationship for White Sturgeon and Green Sturgeon where the effect of flow changes materializes only in the wetter end of the hydrological spectrum.	
86-29	B. The Proposed Action is Fundamentally Flawed Because it includes The Proposed Voluntary Agreements The Proposed Action is deficient in relying on the proposed Voluntary Agreements ("VAs") because in addition to the Proposed Action's adverse impacts to listed species discussed in the previous section, the VAs are not likely to occur the purported magnitude and benefits of VA- associated flows are incorrectly described and even if implemented the VAs would be likely to be short-term in duration. Because of these flaws the VAs should not be included as a component of the alternatives in the DEIS.1. The Voluntary Agreements	Please refer to Standard Response 10, Voluntary Agreements, regarding how Alternative 2 includes voluntary agreements in phases to account for potential uncertainty associated with the different pieces and timelines of the voluntary agreements.

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	are not likely to occur. The Proposed Action in the DEIS assumes a set of fully developed and executed VAs that have been analyzed and accepted by the State Water Board. These assumptions are highly questionable. The VA proposal has been in development for more than a decade and proponents have still not produced a complete proposal as of September 2024. See Voluntary Agreement Timeline Attachment 5. Given this track record there is no reason to assume that the VA effort will ever produce a complete package.Even if a complete package is eventually produced it could be years in the future. Missing elements include but are not limited to a final funding agreement enforcement agreements a detailed proposal for tribal engagement in decision-making a detailed operations plan for the Delta SMART biological goals and objectives and technical details such as "which reservoirs may be reoperated which fields will be fallowed when reservoirs can refill and when groundwater substitution will occur have not been fully specified." See SWRCB 2023 at p. G3a- 1. Further it is not certain that the State Water Board will approve the VA proposal. The Board's most recent description of its plan for updating Bay-Delta water quality standards (SWRCB 2023) describes "Proposed Plan Amendments" that do not include the VAs the VAs are described as an alternative to the Proposed Plan Amendments. The proposed Bay-Delta VA is more complicated than any previous effort to manage a discretionary block of environmental water anywhere in the nation. The attached Building Blocks white paper documents significant challenges that have faced 18 other efforts to do so most of which are located in California [Footnote 20: Building Blocks Tools and Lessons for Designing a Block of Water for the Environment. Barry Nelson Defenders of Wildlife. June 2022.] Compared to all of the other similar projects across the nation the VA proposal is broader in geographic scope broader in terms of the species and beneficial uses it would address and broader in terms of the complexity of the water management systems involved. Yet all previous environmental block of water efforts in California despite the fact that they were far less complex than the Bay-Delta VA proposal have encountered major implementation challenges. In some cases those challenges have	

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	dramatically reduced or even eliminated entirely anticipated environmental benefits. The problems faced by previous environmental blocks of water have included a failure to purchase anticipated environmental water accounting issues related to the program's environmental baseline inadequate funding unanticipated impacts caused by changes in project operations and more. All of these problems and more - apply to the Bay-Delta VA proposal clearly demonstrating that the anticipated VA environmental benefits are not likely to occur.	
86-30	Beyond the challenges identified in the Building Blocks report, the VA proposal also contains numerous additional flaws that reduce the likelihood of anticipated environmental flows and benefits: The VA accounting proposal clearly allows future increases in demand or the development of new storage or conveyance facilities to reduce environmental water over time. As currently proposed the VAs would provide no protection for current environmental flows that are greater than current regulatory minimums. Future water diversions could capture these unregulated flows effectively reducing environmental flows and harming listed species. (See Alternative 6a in SWRCB Draft Staff Report pp. 7.2-15 and 7.2-16). Given current proposals for large scale new diversions related to the proposed Delta Conveyance Project the proposed Sites Reservoir and other proposed new storage facilities it is highly likely that these additional diversions which are allowed under the VAs will significantly reduce environmental flows during the term of the final Biological Opinions. Given the current focus on wet season diversions to rechange groundwater basins related to the implementation of the Sustainable Groundwater Management Act, the above flaw in the VA accounting proposal which does not protect existing environmental flows could allow anticipated environmental water to be reduced significantly during the term of the final Biological Opinions. The flows promised in the American River VA could be provided in as few as 3 of the 8 years of the VA's initial term. In no case would VA environmental flows be provided in more than 6 of the 8 years. (See Global Agreement to the Healthy Rivers	Please also refer to Standard Response 10, Voluntary Agreements, for additional information on voluntary agreements and processes.

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	and Landscapes Program in the Bay-Delta March 29 2024 Draft Appendix 1 Sec. 1.1.1). Alternative 2a includes the use of Temporary Urgency Change Petitions (TUCPs) and Temporary Urgency Change Orders during future droughts. See p. E-67. Repeated approval of these TUCPs has allowed the State Water Board CESA and related ESA flow requirements to be waived in 6 of the past 10 years. This is particularly important given the impacts on Delta Smelt winter run and spring run Chinook salmon white sturgeon and other listed species as well as fall run Chinook salmon during droughts. TUCPs could reduce environmental flows to a level below that assumed in the DEIS. As a result the total environmental flows in the VA package and the DEIS's Proposed Action including existing regulatory flow requirements are unlikely to occur. The VA proposal has no adequate enforcement mechanism in the likely event that this effort fails to produce anticipated environmental water. For example the VAs do not require annual much less real-time or seasonal accounting of flows so there is no way to ensure that the pledged water arrives as promised or when it is needed by imperiled fish and wildlife. The VA proposal relies heavily on long-term modelling not real-time real-world conditions to account for environmental water. Given the experiences with the Environmental Water Account a modelling approach is inadequate to ensure that environmental water is provided as anticipated. The current VA proposal would not begin a comprehensive evaluation of the implementation of the VA program until year 6. As a result even if the VAs were to fail comprehensively that failure might not be adequately detected reported summarized and analyzed until year 6 or later. For all of these reasons even if the State Water Board were to approve the VAs the amount of environmental water that is described in the VA proposal is not likely to occur. Additionally the fundamental problems above are not adequately analyzed in the DEIS.Even if the VA proposal were eventually to be finalized approved and implemented the uncertainties regarding the final VA proposal and the implementation challenges that have faced all other similar "environmental block of water" efforts clearly demonstrate that the final	

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	"on the ground" benefits and/or impacts of the VAs cannot be adequately evaluated at this time.	
86-31	2. The description in the DEIS of the Voluntary Agreement proposal for Delta flows is misleading. The DEIS includes a table describing the claimed new environmental water to be provided by the CVP and SWP. (See Appendix AB p. 3-68 Table 3-12). That table also summarizes the "Total VA Outflow by All VA Parties." However the State Water Board's analysis indicates that the VAs are likely to result in lower Delta outflows in Wet years than would have occurred under that agency's baseline which incorporates the 2008/2009 Biological Opinions rather than the invalid 2019 BOs. (See SWRCB 2023 Chapter 9 Table 9.5-41). The VAs could decrease environmental flows during critical dry years. This could be the case even if the VA were to provide all of the water it currently promises and as discussed above this is far from certain. Thus the portrayal in the DEIS of potential flow improvements under the VA proposal is misleading.	The Draft EIS, specifically Tables F.2.4-7 through F.2.4-10 of Appendix F, Modeling, Attachment F.2.4, CalSim 3—Water Supply, presents the most current information and best available representation of Healthy Rivers and Landscapes operations related to the CVP and SWP export reductions, Shasta and Folsom reservoir reoperations, and Delta water purchase program. Please also refer to Standard Response 10, Voluntary Agreements, for additional information on voluntary agreements and processes.
86-32	3. The DEIS appears to incorrectly assume that all anticipated Voluntary Agreement environmental flows would benefit listed species. The DEIS appears to assume that flows provided by VA early implementation will be managed to improve spring outflow to benefit listed species. (See Appendix AB p. 3-67). Yet the VA proposal appears to "count" as a VA flow contribution environmental water that is not diverted by the CVP and SWP Delta pumps as a result of causes that are unrelated to environmental protection such as regular or unscheduled maintenance pump/canal/storage failures or capacity limitations or lack of demand. Even if these unplanned changes in operations provide an environmental benefit (and there is no requirement or guarantee that they will) flows bypassed under these circumstances already represent a significant portion of current Delta outflows (Reis et al. 2019) and therefore may not be additive to the baseline. The assumption implicit in the DEIS that all of the anticipated VA water even if it is all actually provided would be managed to achieve maximum benefits for listed species is not reasonable.	The Draft EIS represents Reclamation's best understanding of proposed system operations and related performance under the proposed alternatives. Spring Delta Outflow is proposed by Reclamation and DWR in the quantities and timing described *in Section E.5.7.3 of Appendix E, Draft Alternatives*. Annual management would be subject to assessment of real-time conditions by Reclamation and DWR, after coordination with the Healthy Rivers and Landscape Systemwide Governance Group and the Water Operations Management Team (WOMT). This coordination, in part, with the responsible state and federal fishery agencies, ensures the Spring Delta Outflow maximizes benefits for listed species. Please also refer to Standard Response 10, Voluntary Agreements, for additional information on voluntary agreements and processes.

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86-33	4. The DEIS does not adequately describe and analyze the VA's current status elements potential benefits or potential impacts. The VAs are as discussed elsewhere in this document incomplete after more than a decade of discussions. Further the VA documents that have been released are deeply flawed and potentially damaging. For example, as discussed above the VA accounting approach could set the stage for large new diversions that would reduce current environmental flows. In addition many current VA proposals are ambiguous or confusing. The DEIS discussion of alternatives including the discussions of Alternatives 2c and 2d (See DEIS Appendix E p. E-67) fails to adequately describe the VAs including the concerns discussed in this document regarding flaws unreliability and potential impacts as well as the incomplete ambiguous and confusing nature of the components of the VAs that have been released to date. Therefore separate from our concern that the VAs are not likely to occur the document fails to adequately describe and analyze the VA package as it exists today.	Please refer to Standard Response 10, Voluntary Agreements, for a discussion of the voluntary agreements as part of the phases of Alternative 2.
86-34	II. The DEIS Fails to Include a Plan for Droughts that Does Not Violate Minimum Water Quality Objectives. The DEIS's treatment of drought management is highly problematic. To begin with the DEIS fails to clarify whether how and under what criteria shortage provisions will be imposed on Sacramento River Settlement (SRS) Contractors as is needed to comply with the CVPIA's rebalancing of project purpose to include environmental protection and restoration. Furthermore the DEIS fails to identify specific actions that Reclamation will commit to mitigate the highly foreseeable and largely avoidable conditions of drought and avoid the reliance on temporary urgency changes that have characterized drought management in the past fifteen years with devastating consequences for protected species. Instead the DEIS offers up the Drought Toolkit. The voluntary largely qualitative nature of the Drought Toolkit and the lack of authorization or funding for its implementation makes it difficult to assume that it is reasonably likely to occur and therefore reliance on the Drought Toolkit in the DEIS is problematic.In contrast to the 2019	Regardless of the alternative selected, Reclamation will operate consistent with applicable law, contracts, and agreements. Alternatives within the Draft EIS include shortages to CVP and SWP contractors and storage within CVP reservoirs. Water quality objectives are set by the State Water Resource Control Board and may be modified by the board. Alternative 2 includes a scenario for increasing the water in storage by reducing water quality in the Delta (TUCP) or releasing water from storage and potentially impacting temperature management. The Shasta Framework on Alternative 2 identified end-of-April storage and projected end-of-September storage, among other criteria to trigger shortages to SRSCs. Please see *Appendix F, Modeling Technical Appendix,* for model assumptions.

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	Biological Opinions which scarcely mentioned droughts and drought operations of the CVP and SWP the DEIS explicitly contemplates drought operations in the analysis of various operations under the alternatives it analyzes. The DEIS frames some of its discussion of drought in the broader context of overall operations and some of its discussion of drought specifically in terms of drought operations.The DEIS proposes under Alternative 2 that future drought operations will differ from previous drought operations through changes in governance. This is most extensively shown in discussion of governance for Shasta Reservoir operations and in discussion of Alternative 2 Sacramento River/Shasta operations. (DEIS Appendix E pp. E-127 and E-67 ff).The DEIS also evaluates prospective changes to Delta operations during droughts by modeling a series of sensitivity analyses of Alternative 2 without "Temporary Urgency Change Petitions" (TUCPs) for Delta operations [Footnote 21: Please note that Temporary Urgency Change Petitions ("TUCPs") once approved and finalized by the State Water Resources Control Board ("State Water Board") become Temporary Urgency Change Orders ("TUCOs"). In these comments TUCPs and TUCOs are referenced and should be considered interchangeable.] . (See first mention of TUCPs in DEIS without even description of the acronym p. 0-24). Yet while there is extensive reporting of model output with and without TUCPs the DEIS does not introduce narrative context of the practice or the issue of TUCPs in the analysis of Alternative 2 leaving the reader to divine or wonder what the importance of the modeling analyses may be. Equally frustrating the DEIS does not describe whether the preferred alternative will or will not rely during droughts on temporary urgency changes to Bay-Delta water quality requirements or what the decision-making process will entail or rely on both as a default and as it happens.The analyses of Shasta operations and TUCPs during droughts are necessarily interrelated. In the last decade the Sacramento River downstream of Shasta/Keswick reservoirs and Delta water quality have been the parts of the CVP and SWP system that most gravely broke during droughts causing disastrous effects on fisheries. On a practical level the Board granted TUCPs for Delta	Where drought actions and the associated consequences are well understood and can be reliably implemented, those actions are incorporated into the Proposed Action. Where drought actions have potential impacts that depend on year-specific circumstances, they remain as part of the toolkit. Extensive modeling analyzes the use of storage to moderate drought conditions and the costs of not delivering that water in a given year only for it to spill at a time of low value to water supply or the environment.

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	operations largely to enable BOR to "conserve" storage in Shasta Reservoir even if that storage did not wind up being actually used for the ostensible purpose of maintaining the coldwater pool [Footnote 22: The DEIS uses the term "preserve storage" rather than "conserve storage].	
86-35	A. Shasta Reservoir Operations.I. Governance. The DEIS's approaches to governance in the Proposed Action are problematic. Alternative 2 proposes "three main coordination forums" for operations of Shasta Reservoir. These include the Shasta Operations Team ("SHOT") "consisting of Agency subdirectors and managers [who] will serve as the management and policy group for decisions related to Shasta Reservoir operations. The team will develop a charter to describe membership and process." (DEIS Appendix E p. E- 128). The SHOT coordinates with the systemwide managers forum the Water Operations Management Team ("WOMT"). Id. Underneath the SHOT is the Sacramento River Temperature and Flow Technical Group ("SRG") a technical team. The SRG consists of representatives from BOR DWR USFWS CDFW NMFS Central Valley Office NMFS Southwest Fisheries Science Center the SWRCB Western Area Power Administration the Yurok Tribe the Hoopa Tribe and the SRS Contractors. (DEIS Appendix E p. E-129). The third "coordination forum" for Shasta operations consists of the "Meet and Confer Group." This group consists of SRS Contractors BOR and NMFS with others by invitation. Its purpose is to meet during dry years "to determine if there is any role for the SRS Contractors in connection with Reclamation's operational decision-making for Shasta Reservoir annual operations in those years. Any mutually agreeable operations resulting from meet and confer discussions must be consistent with the terms of the SRS Contracts and may also be subject to other regulatory approvals." Id. The Meet and Confer Group is established as a result of the "Sacramento River Settlement Contractors Resolution" which is afford its own subsection under that title. (DEIS Appendix E p. E-84). Key elements of the resolution include consistency with the SRS Contracts payment for water deliveries voluntarily foregone and consideration of changes in timing (not volume) of water deliveries. One of	Reclamation appreciates the contrast provided in the governance structure between Alternative 2 and Alternative 3. The Draft EIS includes a range of reasonable alternatives to provide different approaches in managing the long-term operation of the CVP and SWP. Regardless of the alternative selected, Reclamation will operate consistent with law and contracts/agreements.

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	the main problems with the proposed governance framework is the apparent limited decision space in which the "coordination forums" may operate. As suggested by the definition of the Meet and Confer Group any reductions in deliveries to the SRS Contractors beyond those specified in their contracts is limited to voluntary actions and those would likely require payment. See id. [Footnote 23: It is also important to note that Alternative 3 proposes a different governance framework that prioritizes inclusion of Native American Tribes and delegates the ultimate decision-making authority for water operational decisions with the fisheries agencies NMFS and USFWS "if the issue is not resolved in the management team process." (See DEIS Appendix E p. E-169).] It is unreasonable to assume therefore that any necessary actions to protect listed species that have any water supply cost will emerge from this process.	
86-36	2. Shasta Storage Framework and "bins" of different storage conditions. Reclamation must disclose how Alternative 2 will ensure that adequate cold water is stored behind Shasta Dam in the winter and spring to provide suitable incubation conditions for listed salmonids and in the fall to create a reasonable likelihood that coldwater storage will be adequate in the following calendar year. The DEIS proposes for Alternative 2 a "Water Temperature and Storage Framework" for Shasta operations that places water years in different "bins" or classifications of water years. Bins are defined by predicted end-of-April (EOA) Shasta storage. (DEIS Appendix E p. E-72).The DEIS states that:80 percent of years are "Bin 1" water years in which "hydrologic conditions are generally good and water resources are available to meet demands." (DEIS Appendix E p. E-73).11.5 percent of years are "Bin 2" water years in which "hydrologic conditions are more limited than in Bin 1 and adequate water resources are not available to meet all demands." (DEIS Appendix E p. E-76).8.5 percent of years are "Bin 3" water years in which "critically dry conditions exist the system is stressed and water resources are not available to meet all demands." (DEIS Appendix E p. E-79).Within each Bin there are two	Implementation of Alternative 2's Water Temperature and Storage Framework would provide increased drought protection and maximize suitable temperature regimes for the critically endangered species. The adapted management framework responds to hydrologic conditions and identifies actions that can be taken for fishery management and drought protection. The frequency of occurrence depends on hydrology with the actions taken within each Bin identified to address conditions. The frequency is the modeled outcome of the actions given climate adjusted hydrology. See Standard Response 4, Formulation of Alternatives, for a description of the development of Alternative 3. Alternative 3 was developed in coordination with NGOs and did not adopt the Shasta Framework described in Alternative 2.

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	"categories: standard (Bin A) and drought protection (Bin B)." (DEIS Appendix E p. E-72). "The A Bins are years when the expected demand from the reservoir is lower meaning it's likely to result in better drought protection should the following year be dry. The B-bins are intended to increase the priority of storage conservation to address the risk that the ensuing year could be a drought." Id.[See original comment for Table 4: Breakdown of Alternative 2 proposed Shasta Reservoir Bins By Expected End of April and End of September Shasta Storage]The DEIS does not disclose how Reclamation will achieve its Bin 1 frequency target. The assignment of 80 percent of all water years to "Bin 1" without committing to take actions that will actually ensure such a high frequency of such Bin 1 years is a strong demonstration of BOR's ongoing denial of the need to proactively address drought in the first Dry or Critically Dry year. Absent the appropriate precautionary actions such assignment fails to understand and respond to the fact that a second sequential Dry or Critically Dry year places the combined CVP and SWP in crisis. The assignment of 80 percent of years to Bin 1 without accompanying significant changes to allocation policy perpetuates a system of crisis management rather than promoting crisis avoidance. It perpetuates an allocation of excessive (but predictable) risk to fisheries and the aquatic ecosystem to enable imprudent and over the long-term excessive allocations of water. Finally without a set of specific actions that will protect coldwater pool such that Bin 1 conditions are achieved in 80% of years it is not reasonably likely that such conditions will actually occur with the intended frequency. This failure to ensure the frequency of Bin 1 conditions renders speculative the DEIS's analysis of the Proposed Action's effect on river temperatures and reservoir discharge during the spawning incubation and rearing season of listed salmonids. A more precautionary approach is warranted particularly in light of the historical fact that Dry or Critically Dry years frequently come back-to-back or in pairs.It is good that the DEIS assigns EOA and EOS storage numbers to each of the bins and "categories." However the numbers are weighted too heavily to increase water supply and they will not protect listed species. Consider the contrasting approach applying principles that require	

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	achievement of water storage requirements in Shasta Reservoir before allocation of water supplies in Alternative 3. By contrast Alternative 3 requires achievement of water storage requirements in Shasta Reservoir before allocation of water supplies. (DEIS Appendix E p. E- 163).	
86-37	The DEIS's description of Alternative 2 contains inconsistent unexplained and at times conflicting explanations of whether how and when BOR might impose involuntary delivery shortages on SRS Contractors. As noted above the Central Valley Project Improvement Act of 1992 rebalanced the project purposes of the CVP to include environmental protection and restoration. It is unlikely that either endangered species can be protected or the CVP's specific environmental mandates (such as anadromous fish doubling or refuge water supplies) be achieved without changes to the SRS Contracts under drought conditions. It is notable that the DEIS mentions contractual (25 percent) shortages to SRS Contractors only in the context of Bin 3 water years or only 8.5 percent of all years (DEIS Appendix E p. E-80). Aside from the discussion of Governance and specifically the Meet and Confer Group it is unclear whether and if so how BOR would address deliveries to SRS Contractors outside the voluntary framework of this "coordination forum" and its contemplated voluntary reductions payments in lieu of deliveries and so forth. (See DEIS Appendix E p. E-129 as discussed above). Clarification of these criteria would benefit not only species protection efforts but the SRS Contractors themselves in minimizing their supply uncertainties given defined hydrological conditions.	The EIS identifies Bins based on end-of-April storage and end-of-September storage. These Bins have numerical targets that provide clear criteria. *Appendix F, Modeling,* shows how delivery reductions to SRSCs would be implemented.
86-38	The DEIS prominently features discussion of fidelity to the SRS Contracts as discussed above. (DEIS Appendix E p. E-84 E-124). However the DEIS also describes Bin 3B as follows: "During Bin 3B years defined as having an EOA storage below 3.0 MAF and a projected EOS storage less than 2.0 MAF available water supply for diversion under the SRS Contractors is limited to between 75% and 50% of total contract quantities or approximately 1.5 - 1.1 MAF." (DEIS Appendix E p. E-80). Since the SRS Contracts limit deficiencies to 25 percent in defined "critical" years this	Under Alternative 2, Reclamation will coordinate with USFWS to maintain summer deliveries of Level 2 supplies to Sacramento Valley CVPIA refuges to provide essential dry year habitat for giant garter snake, western pond turtle, tricolored blackbirds, and migratory waterfowl in a manner consistent with refuge contracts and agreed on operational priorities. If conditions remain dry through the fall, Reclamation and USFWS will coordinate on how

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	suggests some kind of action by BOR to involuntarily limit deliveries to SRS contractors beyond the level defined in the contracts. [Footnote: See Defenders of Wildlife letter to the Bureau of Reclamation and U.S. Fish and Wildlife Service "Proposal to Reduce Refuge Water Deliveries as Proposed Action in CVP LTO Consultation Would Hurt Numerous Species and Violate Federal Law" April 24 2023. Defenders never received a response. Therefore we remain concerned the Proposed Action will also in turn involuntarily short mandatory water deliveries to wildlife refuges as required by Congress in the CVPIA] The DEIS continues: "This reduced volume of available water will be applied to all SRS Contractors collectively and individual contractor reductions may vary based on agreements and transfers between different SRS Contractors. In these years previously described SRS Contractor voluntary actions under their resolution may not be possible due to the very limited supply." (DEIS Appendix E pp. E-80 to E-81).That seems clear. But the DEIS follows with discussion of a scenario in which there is not agreement on allocations to SRS Contractors in which the decision point and the ultimate decision maker are anything but clear: "In situations where appropriate fall and winter flows were discussed and tradeoffs were evaluated but there was not agreement on the implemented flow regime from the SRS Contractors SRS Contractors propose alternative methods to meet obligations to senior water right holders under the SRS Contracts with the SHOT should the following year be a 3B year. Should a similar disagreement occur during a Bin 3B year after the Bin has been designated flows in disagreement will not affect the determination on volume of available water. Under these conditions the likelihood of storage below 2.0 MAF will increase."(DEIS Appendix E p. E-81).	to address instream flow objectives, lake levels, and refuge needs. Reclamation will continue to use level 4 to supplement supplies for refuges in drier years when storage and coldwater pool are limited. Alternative 2 establishes the SHOT to resolve disagreements on operations. Each party retains its respective rights and responsibilities. Allocations are the outcome of the water that is available; they do not determine whether the water is available. Allocations are administrative in nature and do not affect listed species. Under Alternative 2, NMFS is a member of the SHOT and can provide input on projected releases from Shasta Reservoir.
86-39	A revised and recirculated DEIS needs to make unequivocally clear: how BOR will ensure that reservoir storage conditions consistent with Bin 1 will be achieved in at least 80 percent of year swhether BOR will impose involuntary water delivery shortages on SRS Contractors pursuant to the CVPIA and endangered species needs;if so under what conditions BOR will	Reclamation does not believe that a supplemental EIS is needed at this time. The EIS is specific to the conditions for determining Bins and the actions that will be taken. Modeling shows the anticipated outcomes from those actions. Reclamation cannot control hydrology nor the

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	impose water delivery shortages on SRS Contractors; and what the decision-making process for the imposition water delivery shortages on SRS Contractors will be.	sequence of hydrology; therefore, a specific frequency of occurrence cannot be assured. Reclamation can take action based on then current conditions. Under Alternative 2, Reclamation will coordinate with USFWS to maintain summer deliveries of Level 2 supplies to Sacramento Valley CVPIA refuges to provide essential dry year habitat for giant garter snake, western pond turtle, tricolored blackbirds, and migratory waterfowl in a manner consistent with refuge contracts and agreed on operational priorities. If conditions remain dry through the fall, Reclamation and USFWS will coordinate on how to address instream flow objectives, lake levels, and refuge needs. Reclamation will continue to use level 4 to supplement supplies for refuges in drier years when storage and coldwater pool are limited. The EIS identifies Bins based on end-of-April storage and end-of-September storage. These Bins have numerical targets that provide clear criteria. Alternative 2 establishes the SHOT to resolve disagreements on operations. Each party retains their respective rights and responsibilities. *Appendix F, Modeling,* shows how delivery reductions to SRSCs would be implemented.
86-40	The extremely limited conditions under which the DEIS contemplates shortages to SRS Contractors is a fundamental flaw in program designed to protect listed species. The level of deliveries to SRS Contractors is unsustainable. It causes a crisis in the overall CVP and SWP system each time there are two or more sequential Dry or Critically Dry years. A more	Reclamation has explored a range of reasonable alternatives consistent with meeting the purpose and need. The purpose and need includes meeting the terms of contracts settling claimed senior water rights on the Sacramento River. Sacramento River Settlement Contracts

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	sustainable model is allocations to senior agricultural diverters on the Mokelumne River who take a 35 percent reduction in water deliveries in every "dry" (and not just critically dry) year. Again clarification of these reduction procedures would benefit not only species protection and CVPIA implementation but the SRS Contractors themselves by minimizing their future water supply uncertainties.	do not include a term for a 35% reduction. NEPA allows for consideration of alternatives that require additional authority. Alternative 3 includes reductions to Sacramento River Settlement Contracts beyond the terms of the contract; however, Reclamation would not be able to implement those reductions and has not identified Alternative 3 as the preferred alternative.
86-41	B. Delta Operations and the Serial Use of Temporary Urgency Change Petitions (TUCPs). Over the past decade BOR and DWR repeatedly and successfully sought to waive or weaken numerous water quality objectives including minimum required Delta outflow which are incorporated into requirements of both the 2008/2009 and the 2019 biological opinions. BOR and DWR also failed repeatedly to meet upstream water temperature requirements of both the Biological Opinions and the Basin Plan. In addition to inadequate Sacramento River Temperature Management Plans (required under water rights decision 90-5 and 91-1) and associated management of Shasta Reservoir Temporary Urgency Change Petitions (TUCPs) for Delta operations have been the principal artifice of this serial weakening of environmental protections during sequential Dry and Critically Dry years and also Wet years. TUCPs submitted by DWR and BOR were approved by the SWRCB in six out of ten years in the last decade: 2014 2015 2016 2021 2022 and 2023. These changes to water project operations were not previously analyzed as part of the environmental documentation for the Biological Opinions or in the SWRCB's 1995 Bay-Delta Water Quality Control Plan and Water Right Decision 1641. (See e.g. Water Rights Order 2014-0029 (September 24 2014); Water Rights order dated February 3 2015; April 6 2015 Revised Order; July 3 2015 order conditionally approving petition for temporary urgency change) [Footnote 25: Available online at http://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/2014/wro2014_0029.pdf] [Footnote 26 available online at https://www.waterboards.ca.gov/drought/docs/tucp/2015/tucp_order0203	TUCPs are included within Alternative 2 and the Proposed Action for ESA consultation purposes. Reclamation transmitted a TUCP Sensitivity Analysis Trend Report appendix as part of the Biological Assessment. Sufficient information on TUCPs was provided to the Resource Agencies, TUCPs are identified as a programmatic element within the NMFS draft Biological Opinion, and Temporary Urgency Change Order is referenced in the baseline section. Additional detail on the effects of TUCPs will be included in future ESA consultation efforts.

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	15.pdf] [Footnote 27: Available online at http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/tucp/2015/tucp_order040615.pdf] [Footnote 28: Available online at waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/tucp/2015/tucp_order070315.pdf]. For instance in 2015 the waivers of water quality standards reduced Delta outflows and increased water deliveries by approximately 800000 acre-feet. These waivers of required operations contributed to devastating impacts to winter-run Chinook Salmon spring-run Chinook Salmon fall-run Chinook Salmon Delta Smelt Longfin Smelt and other native fish species including: Greater than 95 percent mortality of endangered winter-run Chinook Salmon eggs and juveniles above Red Bluff Diversion Dam in 2014 and 2015 including temperature dependent mortality of 77 percent in 2014 and 85 percent in 2015 due to lethal and chronically adverse water temperatures below Keswick Dam. Greater than 95 percent mortality of fall-run Chinook Salmon eggs and juveniles that spawned in the mainstem Sacramento River above Red Bluff Diversion Dam in 2014. Total closures of California fall-run Chinook fisheries in 2023 and 2024 for lack of abundance of returning adult spawners due to high TDM rate impacts on the eggs and juveniles of 2020 2021 and 2023 year-classes. Record low abundance indices for Delta Smelt in the 2014 and 2021-23 Fall Midwater Trawl and 2015 and 2021 Spring Kodiak Trawl surveys. Near record low abundance of Longfin Smelt in the 2014 Fall Midwater Trawl survey and a new record low abundance in the 2015 Fall Midwater Trawl survey. Negative impacts on the survival of juvenile Delta Smelt in June through August of 2021 on the recruitment and post-larval survival of Delta Smelt in 2022 and on the recruitment of Delta Smelt in 2023. Negative impacts on the spawning and recruitment of Longfin Smelt in June and July of 2021 and on abundance of Longfin Smelt in 2022 and 2023.Lower survival and recruitment of several other estuarine species in 2021 2022 and 2023. Increases in the abundance of nonnative species like Black Bass in the Delta; and Increases in the abundance of toxic cyanobacteria in the genus Microcystis that result in harmful algal blooms	

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	in the Delta (see Lehman et al. 2022 and SWRCB 2021).(See e.g. Water Rights Order 2014-0029; Water Rights order dated February 3 2015; April 6 2015 Revised Order; July 3 2015 order conditionally approving petition for temporary urgency change; Protest to TUCP filed by the NRDC dated February 13 2015; March 24 2015 Petition for Temporary Urgency Change Attachment A; Feb 15 2022 Order Denying in Part and Granting in Part Petitions for Reconsideration of the Executive Director's Approvals of the June 1 2021 Order Conditionally Approving a Petition for Temporary Urgency Changes To License and Permit Terms and Conditions Requiring Compliance with Delta Water Quality Objectives In Response To Drought Conditions and the June 10 2021 Sacramento River Temperature Management Plan; March 18 2022 Temporary Urgency Change Petition for April 1 2022 through June 30 2022; and February 13 2023 Temporary Urgency Change Petition for February 1 2023 through March 31 2023.) [Footnote 29: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/comments_tucp2015/docs/nrdc_obegi02 1315.pdf] Available online at: [Footnote 30 : Available online at http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/tucp/2015/apr2015_req032415.pdf][Footnote 31: Available online at: https://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/2022/wro2022_0095.pdf][Footnote 32: Available online at https://www.waterboards.ca.gov/waterrights/water_issues/programs/applications/transfers_tu_notices/2022/2022031 8_tucp.pdf] [Footnote 33: Available online at https://www.waterboards.ca.gov/drought/tucp/docs/2023/20230213_tucp.pdf]	
86-42	C. Drought Toolkit. Part of the proposed mitigation for impacts of the CVP and SWP during drought conditions is the voluntary "Drought Toolkit" which would provide a coordination process to implement drought relief actions. However, the measures in the Toolkit are described generally and	The Drought Toolkit is a menu of potential actions to minimize the impacts of the CVP and SWP during dryer years. As referenced in Appendix E, Draft Alternatives, please see the current drought toolkit

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	are not compared side-by-side from one alternative to another. It is also unclear whether the Drought Toolkit is a menu of potential actions or a prescribed protocol for actions in response to drought or some combination.DEIS Section E.3.9 ("Drought") states that the "Drought Toolkit" was a requirement of the 2020 Record of Decision for the 2019 BOs. It further states that BOR and DWR completed the latest version of the drought toolkit in 2022. However the section does not describe the contents of the drought toolkit. (DEIS Appendix E p. E-58).Some aspects of the Drought Toolkit seem to be part of Alternatives 1 and 4; but even there there is no comprehensive inventory of required measures only a general reference. For example regarding Alternative 1 the DEIS states: " Reclamation and DWR would implement elements of a drought toolkit (DEIS Appendix E p. E-66). The DEIS says "a drought toolkit." It does not say which "elements" such a toolkit contains which elements BOR and DWR would select or how BOR and DWR would select such elements.Moreover the description of any existing Drought Toolkit would still not address the relationship between such measures and Alternative 2.Regarding Alternative 2 the DEIS states: "Reclamation is proposing to change the balance between risks of flood control releases for Shasta Reservoir and place a higher priority on maintaining storage for drought protection. The strategy is framed around a framework adapted from the multi-year drought sequence experienced in Victoria Australia." (DEIS Appendix Dp. D-8). However this priority repeated in several places in the DEIS (see also DEIS Appendix E p. E-71) is stated only in general terms as a policy not as a series of specific measures. Moreover it does not address the relative priority of maintaining storage in relation to water supply. DEIS Table D-5 "Summary of Alternative 2 Avoidance and Minimization Measures for Fish and Aquatic Resources" states regarding drought :"Avoidance Measure: Drought Operations Priority Framework. ""Geography & Listed Species Impacted: Sacramento River (salmonids and sturgeon); Bay-Delta (salmonids sturgeon and smelt)""Impact: "Reclamation will develop a Drought Emergency Plan that establishes system priorities and seeks to provide Winter-run Chinook salmon	(https://www.usbr.gov/mp/bdo/docs/droughttoolkit-latest.pdf) as an example. Where drought actions and the associated consequences are well understood and can be reliably implemented, those actions are incorporated. Actions taken pursuant to the Drought Toolkit that are not well understood would be subject to further description and analysis as part of future NEPA efforts. Reclamation is planning for future consecutive dry years, as part of those efforts; the Draft EIS does include a framework adapted from the multi-year drought sequence experienced in Victoria, Australia. Further, alternatives within the Draft EIS include shortages to CVP and SWP contractors and storage within CVP reservoirs. Alternative 2 does include the ability to increase upstream storage of water by submitting a Temporary Urgent Change Petition to the State Water Resource Control Board to modify the Objectives of D-1641 to provide better habitat conditions for listed species and increased operational flexibility. Modified operations that could be petitioned are analyzed as part of Alternative 2, such as the Shasta Framework identified end-of-April storage and projected end-of-September storage, among other criteria to address anticipated shortages to SRSCs. Please see *Appendix F, Modeling,* for model assumptions for actions taking in dry years. Regardless of the alternative selected, Reclamation will operate consistent with applicable law, contracts, and agreements.

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	spawning water temperatures. "The measure may increase or decrease the water temperatures by decreasing Sacramento River flows into the Delta; however increasing Shasta Reservoir storage may provide for more suitable water temperatures in the following year. The measure may also impact outmigration by decreasing Sacramento River flows into the Delta."(DEIS Appendix D Table D-5 pp. D-20 D-24 D-25).Here again the measure described seems to suggest in the absence of other mechanisms that BOR and DWR will request TUCPs in "decreasing Sacramento River flows into the Delta." Id.The voluntary largely qualitative nature of the Drought Toolkit and the lack of authorization or funding for its implementation makes it difficult to assume that it is reasonably likely to occur and therefore reliance on the Drought Toolkit in the DEIS is unlawful.Droughts are a normal part of the California climate. About forty percent of the last one hundred water years have been part of drought sequences. BOR and DWR must plan for consecutive dry years. This requires laying down to water supply some of the bets that have previously placed inordinate and devasting risk on listed species.However as contemplated in the DEIS involuntary shortages to SRS Contractors are exclusively limited to a triage situation. Until unsustainable levels of water deliveries are met head-on the CVP and SWP will always be one year away from a potential fisheries disaster. The listed species covered in the forthcoming BOs cannot survive many if any more such disasters.The Drought Toolkit contemplated in the DEIS fails the requirements of NEPA for disclosure and analysis. It also appears to be likely to result in the same mismanagement and resort to TUCPs as experienced in recent years. Indeed the Newsom Administration recently revised emergency drought executive orders so as to continue maximizing water exports while loosening drought restrictions for both rural and urban communities receiving CVP and SWP water.TUCPs for river and Delta management would undermine and alter the function of the drought toolkit if they continue to be used at all times as part of Delta management.	

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86-43	III. The DEIS Fails to Properly Analyze the Effects of Climate Change. California state law required statewide Greenhouse Gas (GHG) emissions to be reduced to 1990 levels by 2020 (this goal was met) and 2015 Executive Order EO-B30-15 sets a goal of reducing GHG emissions 40 percent below 1990 levels by 2030. (DEIS Appendix M p. M-6). Section 10 and Appendix M of the DEIS describe the GHG emissions of the alternatives yet fails to disclose if the 1990 emissions of the SWP and CVP were different than the baseline. Table M-2 shows CVP energy use is similar or greater than NAA under all alternatives except Alternative 3 which would have a 39 percent reduction in energy use. SWP energy use is greater than NAA under all alternatives except Alternative 3 which would have a 47 percent reduction in energy use. This reduction in energy use would result in reduced emissions. Alternative 3 is the only alternative that significantly reduces the GHG emissions of the CVP and SWP. Figure 10-6 (reproduced below) specifically shows that Alternative 3 would result in a reduction of.almost half a million metric tons of CO2-equivalent per year. This is a 14 percent reduction; the other alternatives would increase emissions.	The information provided is consistent with the analysis provided in *Chapter 10, Greenhouse Gas Emissions*.
86-44	IV. Reclamation Should Prioritize Alternative 3.Reclamation should prioritize Alternative 3 and compare it to other alternatives that might similarly and feasibly provide protection for listed species. This would require Reclamation to consider the implementation of the Sustainable Groundwater Management Act ("SGMA") and future water conservation measures.	Support for Alternative 3 has been noted. Refer to Standard Response 3, *Baseline and No Action,* for additional information regarding the No Action Alternative and sufficiency of the basis of comparison. Regardless of which alternative is selected in the Record of Decision, Reclamation considers the implementation of SGMA.
86-45	A. The DEIS Must Incorporate SGMA Into its Analysis of Groundwater Impacts. As the DEIS notes the model used to project groundwater pumping changes does not include the implementation of SGMA. (See Cal. Water Code 10720 (2020)). On page 6-5 the DEIS states:"The C2VSimFG model does not directly simulate limitations to groundwater levels and	The Draft EIS assumes implementation of SGMA. C2VSimFG is appropriate for this project's analysis for the geographic scale of the potential effects and the complexity of linking to surface water analysis as completed in CalSim 3. Individual models of certain areas

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	pumping that may be imposed as part of SGMA. The model assumes that groundwater will be used to supplement water supply if surface water supplies are decreased in order to meet demands. Conversely if surface water supplies are increased the C2VSimFG model will decrease groundwater pumping. The model therefore may over predict increases in groundwater pumping decreases in groundwater levels increases in loss of surface water to groundwater and subsidence. If groundwater supply is unable to be increased beyond a certain level (based on the GSP for the area) then the current demand level may not be able to be supported. "This omission matters because the DEIS proceeds to evaluate impacts and mitigation measures based on the model's output. It is particularly problematic for Alternative 3 which would reduce surface water deliveries substantially. Estuarine species need significantly more Delta outflow as discussed in detail in Section I. It is likely that any alternative that meets the needs of listed species for adequate flow into through and out of the Delta will necessarily result in significantly lower water deliveries Table H-54 shows that Alternatives 1 and 4 maintain or increase deliveries while Alternative 2 results in delivery reductions that are only 6-11 percent. On the other hand, Alternative 3 the only one that meets many of the listed species' needs for improved environmental conditions does so in large part by reallocating water diversions to necessary flow augmentations thereby substantially affecting water deliveries. Reduced deliveries to CVP and SWP contractors projected under Alternative 3 are not representative of all water users and do not reflect all of the SWP and CVP contractors' water supplies. For example Table F.2.4-12 shows a 1.1 MAF reduction in south of Delta agricultural contract deliveries under Alternative 3. This is similar to the 0.9 MAF reduction in Delta supply to the San Joaquin Valley expected under the SWRCB's 65% of unimpaired flow scenario (SWRCB 2023 at 6-54). That scenario represented a 31 percent reduction of Delta supplies but only represented a 5 percent reduction of total San Joaquin Valley supply. In addition the DEIS at F.1-1-2 states "CVP south of Delta service contractor demands are reflected as full contract obligation." Given that many south of Delta water contractors do not typically receive their	within the Central Valley could have capabilities to incorporate the complexity of CalSim 3 and SGMA all at the same time, though they would not be comprehensive for the scale of this project. Appendix F, Modeling, states, *"The California Department of Water Resources (DWR) Fine Grid California Central Valley Groundwater-Surface Water Simulation Model (C2VSimGG) Version 1.01 has been identified as the model to be used in assessing groundwater impacts in the Central Valley."* Reclamation's water conservation programs are outside the scope of the Proposed Action. See *Appendix Y, Cumulative Effects Technical Appendix,* for past, current, and future water conservation and groundwater storage and recovery projects.

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	full demands the characterization of impacts to south of Delta water supply is overstated.The DEIS incorrectly assumes that water delivery reductions projected to result from Alternative 3 cannot be mitigated. Indeed the "Potential Mitigation Measures" column of corresponding Table H-54 in the DEIS was not populated because:"These reductions in water supply deliveries and water made available for diversion would not be able to be replaced reliably from other sources such as water transfers or groundwater pumping. Water transfers are included in the No Action Alternative and would not be available to further offset the reduced water supply deliveries generated by Alternatives 2 and 3. Reliance on groundwater pumping to offset these reductions would not be feasible given the potential for numerous environmental effects generated by additional groundwater pumping in an area with declining groundwater levels and the limits on the availability of groundwater supplies with the implementation of the Sustainable Groundwater Management Act (see Appendix I Groundwater Technical Appendix for more information). Given the environmental and technological limits on the implementation of other potential options to offset this impact no feasible mitigation has been identified to reduce the severity of these reductions." (DEIS Appendix H p. H- 56) (emphasis added).In other words the DEIS based on the model assumes that reductions in deliveries would be replaced by groundwater pumping (DEIS 17-3 Appendix I pp. 188-202). The DEIS ignores that fact that SGMA is potentially the minimization and mitigation measure for potential groundwater impacts under proposed CVP/SWP operations or its alternatives. Effective Groundwater Sustainability Plans (GSPs) will identify and promote strategies to refill groundwater aquifers when feasible and restrict pumping to ensure aquifer levels can be maintained in California's evolving climate. Only by overlooking the status of SGMA implementation can the DEIS conclude "No avoidance and minimization measures or additional mitigation measures have been identified for groundwater." (DEIS p. 6-19). GSPs have already been completed and deficient GSPs have been identified and are in the process of being revised or subject to state control. The DEIS fails to disclose these facts and their obvious	

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	implications. Reclamation should properly include the future implementation of and compliance with the Sustainable Groundwater Management Act specifically as it pertains to Alternative 3.B. The DEIS Must Seriously Evaluate Water Conservation and Other Mitigation Measures Available to Offset Water Supply Impacts of Alternative 3. The DEIS's failure to disclose the role of SGMA in preventing groundwater impacts is matched by its failure to acknowledge the huge potential for water conservation to mitigate impacts of reduced surface water supplies in California. Numerous studies in recent years have identified millions of acre-feet of potential reductions in water use in California. As the State Water Board notes"On the basis of a review of previous efficiency studies Pacific Institute and Natural Resources Defense Council (2014) estimated that agricultural water use could be reduced by 5.6 million to 6.6 MAF/yr or by about 17 to 22 percent while maintaining productivity and total irrigated acreage." (SWRCB 2023 p. 6-95).In addition to SGMA measures identified in these reports should be considered for Alternative 3. Reclamation should properly include the future implementation of water conservation measures and other water management actions specifically revising the modeling results and subsequent analysis of impacts of Alternative 3.	
86-46	C. There are Clerical Errors and Unclear Descriptions of Alternative 3 that Require Correction. Section E.6.1.3 of the DEIS describes water temperature management under Alternative 3 and Section 7 covers Alternative 4. These sections have the following possible typographical errors in section numbering that should be reviewed and revised:The DEIS refers to "Delta outflow requirements described in Section E.7.1.1 Water Temperature Management from December through May (DEIS p. E-163). It is likely this should refer to section E.6.4.2. Section E.7.1.1. contains no description of Delta outflow requirements.The DEIS on p. E-163 also states that "Reclamation would not make water available for delivery until operational plans show the targets in 7.1.1 and 7.1.2 are likely to be met or exceeded." However Sections 7.1.1 and 7.1.2 contain targets that appear to	Thank you for the comment. Reclamation has reviewed and rectified errors in Final EIS.

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	be inconsistent with targets in Section E.6.1.3. For example Section 7.1.1 contains a 2.0 MAF EOS target while Section E.6.1.3 contains a 2.2 MAF target. Section 7.1.2 contains fall-winter instream flows under Alternative 4 and EOS targets between 2.4 and 3.2 TAF that control Keswick releases; however Section 6 specifies Alternative 3's approach of releasing 45-55 percent of unimpaired inflows in order to achieve Delta outflow criteria.F.2-1-1 must be corrected it displays an error where a reference source was not found for a figure number.These references to Section 7 in Section 6 should be corrected. We would also recommend that Reclamation compare the summary of Alternative 3 callouts on F.1-1-53 and the callout tables in Section F.1-2. The Section E.6 summary appears to be incorrect and incomplete compared to the callout summary in Section F.1-1.7 and should be revised for accuracy. In addition Section E.6 fails to mention the lower pass-through of unimpaired flow when storage requirements are not likely to be met (described on F.1-1-53).The DEIS states in several places (e.g. E-63 E-167 F.1-1-18 F.1-2-7) that all the alternatives except NAA assume that San Luis Reservoir 130 TAF to 1102 TAF of increased CVP capacity. However the October to April exceedance graphs on pages F.2-1-288 to F.2-1-294 show the Alternative 3 line reaching peak storage at the same capacity as NAA. This apparent inconsistency between the Alternative 3 description (including increased San Luis Reservoir storage) and the modeling (not including the increased storage) must be corrected when the DEIS is revised and recirculated.Additionally there are many document clarity issues. In general paragraphs in the main body of the DEIS summarizing results must do more than reiterate the range of model outputs for each alternative and state that each alternative has potential adverse and potential beneficial impacts. For example the paragraph describing impacts of the Proposed Action on Delta Smelt (DEIS at 12-53) is unintelligible:"Alternative 2 is expected to have little to negligible impacts to larvae resulting from increased and decreased entrainment of larvae (Neutrally buoyant particle fate by inflow bin entrained at exports: 45% hihi 90% hilo; neutrally buoyant particle fate by OMR bins entrained at	

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	exports 56% at -2000 cfs 79% at -5000 cfs). For rearing habitat there are expected minor adverse to minor beneficial impacts on juveniles (Habitat Suitability Index (HSI) without temperature threshold of non-critically dry water year types and critically dry water year type: 0.513 0.65 and 0.402 0.424 and HSI with temperature threshold: 0.203 0.525 and 0.129 0.137). For population abundance there are expected adverse to beneficial impacts on the population growth rate (LCME: Geometric mean of predicted population growth rate of wet and above normal water year types and below normal dry and critically dry water year types: 1.24 (Wet and Above Normal) 1.28 (Wet and Above Normal) 0.74 (Below Normal Dry and Critically Dry) 0.74 0.77 (Below Normal Dry and Critically Dry) Figure 12-4). Alternative 2 includes Old and Middle River Flow Management which adjusts exports to minimize entrainment of fish and protection of critical habitat."Providing such an unprioritized list of the range of effects of each alternatives in different water year types on different life stages of different fish with no context is not informative. This statement and the description of the effect of other Alternatives on Delta Smelt bury the lead: The NAA and all alternatives except Alternative 3 are expected to result in continued rapid declines of Delta Smelt but Alternative 3 is expected to result in mean population growth of this highly imperiled species. (See DEIS Figure 12-4). Reclamation must ensure the key outcomes of each alternatives are compared clearly concisely and accurately and the ultimate result of such effects are acknowledged.	
86-47	V. Conclusion. Reclamation must make serious revisions to the DEIS moving forward. First in addition to the deficiencies listed in the opening summary and discussed in detail above, the DEIS is missing critical information including but not limited to: Failure to identify or analyze all potential combinations of Alternative 2 which includes TUCPs and all VAs. Failure to use the NMFS Winter-run Lifecycle Model to assess likely effects on the listed species from the Proposed Action. Failure to use the proper temperature thresholds for assessing Proposed Action impacts to various salmonid life stages. Failure to disclose the impact of high river	Please refer to the comment responses above for the concerns summarized in this comment. Reclamation believes the Draft EIS is adequate and does not require supplementation. Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach, for additional information. Please also refer to Standard Response 5, Adequacy of Analysis and Mitigation. Please refer to Standard Response 10, Voluntary Agreements, for additional discussion

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	temperatures on the winter-run juvenile production impact. Failure to disclose the precarious state of the listed species including the Bay's White Sturgeon population (which recently gained CESA protection as a "candidate" for listing) and that the status quo for these species is decline not stasis. Proper inclusion of these important elements will most likely require revision and recirculation of the DEIS.	regarding VAs. Please refer to Standard Response 2, Related Regulatory Processes.
86-48	We look forward to continuing to engage in the reconsultation process. Thank you for consideration of our views.SincerelyAshley OverhouseWater Policy Advisor Defenders of WildlifeCC:Dave Mooney Bay-Delta Office Area Manager U.S. Bureau of Reclamation Jennifer Quan Regional Administrator National Marine Fisheries Service Lenny Grimaldo Assistant Environmental Director California Department of Water Resources Paul Souza Regional Director Pacific Southwest Region U.S. Fish and Wildlife Service Karla Nemeth Executive Director California Department of Water Resources Charles Bonham Executive Director California Department of Fish and WildlifeATTACHMENT 1[See original comment for NGO LTO Draft Proposed Action Comment Letter Part 1 July 2023]ATTACHMENT 2[See original comment for NGO LTO Draft Proposed Action Comment Letter Part 2 August 2023]ATTACHMENT 3[See original comment for NGO Bay Delta Plan Phase II Draft Staff Report Comments January 2023]ATTACHMENT 4[See original comment for NGO SWP LTO DEIR Comment Letter July 2024]ATTACHMENT 5[See original comment for Voluntary Agreement Timeline Fact Sheet July 2024]ATTACHMENT 6[See original comment for Defenders et al. Letter to Agencies on ITL Exceedance April 2024]ATTACHMENT 7[See original comment for Defenders Letter to Agencies Refuge Water Deliveries April 2023]ATTACHMENT 8[See original comment for NRDC et al. BOR LTO Scoping Comment Letter March 2022	Reclamation appreciates comments on the EIS.

Table 4-87. Letter No. 87

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87-1	1. The DCP EIR Is Inadequate Rendering the DEIS Inadequate Appendix Z of the DEIS expressly incorporates "the environmental effects of the approved [DCP] as described in the [DCP EIR] with implementation of Alterative 2" the Bureau of Reclamation's (Reclamation) preferred alternative for the LTO of the CVP and SWP thereby relying on the EIR's inadequate analysis and conclusions for its own analysis and conclusions. DEIS Appen. Z p. Z-1. It does so despite the ongoing litigation challenging the adequacy of the DCP DEIR highlighting numerous substantive flaws in DWR's analysis and the preliminary injunction granted in that litigation to stay DWR's implementation of the DCP. The City which is participating as a Petitioner in the DCP litigation and has also protested DWR's water rights change petition in an administrative proceeding before the California State Water Resources Control Board has submitted lengthy comments to DWR attached and incorporated hereto as Exhibits 1 2 and 3 highlighting the deficiencies in the DCP EIR. These flaws are carried through to the water quality analysis contained in the DEIS.	Alternative 2 considers the Delta Conveyance Project (DCP) programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial DCP operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA.
87-2	One major problem with the DCP EIR and therefore with the DEIS is the lack of analysis of impacts from potential levee breaches. See e.g. Exh. 3 Attach. A p. 20 (Comment 530-47). In the DEIS Reclamation acknowledges that breaching of Delta levees and subsequent inflows of brackish water to the Delta is a real possibility stating that protecting against these impacts is a primary objective of the proposed DCP. DEIS Appen. Zp. Z-3. However the DCP EIR did not evaluate breached levees and instead assumed that Delta channels would have "glass walls" such that levees would not be breached even under the maximum	Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial DCP operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA.

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	sea level rise scenario (10.2 feet in 2100) the DCP EIR evaluated. To our knowledge DWR has not evaluated the water quality impacts or operational changes that would occur in response to breached Delta levees and because of its reliance on the DCP EIR neither has Reclamation for the Proposed Action despite levee breaches being identified in the DEIS as a potential adverse effect.	
87-3	Other critical DCP EIR failures resulting in similar DEIS inadequacies include the EIR's insufficient and inaccurate analysis of water quality impacts to operations and public health and safety from increased salinity and Harmful Algal Blooms (HABs). These problems are discussed in more detail below. For additional inadequacies please refer to issues raised in the City's comment letters. See Exhs. 1-3.	Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial DCP operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA.
87-4	2.The DEIS Does Not Include Sufficient Information to Understand DCP Impacts and Mischaracterizes the DCP - The DEIS itself does not provide adequate information to enable stakeholders to understand impacts of DCP operations either alone or as part of the Proposed Action. Specifically it does not provide enough information to evaluate impacts to the City's [of Stockton's] intake operations. As a result it is not possible to evaluate impacts to the City's water supply.	The purpose of Appendix Z, Evaluation of Delta Conveyance Project Operations, is to disclose the environmental effects of the approved Delta Conveyance Project Alternative 5, as described in the Final Environmental Impact Report for the Delta Conveyance Project, with implementation of LTO Alternative 2, as described in the Draft Environmental Impact Statement. Alternative 2 addresses the Delta Conveyance Project programmatically and recognizes future environmental compliance will be necessary. During the planning and construction period for the Delta Conveyance Project, DWR expects to implement its adaptive management plan, including its baseline study plan and monitoring. The results of these studies, as well as future permitting decisions, may result in further refinements to the proposed operation of the Delta Conveyance Project. Potential refinements, as well as environmental or regulatory changes that may occur during the planning and construction period prior to initial Delta Conveyance Project operations, will be considered in future project-level permitting consistent with NEPA and ESA. As new information/updates become available regarding SWP and

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		Delta Conveyance Project operations, additional assessments relative to LTO of the CVP may be necessary. As proposed in the EIS, and as will be proposed at various times in the future, the operation of the SWP's existing facilities will likely change, and the combined effect of modified ongoing operations of the SWP and the operation of the Delta Conveyance Project will need to be determined.
87-5	Appendix Z admits that it does not evaluate the "potential additive effects of operating the CVP" due to the timing of the DCP's environmental analysis claiming that "it was not possible to perform new modeling runs." DEIS Appen. Z p. Z-1. As such it is unclear what purpose is served or attempted to be served by including Appendix Z in the DEIS considering that the analysis it provides is admittedly incomplete. Appendix Z does not explain why Reclamation chose to attempt its analysis without the requisite information to provide a thorough evaluation of impacts. Instead it relies heavily on flawed water quality analyses from the DCP EIR. Id. p. Z-2.	The purpose of Appendix Z, Evaluation of Delta Conveyance Project Operations, is to disclose the environmental effects of the approved Delta Conveyance Project Alternative 5, as described in the Final Environmental Impact Report for the Delta Conveyance Project, with implementation of LTO Alternative 2, as described in the Draft Environmental Impact Statement. Alternative 2 addresses the Delta Conveyance Project programmatically and recognizes future environmental compliance will be necessary. During the planning and construction period for the Delta Conveyance Project, DWR expects to implement its adaptive management plan, including its baseline study plan and monitoring. The results of these studies, as well as future permitting decisions, may result in further refinements to the proposed operation of the Delta Conveyance Project. Potential refinements, as well as environmental or regulatory changes that may occur during the planning and construction period prior to initial Delta Conveyance Project operations, will be considered in future project-level permitting consistent with NEPA and ESA. As new information/updates become available regarding SWP and Delta Conveyance Project operations, additional assessments relative to LTO of the CVP may be necessary. As proposed in the EIS, and as will be proposed at various times in the future, the operation of the SWP's existing facilities will likely change, and the combined effect of modified ongoing operations of the SWP

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		and the operation of the Delta Conveyance Project will need to be determined.
87-6	For instance like the DCP DEIR, the DEIS discusses and presents water quality results as long-term monthly averages. For each scenario a single value is presented for each month representing that month's average for a period from 1922-2021. This approach obscures results on finer timescales hinders the analysis of water quality impacts for specific years or year types and prevents the analysis of water quality impacts at specific locations. It is particularly concerning given the trend towards the occurrence of extreme dry and wet water years which is not adequately represented by the use of long-term averages. See e.g. Exh. 1 p. 7. This issue is present in Chapter 4 and Appendices G and Z of the DEIS. Similarly it continues to provide "exceedance tables" that are not meaningful or properly computed a concern that the City raised in relation to the DCP EIR. See e.g. id. exh. 1 pp. 20 42.	Currently, the tools to provide this finer scale are not available. Under NEPA, agencies are not required to undertake new scientific and technical analysis to inform their analysis (§1502.23). Because the Draft EIS presents a comparative analysis, the information is adequate to provide information about differences and similarities between alternatives, including the No Action Alternative.
87-7	Additionally it appears that under the preferred alternative salinity will increase in September and October and chloride concentrations of water exported from the Delta are expected to increase. DEIS Appen. G p. G-150 Table G-80. This increase in salinity is particularly concerning because the DCP is projected to have similar impacts see e.g. Exh. 3 Attach. A pp. 5-6 (Comment 530-9) which would compound with impacts associated with the Proposed Action. Appendix Z also only evaluates potential changes in water supply deliveries to CVP and SWP not including impacts to water supplies diverted from the Delta by other entities. DEIS Appen. Z p. Z-23.	DCP has been evaluated programmatically in the Draft EIS. Reclamation recognizes that future environmental compliance may be necessary.
87-8	With respect to HABs the DEIS does not provide detailed quantitative analysis to support the summary of potential impacts on residence time in the Delta. Instead Reclamation notes the potential increase of inflows for two months (June and July) in one water year type (critical years) for Alternative 1. Reclamation	Because the Draft EIR for DCP and the Draft EIS for the Long-term Operation of the CVP and SWP are different efforts with different scopes, it is acknowledged that different methodologies may sometimes be used. Appendix Z, Evaluation of Delta Conveyance Project Operations, presented results for three regions of the

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	inexplicably does not provide any details about potential residence time impacts for the preferred alternative (Alternative 2). The City's comments on the DCP EIR noted that DWR looked at small subsections of the Delta when evaluating this issue and did not consider changes in residence time of water in the Delta as a whole. See e.g. Exh. 3 Attach. A pp. 9-10 (Comment 530-20). In contrast it now appears that Reclamation has evaluated whole-Delta residence times. These potential methodological differences and lack of detail make it difficult to evaluate the combined impact of the Proposed Action and DCP on residence time and HAB formation potential.	Delta including Suisun Marsh, Suisun Bay, San Francisco Bay, and the Delta.
87-9	The DEIS also fundamentally mischaracterizes the DCP. Appendix Z states: "DWR is seeking a new point of diversion and is not seeking to otherwise expand or alter its water rights." DEIS Appen. Z p. Z-4. This is incorrect. DWR is indeed seeking to alter its water rights for the DCP evidenced in the ongoing water rights matter to be heard by the State Water Resources Control Board. DWR is now requesting a 55-year extension to the expired 2000 construction deadline in its water rights permits as part of its DCP change petition. To proceed with the DCP DWR would also need to get approval to alter its deadline for beneficial uses which expired in 2009. The DEIS must be revised to reflect the accurate scope of the DCP.	The statement that DWR is seeking new points of diversion and is not seeking to expand or alter its water rights is accurate. As approved by DWR, the Delta Conveyance Project proposes two new points of diversion on the Sacramento River, and DWR is pursuing all permits and approvals necessary for construction of the project's intakes. The Delta Conveyance Project does not propose to increase the total quantity of water permitted for diversion by the State Water Project or seek to extend the time to put water to beneficial use under DWR's existing water right permits. As required by law, unless a State Water Project water right time extension petition is sought by DWR and approved by the State Water Resources Control Board in the future, the project will operate consistent with maximum historical use utilized by the State Water Project within the timeframe identified in DWR's existing water right permits.
87-10	3. The DEIS Does Not Satisfy NEPA Requirements and DOI NEPA Regulations The DEIS frames itself as including "programmatic analysis" of both DCP operations and the Sites Reservoir Project as "two programmatic components." DEIS Appen. Z pp. Z- 1 Z-2. It further represents that its assessment of impacts disclosed in the DEIS and potential combined impacts with the DCP is coarse1	Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Potential future modifications would be considered in future project-level

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	but contends that it is sufficient for purposes of programmatic analysis [Footnote 1: Appendix Z states that the analysis is "course." The City assumes that this is a typographical error and that the quoted text is intended to read "coarse." DEIS Appen. Z p. Z-2.]. Id. p. Z-2. NEPA allows programmatic documents to defer some decisions and analysis but does not allow an agency to rely on another program's undefined and unanalyzed activities. NEPA requires that environmental documents be accurate and "prepared with professional and scientific integrity using reliable data and resources"40 C.F.R. 1506.5(a); see also id. 1506.6(a)-(b). NEPA also requires agencies to take a "hard look" at a proposed action's environmental consequences. Kern v. United States BLM 284 F.3d 1062 1066 (9th Cir. 2002) (citing Metcalf v. Daley 214 F.3d 1135 1141 (9th Cir. 2000)). Here the DEIS was not prepared with reliable data and resources. It purports to utilize inadequate analysis from a legally and technically unsound EIR as a basis for some of its own critical analysis. As a result Reclamation has not taken the requisite "hard look" at the Proposed Action's impacts on the human environment.	permitting consistent with the National Environmental Policy Act (NEPA) and the ESA.
87-11	It [the DEIR] also does not adhere to the Department of Interior's (DOI's) NEPA regulations which state: "[t]he analysis of the proposed action and any alternatives must include an analysis of the effects of the proposed action or alternative as well as analysis of the effects of any appropriate mitigation measures . . . that are considered." 43 C.F.R. 46.130(a). To the extent that the DEIS relies on programmatic review tiered from the EIR's inadequate analysis of the DCP it does not contain sufficient evaluation of impacts and inclusion/analysis of necessary mitigation measures had sufficient analysis occurred. Furthermore tiering is not appropriate where. Tiering may occur when one NEPA document "tiers to another broader NEPA document" Id. 46.140 namely an "existing environmental impact statement	Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes that may occur during the planning and construction period prior to initial Delta Conveyance Project operations, would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. DCP has been analyzed, and the State certified the Final EIR. Reclamation has reviewed the analysis and believes that it is adequate to programmatically disclose the impacts of the DCP in the EIS.

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	environmental assessment or programmatic environmental document" 40 C.F.R. 1501.11(b). Tiering is not allowed here where Reclamation ostensibly hinges a programmatic EIS off of a faulty project-level EIR prepared pursuant to a state statute (the California Environmental Quality Act) tiering is inappropriate. And even if tiering were allowed here in this way to the extent that any relevant analysis in the first-tier document "is not sufficiently comprehensive or adequate to support further decisions the tiered NEPA document must explain this and provide any necessary analysis." 43 C.F.R. 46.140(b).NEPA requires that an EIS "identify consider and disclose to the public relevant environmental information before decisions are made and before actions are taken." 40 C.F.R. 1500.1(b). That has not occurred here. For the foregoing reasons the current approach taken by Reclamation regarding the DCP and its EIR renders the DEIS inadequate under NEPA. Reclamation "need not unreasonably delay its NEPA analysis in order to integrate [DWR's] analyses" should such adequate analyses become available one day but it must perform its own adequate analyses to comply with NEPA. 43 C.F.R. 46.430(b). Accordingly the City requests that Reclamation revise the DEIS to provide adequate review of the coordinated operations of the DCP with specific attention to the issues highlighted above and in the City's attached comment letters or remove Appendix Z to the DEIS entirely and any reference to or incorporation of it in the DEIS's programmatic review.	Reclamation is not tiering from the DCP Draft EIR, but analyzing DCP programmatically as part of Alternative 2 and as part of the cumulative analysis for the other alternatives.
87-12	ATTACHMENT 1[See original comment for letter RE City of Stockton Comments on Delta Conveyance Project] Att 1 of 1[See original comment for Technical Comments on the Delta Conveyance Project and Associated Draft Environmental Impact Report] ATTACHMENT 2[See original comment for City of Stockton Supplemental Comments on Delta Conveyance Project DEIPublic Health Impacts Due to Construction Noise Air	This comment pertains to reference materials and is not a substantive comment on the Draft EIS.

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	Pollution]Att 1 of Att 2[See original comment for Elsevier Article: "Construction noise effects on human health: Evidence from physiological measures"]Att 2 of Att 2[See original comment for article "Noise as a Public Health Hazard"]Att 3 of Att 2[See original comment for article "Noise Pollution Isn't Just Annoying It's Bad for Your Health"]Att 4 of Att 2[See original comment for article "Air pollution may raise risk of dementia analysis says"]Att 5 of Att 2[See original comment for article "Air pollution may increase risk for dementia"]Att 6 of Att 2[See original comment for graph "San Luis Reservoir Storage" (combination water/calendar year)] ATTACHMENT 3[See original comment for letter RE City of Stockton Objections and Further Responses Pertaining to the Delta Conveyance Project.]Att 1 of Att 3[See original comment for City of Stockton DWR Responses and Objections (table documenting letter/comment number comment and objection]Att 1 of Att 2 of Att 3[See original comment for comments on DWR's analysis of residence time]Att 2 of Att 2 of Att 3[See original comment for Comments on DWR's presentation of summary statistics]	

Table 4-90. Letter No. 90

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90-1	Dear U.S. Bureau of Reclamation: On behalf of the Friant Water Authority (FWA) and each of its member Agencies thank you for the opportunity to review and provide comments on the Draft Environmental Impact Statement (DEIS) on the Long-Term Operations of the Central Valley Project (CVP) and State Water Project (SWP) [Footnote 1: This comment letter is submitted by FWA on its own behalf and on behalf of the FWA member Agencies individually. A listing of FWA member Agencies is shown in Appendix A].FWA is a joint powers authority of Friant Division contractors (Friant Contractors) of the Central Valley Project (CVP) which span the eastside of the lower San Joaquin Valley and are served by surface water that is diverted from the upper San Joaquin River watershed at Millerton Lake. The Friant Division encompasses over 1 million acres of farmland and more than 1 million people including 54 disadvantaged communities which rely on some form of groundwater.The Friant Division of the CVP was intended to address two issues of particular importance to the San Joaquin Valley during the first decades of the twentieth century: (1) major land subsidence caused by unsustainable agricultural groundwater pumping; and (2) the need for economic development and employment opportunities to accommodate an influx of population into California. With those issues in mind the Friant Division's facilities were designed to permit groundwater levels to stabilize while also allowing the economy of the east side of the Valley to grow and thrive. Thus the Friant Division became one of California's earliest and largest "conjunctive use" projects in which groundwater and surface water resources are managed jointly and sustainably.The Friant Division's principal facilities include Friant Dam on the San Joaquin River which impounds Millerton Lake; the Friant-Kern Canal which diverts water from	Reclamation appreciates review by our interested parties and the public. This comment provides background information.

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	Friant Dam and conveys it south to the Kern River serving portions of Fresno Tulare Kings and Kern Counties; and the Madera Canal which diverts water from Friant Dam and carries it north to the Chowchilla River to serve areas of Madera and Merced Counties. The Friant Division's water supply was made possible by purchase and exchange agreements between U.S. Bureau of Reclamation (Reclamation) and the original riparian and pre-1914 water users the San Joaquin River Exchange Contractors (Exchange Contractors) who agreed not to exercise their remaining San Joaquin River water rights in exchange for a different water supply to be delivered by the United States from the Sacramento River and Sacramento-San Joaquin Deltaand other sources delivered to them via Jones Pumping Plant and through the Delta-Mendota Canal and Mendota Pool. So long as there is sufficient water to meet the Exchange Contract the United States stores and delivers the waters of the San Joaquin River to Friant Contractors. Thus although Friant Contractors are not direct users of Sacramento River water Delta operations can significantly affect Friant Division water supplies.	
90-2	FWA has reviewed the DEIS on the Long-Term Operations of the CVP and SWP and is concerned about the actions included in the Preferred Alternative the absence of a meaningful range of reasonable alternatives thereto and the insufficient level of impact analyses disclosed for the San Joaquin Valley. We offer the following comments.	Reclamation believes that the analysis in the Draft EIS is adequate and underwent a very rigorous approach, including conducting an Initial Alternatives Report, to develop a range of reasonable alternatives. Please refer to Standard Response 4, Formulation of Alternatives, for additional description.
90-3	1. The Preferred Alternative is inconsistent with regulatory requirements. The Preferred Alternative (Alternative 2B) includes voluntary actions to "harmonize" the operations of the CVP and SWP due to requirements of the SWP's Incidental Take Permit (ITP) of the California Department of Fish and Wildlife (CDFW) (DEIS page 0-4). There is nothing in the Purpose and Need that requires such a harmonization with the SWP. The ITP includes	See Standard Response 2, *Related Regulatory Processes*. Alternative 2 actions were developed to voluntarily harmonize operational requirements of the CVP with CESA requirements for the SWP as appropriate and consistent with Reclamation's authorities. As stated in the EIS, although Reclamation and DWR strive for a coordinated operation of the CVP and SWP,

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	minimization measures seemingly intended to address with the California Endangered Species Act (CESA) instead of mitigation measures to avoid jeopardy as required by the federal Endangered Species Act (ESA). Comments on specific measures are discussed further below.	Reclamation and the CVP are not subject to requirements under CESA.
90-4	Additionally, Reclamation fails to include other actions and alternatives that would have fewer adverse water supply and economic impacts that are adequate to avoid jeopardy consistent with Section 4004(a)(6) of the Water Infrastructure Improvements for the Nation (WIIN) Act or describe why other actions using less water supply would not avoid jeopardy. Reclamation openly states in the DEIS (page 0-4) that Reclamation reached consensus on the Preferred Alternative with U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) before it was submitted for consultation which conveniently bifurcates the process required in Section 4004 because the consulting agencies will not need to propose Reasonable and Prudent Alternatives and justify them.	Reclamation included in the Draft EIS an adequate range of reasonable alternatives with differing resulting changes to water supply. Please refer to Standard Response 4, Alternatives Formulation, for a detailed description of the rigorous approach Reclamation undertook in the development of alternatives. Reclamation is currently preparing environmental documents under the requirements of NEPA and the ESA to analyze and disclose the potential effects of the proposed action and alternatives. No decisions have been made on the selection of an alternative under NEPA or reasonable and prudent alternatives, if any, under ESA. Reclamation will comply with all applicable laws and requirements, including the WIIN Act and consideration of these Final EIS comments, prior to making final decisions related to the proposed action or alternatives. Nothing under NEPA or the ESA restricts Reclamation from conferring and coordinating with cooperating agencies in defining its proposed action and a range of reasonable alternatives for analysis in this EIS. Instead NEPA and the CEQ NEPA Regulations encourage early coordination with cooperating agencies in defining alternatives and determining the scope of the EIS analysis. Using the input gathered early in the NEPA and ESA consultation process, Reclamation has crafted a proposed action and alternatives that takes into consideration the needs of its CVP contractors in balance with the need to minimize environmental effects and support fish and wildlife and other

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		beneficial uses. The USFWS and NMFS did not forego the possibility of including an RPA as part of formal consultation if they believe that the action subject to consultation would result in jeopardy to listed species. Please also refer to Standard Response 2, Related Regulatory Processes.
90-5	1.1 The start of Old and Middle River management for smelt entrainment protection should be based on presence in the south Delta. The start of Old and Middle River (OMR) management includes a calendar-based trigger of January 1 unless there is a "first flush" and if 5% of any one or more salmonid species are estimated to be present in the Delta (page 3-28). The Preferred Alternative should not include calendar-based restrictions but instead be based on higher quality information such as real-time monitoring and presence in the south Delta with use of numerical tools to predict salvage. This would likely result in additional weeks of Delta exports during a critical time in storing water ahead of initial allocations. For adult Longfin smelt this trigger is based on prior cumulative salvage and there are not clear circumstances defined for if/when the Water Operations Management Team (WOMT) can decide to initiate OMR management and the quantitative tools real-time data or other criteria that must be considered when making such decision. Is subsequently moving into OMR Management the next best protective action or are there other management options that might be determined?	Alternative 1 and 4 do not include calendar-based triggers. Alternative 2 includes calendar-based triggers. Reclamation believes it analyzed a range of reasonable alternatives. By including calendar-based trigger, Alternative 2 aims to minimize adult Delta smelt entrainment risk by reducing exports at the times Delta smelt were historically detected and to reduce reliance on detection of rare species in monitoring. The timing occurs during periods when turbidity is elevated in the south Delta resulting in habitat conditions that support movement of Delta smelt from the lower San Joaquin River into the south Delta and toward the export facilities (Smith et al. 2021). Larval and juvenile Delta smelt protections start on the end of the Adult Delta Smelt Entrainment Protection Action. When WOMT considers whether to initiate OMR management based on adult longfin smelt salvage, it will use literature, monitoring observations, modeling, and other criteria to inform when to initiate real-time OMR management. The adult longfin smelt action anticipates OMR management being the next best protective action based on the information and criteria considered by WOMT. See *Chapter 5, Water Supply,* for additional information on the effects of the alternatives on water supply.

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		Smith, W. E., L. Polansky, and M. L. Nobriga. 2021. Disentangling Risks to an Endangered Fish: Using a State-Space Life Cycle Model to Separate Natural Mortality from Anthropogenic Losses. Canadian Journal of Fisheries and Aquatic Sciences 78: 1008–1029 (2021). Available: dx.doi.org/10.1139/cjfas-2020-0251.
90-6	1.2 OMR flow limits associated with proposed protection actions should be clearly justified and significance to the species' populations should be qualified. Under certain Delta conditions an OMR flow no more negative than -3500 cfs (pages 3-49 to 3-50) is intended to provide additional protections to smelt during the OMR management season; this OMR index should be clearly explained and the significance of the action to the population should be disclosed. It is unclear if modeling has been performed to confirm the significance of this action. Smelt entrainment was analyzed utilizing particle tracking modeling as a proxy (Appendix AB-I) however it is unclear if specific OMR actions have been isolated and analyzed. These actions should be modeled to confirm the benefit and justify inclusion as a protective action. If there are alternative OMR flows that are equally protective with lesser impacts to water supply they should be considered as part of the Preferred Alternative and reconsulted on.	OMR provides a surrogate indicator for how export pumping at Banks and Jones Pumping Plants influence hydrodynamics in the south Delta. OMR will be calculated using the equation provided in Hutton 2008. If an equation is developed that results in a better representation of OMR flows, and if Reclamation, DWR, NMFS, USFWS, and CDFW agree, then that equation will be updated in calculating the OMR index. Appendix O, Fish and Aquatic Resources Technical Appendix, provides analysis of OMR actions for each of the alternatives, including looking at the zone of influence of different OMR management under different inflow conditions on regional hydrodynamics. Modeling of the different levels of OMR management potentially implemented in the alternatives is performed to consider where OMR management may influence fish present in different regions and reaches of the Delta. Attachment F.4, Delta Smelt Life Cycle Model, and Attachment I.4, Longfin Smelt Life Cycle Model, provide isolated analysis of both Delta and longfin smelt. Hutton, P. 2008. A Model to Estimate Combined Old & Middle River Flows. April. Metropolitan Water District of Southern California.
90-7	The Longfin Larval and Juvenile Protection Action includes scaling additional restrictions based on relative salvage (e.g. 7 days -3500 cfs 14-day -3500 cfs and another 7 day -2500 cfs). What is the	Alternative 1, 3, and 4 do not include relative salvage criteria. Alternative 2 includes these triggers. Reclamation and DWR developed the proposed action (Alternative 2) through a multi-

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	basis of the -3500 cfs OMR when the performance of this is limited and why is the scaled reduction not linear (i.e. -3500 cfs for 7 days then 14 days and then -2500 cfs)? Is there a correlation of juveniles entrained to subsequent adult population abundance? What is the justification for selecting those two stations (809 and 812) and not others? Why is the offramp limited to <5% of combined catch per unit? How does that affect the overall population?	agency team that included CDFW, FWS, and NMFS. Reclamation believes it analyzed a range of reasonable alternatives. See Standard Response 4, Alternatives Development. See Appendix O, Fish and Aquatic Resources Technical Appendix, for analysis. See also Attachment I.8, Particle Tracking Fate Modeling of Larval Smelt Entrainment, and Sections O.4.13, O.5.13, O.6.13, and O.7.13 in Appendix O. Multiple lines of evidence, including literature, observations, and models, are used to evaluate longfin smelt entrainment risk, and identified net negative OMR flows increase entrainment risk (Appendix AB—Chapter 10 Longfin Smelt). Attachment I.8 provides further detail on assumptions underlying the analysis (see Section I.8.2.3 and Section I.8.3).
90-8	1.3 The First Flush and Turbidity Bridge High Flow Offramps should be adjusted. Including a high flow offramp for "first flush" and "turbidity bridge" actions is supported given that most smelt are downstream and nowhere near the Delta pumps in December and January under high flow conditions. A small percentage of them will move into the south Delta to spawn generally starting around mid-February. However, the Preferred Alternative doesn't include justification for why the offramp begins at 10000 cfs (or whether other options might be feasible) other than pointing to a 2008 USFWS offramp criterion and Delta smelt expanded salvage data but it doesn't specify why 10000 cfs was chosen. Additionally, the action is reinstated at 8000 cfs and it isn't clear why there is a 2000 cfs gap.	The offramp of 10,000 was chosen due to the 2008 USFWS Biological Opinion criterion. The 8,000 cfs reinstatement was chosen to allow for additional pumping flexibility, as –5000 OMRI may be difficult to achieve when San Joaquin River flow at Vernalis is above 10,000 cfs. Having the action be reinstated at 8,000 cfs allows for a period of additional export toward the tail end of the high flow event while also avoiding excess entrainment of Delta smelt.
90-9	1.4 The Fall X2 action should be removed from the Preferred Alternative. The U.S. Fish and Wildlife Service (USFWS) draft Biological Opinion (BiOp) which was provided to interested stakeholders for review pursuant to the provisions in the WIIN Act	The Fall X2 action has been removed from Alternative 4. Reclamation can select portions of alternatives in its Record of Decision, if appropriate. The No Action Alternative and Alternative 2 include the Fall X2 provisions as described in the 2019 USFWS

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	stated that the Delta Smelt summer-fall habitat action originally proposed in 2008 and modified in 2019 does not provide the critically required benefit for Delta smelt. The BiOp states that despite previous conclusions the Fall X2 action shows there is no detectable change in survival according to the life cycle analysis. It further states "the Fall X2 action is not anticipated to have observable effects on delta smelt survival." Polansky et al. (2024) used life stage models of Delta smelt to evaluate the potential of various flow augmentation operations on the species' population growth rate [Footnote 2: Polansky L. Mitchell L. & Nobriga M. L. (2024). Identifying minimum freshwater habitat conditions for an endangered fish using life cycle analysis. Conservation Science and Practice 6(5) e13124. https://doi.org/10.1111/ csp2.13124.] . The authors concluded that the Fall X2 measure did not appear to have any measurable benefit to the species.	Biological Opinion. Please refer to Standard Response 11. Fall X2. regarding additional description related to the Summer Fall Habitat Action.
90-10	Given the high-water cost and potential upstream temperature impacts this action should be removed and reconsulted on especially if there are other adaptive alternatives that would provide more benefits. The 2019 BiOp included an adaptive management process for the Delta Smelt Summer and Fall Habitat action and this should be considered as part of the Preferred Alternative especially if alternative actions to Fall X2 need to be considered. Higher summer outflow (i.e. Summer X2) has been proposed as potential alternative however we caution that these life cycle model results should consider if upstream food web dynamics are being modeled accurately and confirm that higher summer flows are truly correlated.	The Fall X2 action has been removed from Alternative 4. Reclamation can select portions of alternatives in its Record of Decision, if appropriate. The No Action Alternative and Alternative 2 include the Fall X2 provisions as in the 2019 USFWS Biological Opinion. Please refer to Standard Response 11, Fall X2, regarding additional descriptions related to the Summer Fall Habitat Action.
90-11	1.5 It is unclear how the Sacramento River Pulse Flow is necessary to avoid jeopardy and if it was fully modeled. The Sacramento River Pulse Flows action includes up to an additional 150 thousand acre-feet (TAF) release (page 3-44). It is unclear how that interacts with the Healthy Rivers and Landscapes	The operation of Shasta Reservoir–specific actions is based on conditions at Shasta Reservoir, not a year-type index. The water-year index includes conditions from the prior year and other watersheds in the valley that may not be applicable. The action includes up to 150 TAF from CVP supplies and 100 TAF from

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	contribution from the Sacramento River Settlement Contractors (SRSC) and how the "up to 150 TAF" is necessary to avoid jeopardy. Additionally, the modeling of this action may not fully evaluate the potential water supply impacts. According to Appendix F (page F.1-1-8) the action was modeled to occur in only Wet and Above Normal year types if Lake Shasta will fill to 4.1 MAF by May 1. The Project Description in the DEIS does not include detail on year types and Lake Shasta storage but simply states it will not be implemented if it doesn't interfere with ability to support coldwater pool management and meet "performance objectives or other anticipated operations of the reservoir" (DEIS page 3-21). This highlights a potential discrepancy between the CalSim modeling and the Preferred Alternative and a potential critical error in estimated available water supply for pulse flows or other management actions in certain year types. There are no references to the numerical modeling or analysis for how this discrepancy was determined and there is not an interpretive statement indicating how uncertainty of reservoir storage volumes or available supply may impact survival of the species.	advancing water to be made available by Sacramento River Settlement Contractor actions under the Healthy Rivers and Landscapes Program for a total of 250 TAF. The CalSim 3 model (overview, methods) and associated results are summarized and fully described in *Appendix F, Modeling*. The 150 TAF is limited by water temperature management and other project purposes, including water supply purposes.
90-12	1.6 The winter- and spring-run Chinook salmon early migration action is based on limited data and lacks justification. This action is based on limited instances of length-at-date (LAD) and genetics. Section I.3.5.1 of Appendix AB-I discusses the uncertainties of species genetics when calculating Chinook salmon loss. Alternative 2 (Preferred Alternative) thresholds were developed using the CDFW calculation method for loss but there isn't clear justification provided in the documentation for how the specific November and December thresholds were calculated. Additionally it is unclear how the percent of Red Bluff juvenile winter-run Chinook salmon Brood Year Total is significant to the population (page 3-49). And why would the same threshold apply to spring-run when it is solely based on Red Bluff winter-run? And	Reclamation and DWR developed Alternative 2 through a multi-agency team that included CDFW, FWS, and NMFS. Reclamation believes it analyzed a range of reasonable alternatives.

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	conversely why would spring-run salvage count against winter-run?	
90-13	1.7 The winter-run Chinook salmon loss thresholds lack justification. When cumulative loss of natural or hatchery winter-run Chinook salmon exceeds 50% or 75% OMR value drops to no more negative than -3500 and -2500 cfs respectively. For these loss thresholds (as percent of the juvenile production estimate [JPE]) what is the statistical justification for reduced OMR values as compared to no more negative than -5000 cfs and how is the percent of JPE trigger affecting the population? If machine learning and/or other models and tools are being used to predict entrainment then it seems prudent to be assessing and managing to a potential range of OMR values rather than a set value of -3500 or -2500 cfs for the respective threshold. We have serious concerns for how loss thresholds are being applied to trigger management actions that will have significant impacts to water supply. The DEIS should clearly disclose the significance of these actions and provide high-quality information so the reader can easily discern how thresholds are developed and understand the justification of intended protective actions. JThe document is incomplete without this information.	Reclamation and DWR developed Alternative 2 through a multi-agency team that included CDFW, FWS, and NMFS. Alternative 4 includes the machine learning model of winter-run Chinook salmon loss. Reclamation believes it analyzed a range of reasonable alternatives. Adaptive management is a part of the proposed action, and therefore new methods potentially may be developed and used.
90-14	1.8 The steelhead weekly distributed loss threshold does not yet have an approved methodology and the thresholds described are not justified. As exemplified this year there needs to be a JPE estimate for steelhead to account for changes in population over time. A weekly fixed threshold (page 3-53) is not biologically performance based. Additionally the document needs to disclose the significance and efficacy of -3500 cfs OMR restriction to the population.	Variations of steelhead loss thresholds have been part of the LTO for over a decade, and Alternatives 2 and 3 include loss thresholds. Multiagency development of Alternative 2 would use weekly fixed loss threshold to provide a criterion that is a surrogate for periods when high loss may occur.
90-15	1.9 Central Valley spring-run Chinook salmon and surrogate threshold are focused on minimization protection. A broader range of alternatives should be evaluated. The Spring-Run	Reclamation considered a range of reasonable alternatives including No Action, Alternative 1, Alternative 3, and Alternative 4. For example, No Action includes spring-run surrogates solely as a

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	Chinook Salmon and Surrogate Thresholds section was included "to provide additional minimization protection for emigrating natural juvenile spring-run Chinook salmon. DWR and Reclamation will restrict exports based on the presence of hatchery produced spring-run and associated yearling late-fall run and young-of-year fall-run Chinook salmon surrogate groups at the CVP and SWP salvage facilities" (Appendix E page 103). Explicitly described as a minimization measure which is not a requirement of ESA what other range of alternatives were considered that may reduce impacts to water supply? How was the 0.25% threshold for each release group determined? What is the statistical significance to the populations? Additionally what is the justification for reduced OMR values as compared to no more negative than -5000 cfs in November and December and no more negative than -3500 cfs beginning January 1st or when OMR management begins? (page 3-53)	component of storm-flexibility, and Alternative 1 does not include spring-run surrogates.
90-16	Finally this section explicitly states that the surrogate methods are intended to be an interim measure (Appendix E page 104). In Appendix E section 5.11.2 describes the replacement model. If the replacement Spring-Run Juvenile Production Estimate and Lifecycle Model will provide biologically based data any fixed threshold and fixed OMR management index should be adaptive to minimize impacts to water supply.	Updates will be implemented in accordance with the adaptive management process outlined in Appendix E, Alternatives, Section E.5.17, Adaptive Management, which provides opportunities for determining management options for best achieving those desired goals which could include considerations related to water supply. Overall, using the adaptive management approach for the JPE framework is anticipated to provide a transparent and documented scientific basis for continuing, modifying, or implementing an alternative action.
90-17	2. Environmental Baseline is inconsistent with law and Reclamation contracts. The environmental baseline used in the Biological Assessment and described in Appendix AB assumes that Reclamation will make deliveries from San Joaquin River to meet Exchange Contractor demands (page 2-5). This baseline incorrectly assumes that there is a level of discretion in taking water from the San Joaquin River to meet these demands.	Terms of the Exchange Contracts and Friant Division Long-term Contracts are part of the environmental baseline for the ESA Section 7 process.

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	Reclamation can only make such deliveries if there are insufficient supplies from the Delta or other sources before delivering water from the San Joaquin River and is inconsistent with the Exchange Contract and Friant Division long-term contracts.	
90-18	Additionally, the environmental baseline states that Reclamation releases water from Friant Dam to the San Joaquin River to meet the Schedule 2 demands of senior water users. This has never been the case unless under flood conditions. When not in flood Schedule 2 deliveries are typically made from the Delta and DMC. Reclamation has only made releases from Friant Dam to meet Exchange Contractor demands during recent critical years. These incorrect assumptions distort the environmental impact analysis in the Biological Assessment and result in more impacts attributed to discretionary actions. The environmental baseline must be revised to include deliveries to the Exchange Contractors from the Delta unless supplies aren't sufficient - this is not discretionary.	Terms of the Exchange Contracts and Friant Division Long-term Contracts are part of the environmental baseline for the ESA Section 7 process.
90-19	3. The reasonably foreseeable potential for changes to Trinity River and Clear Creek operations is improperly omitted. It is evident in Chapter 3 of the DEIS that operations within the Trinity Division are closely coordinated with operations at Shasta and that volume and quality of water moving through Lewiston and Whiskeytown affects conditions in the Sacramento River and Clear Creek. Reclamation is also consulting on Trinity River operations however that consultation process is not occurring simultaneously and NEPA analysis is not anticipated to be complete until at least spring of 2025. Accurate input of the Trinity Division into the CVP is critical for this consultation and should be considered as a connected action and effects of coordinated operations should be detailed as part of the cumulative impact analyses. Depending on the outcome of the Trinity River consultation (and as we understand the current state	The Trinity River Division is part of the CVP. All the alternatives in the EIS include the 2000 Trinity River ROD Flows. Please refer to Standard Response 8, Trinity River Division, for a description of the process for future proposed modifications.

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	of consultation all action alternatives consider decreased deliveries to the CVP) the EIS and associated BiOps on the Long-Term Operations of the CVP and SWP are at risk of being deficient and should consider delay in order to not require subsequent recirculation and additional consultation. Without accurate surface water operations modeling of connected actions and cumulative effects then the impacts to the CVP (and Friant Division contractors) cannot be accurately assessed.	
90-20	4. We are concerned that CalSim3 model does not reflect real-world operations and may be underestimating impacts to the CVP and Friant Division. In reviewing the Calsim3 results Shasta Lake appears to often make releases of water when it has low storage conditions to satisfy CVP demands south of the Delta. Releases for export during low storage conditions do not occur in actual operations. If CalSim does not make releases for export during low storage conditions then storage would be approximately 500 TAF higher in most critical years. This has significant implications to the volume of water needed to meet storage targets temperature management and effects of the proposed alternatives. It is likely all the alternatives are underestimating the water supply impact to the CVP especially south of the Delta including potential increased calls on Friant.	CalSim models of the No Action Alternative and action alternatives for the LTO EIS are intended to be used in a comparative manner, and the assumptions used in each scenario should be taken into account. Calls on Friant Reservoir are not explicitly modeled in CalSim. Shasta Reservoir storage below an index of interest could be interpreted as an indicator of a potential call in real time and can be compared (action alternative to No Action Alternative). Comparing the frequency of low Shasta Reservoir storage is encouraged. One key consideration is that, while TUCPs are represented in the No Action Alternatives, they are not included in all action alternatives. Action alternatives that are simulated with TUCPs show an increase in Shasta Reservoir storage by about 500 TAF in the driest 5% of the years compared to the No Action Alternative and will likely reduce frequency of potential calls to Friant Reservoir.
90-21	5. The water supply impacts of Shasta Reservoir water temperature and storage management are not fully evaluated. We understand that the Calsim modeling assumed up to a 500 TAF reduction in contract deliveries to SRSC in "Bin 3B" years (Appendix F page F.1-1-28). It also references that 280 TAF of reduced SRSC and refuge water deliveries will be put into a "storage account" but provides no explanation of the ultimate	The up to 280 TAF of reduced SRSC deliveries demands are tracked in CalSim. The SRSC water stored can be used by SRSC and would be the first to spill when Shasta fills; it does not affect CVP water supply. Potential transfer of this water was assessed by SRSC; but there seems to be little to no transfer opportunity to develop general model assumptions, and therefore it is not modeled. The SRSC stored water is not carried over for the CVP;

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	dominion of that account. These reduced deliveries result in higher Shasta Lake carryover for the CVP that remains stored in Shasta Lake unless it spills in the subsequent water year. Appendix E states there could be a call on this water as a Voluntary Agreement asset which doesn't appear to be assessed in the modeling. Additionally the analysis does not fully evaluate the potential for SRSC transferring this water to other contractors and potentially underestimates the water supply impact of the Preferred Alternative to those CVP contractors that do not participate in the SRSC transfer program especially if the modeling assumes this supply is carried over for the CVP.	it's kept in a separate account, and it is the first to "spill" and does not reduce CVP water supply. Appendix E, Alternatives, does not state that there could be a call on this water as a voluntary agreement. Section E.5.1.6 does state, "Alternative 2 includes advancing up to 100 TAF in releases from Shasta Reservoir for a spring-pulse in consideration of actions by SRS Contractors to make the water available later in the year," but it does not link this to the SRSC stored water account. Appendix F, Modeling, Section F.1-1.6.5.3 describes a separate storage account for potential VA water savings in dry years that are backed up into Shasta Reservoir for a pulse period in the following year. The stored VA water spills after the SRSC account water but before CVP water so that there is no impact on CVP water supply.
90-22	6. The modeling conducted does not fully evaluate the impacts to groundwater supplies in the Central Valley. We have concerns over the content drafted in Chapter 6 Groundwater of the DEIS. Multiple sections of this chapter reference a 2003 Department of Water Resources (DWR) Bulletin 118 as well as a 2013 DWR California Water Plan both of which have been updated since 2020 and 2023 respectively. Information and references should be updated and corrected to reflect the most current available information including statistics regulations and management of the groundwater resource. NEPA requires high-quality current information.	The Notice of Intent for the LTO EIS was provided February 2021. That was before the 2003 Department of Water Resources (DWR) Bulletin 118 was released (in November 2021) and before the 2013 DWR California Water Plan was released (in 2023). These documents were current at the onset of the EIS development. These updates do not change the analysis of this EIS. Both documents represent reliable information available at the time to understand impacts to groundwater.
90-23	Further information presented related to the Sustainable Groundwater Management Act (SGMA) does not accurately represent the existing status of groundwater sustainability plans or groundwater management throughout the state. For example the groundwater modeling appendix states "Given the fact that GSPs for areas in the Central Valley have not been fully developed and adopted yet the exact details of sustainable management under SGMA for each basin and GWSB are not known" (Page I-	The Sustainable Groundwater Management Act (SGMA) prescribes that Groundwater Sustainability Agencies (GSAs) develop Groundwater Sustainability Plans (GSPs) to bring medium- and high-priority basins into sustainable operation. Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium- and high-priority basins with overdraft conditions or 2042 for medium- and high-priority basins without overdraft. Each GSP that is either currently

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	82). But this is wrong; all basins subject to SGMA in the Central Valley have developed plans and a majority have been approved with a few exceptions in the western San Joaquin and Tulare Basins where subbasin groundwater sustainability agencies have plans that have been deemed inadequate by DWR and are now going through probationary hearings with the State Water Resources Control Board. In fact other resource sections such as regional economics utilize data included in groundwater sustainability plans (GSPs) for resource area analysis. We understand that the groundwater model utilized C2VSimFG has limitations and developing accurate assumptions related to regional or local groundwater management under SGMA may not be possible. However the current status of groundwater management should at least be accurately represented in describing the areas of analysis including subbasin designations GSP status and critical sustainability indicators for each and more appropriately modeling results should be post-processed and compared to defined sustainable yields or measurable objectives for each subbasin to understand if operations under the Preferred Alternative further impact sustainable management of the resource communities that rely on groundwater and critical infrastructure.	being developed or has been developed is specific to each groundwater basin/subbasin. The C2VSim groundwater model does not include specific actions for each GSP relative to parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decisions regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The C2VSim model represents effects to groundwater resources that may be more substantial than when GSP provisions are fully enacted. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives. Each of the alternatives simulated in the EIS are simulated with the same assumptions regarding SGMA. Therefore, the comparison of each alternative to the No Action Alternative is comparable to each other to determine relative changes in groundwater resources. Also refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS.
90-24	The Preferred Alternative undermines the strategic groundwater management that has been defined in GSPs as required by SGMA. As stated in the DEIS the Preferred Alternative in all year types would reduce San Joaquin Valley CVP agricultural deliveries by	Please refer to *Chapter* 6, Groundwater, and *Appendix I, Groundwater* Technical Appendix, for impacts associated with the alternatives. See also Appendix Y, Cumulative Impacts Technical Appendix, for past, current, and future water conservation and

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	143 TAF per year (Appendix H Tables H-17 & H-29). Significant reductions in available surface water supplies will directly impact and disrupt how groundwater sustainability agencies (GSAs) and water users have planned to manage groundwater supplies in the region. Water budgets defined in GSPs will need to be completely re-evaluated. The DEIS conveniently assumes the reduced surface water deliveries will be made up through increased groundwater pumping however does not assess how the simulated change in groundwater pumping may further contribute to overdraft conditions in the San Joaquin Valley (page 6-5). Investments or increased investments in groundwater storage and recovery will not be possible or will be financially infeasible if surface water supplies are decreased and project yield benefits are diminished. Accurately describing the current status of groundwater management throughout the state is important and we emphasize this because communities in the San Joaquin Valley both on the east and west sides are facing a reckoning as they work to comply with SGMA. Applied approach analyses methodologies and potential impacts to groundwater associated with the Preferred Alternative are not described in enough detail in the DEIS to appropriately assess the magnitude of regional impacts.	groundwater storage and recovery projects in San Joaquin River basin. The C2VSim groundwater model does not include specific actions for each GSP relative to parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decisions regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The C2VSim model represents effects groundwater resources that may be more substantial than when GSP provisions are fully enacted. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives.
90-25	6.1 The DEIS and the attached modeling appendix and modeling attachment are inadequate in describing modeling methodology and approach.C2VSimFG is not described in any detail including how the model's 21 subregions are grouped or how results are quantified and summed to represent the presented values for groundwater pumping and groundwater-surface water interaction for the Trinity Region Central Valley and Southern California. Besides briefly describing that the model quantifies pumping based on available surface water supply (from CalSim 3) and land use cropping data no other model assumptions or inputs are	The analysis provided in Chapter 6, Groundwater, and Appendix I, Groundwater Technical Appendix, indicates the potential increases and decreases in groundwater levels for each of the alternatives as compared to the No Action Alternative. See Section I.2.1, Methods and Tools, for details on methods and tools used to evaluate potential effects. Please also see Appendix I, Groundwater Technical Appendix, Attachment I-1, C2VSimFG Results for Model Subregions, for simulated groundwater pumping and groundwater-surface water interaction flow for each subregion defined in the C2VSimFG model.

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	described. Further the specific assumptions applied to quantify absolute changes to groundwater-surface water interactions should be described. How does the model or how is it determined from modeled data when groundwater is flowing to surface water or when surface water is moving to groundwater? How is the absolute annual value determined? Model approach and methodology including all model assumptions and uncertainties should clearly be documented in the modeling appendix.Although C2VSimFG is a useful tool for modeling the entire area of the Central Valley areas within the Friant Division particularly districts in the Kern Basin have identified analysis gaps. C2VSIM has challenges accurately modeling groundwater in the boundary areas of the Kern Basin. Districts and GSAs in the Kern Basin have developed and completed two significant updates of C2VSim. Updates target Kern River flows and intermittent streams. DWR has requested the assumptions so that they can be incorporated into the publicly available version. We note this example because it represents a known uncertainty in the model that should be acknowledged in the documentation.	C2VSimFG is appropriate for this project's analysis for the geographic scale of the potential effects and the complexity of linking to surface water analysis as completed in Calsim 3. Individual models of certain areas within the Central Valley could have capabilities to incorporate the complexity of Calsim 3 and SGMA all at the same time, though they would not be comprehensive for the scale of this project. It should be noted that while groundwater levels may have an annual average increase (or decrease), there may be periods of decreases (or increases) during the model simulation. Also refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS and Standard Response 6, Hydrologic Modeling and Surface Water Resources, regarding hydrologic modeling.
90-26	6.2 The DEIS presents results that are misleading and risk underestimating acute regional or local impacts associated with the implementation of the Preferred Alternative. It is understood that SGMA is not included as part of the groundwater analysis and that groundwater pumping in C2VSIMFG is quantified by looking at the difference between cropping demands and available surface water supply. However results presented in the main body of the DEIS are misleading and are only presented for the entire Central Valley from Redbluff through the Tule Region. The modeling appendix states "Groundwater flow is dependent on the hydrologic boundaries of GWBs and GWSBs rather than political boundaries such as county. Therefore the results presented in this section are presented for the Trinity region	The Draft EIS assumes implementation of SGMA. The analysis provided in *Chapter 6, Groundwater*, and *Appendix I, Groundwater Technical Appendix*, indicates the potential increases and decreases in groundwater levels for each of the alternatives as compared to the No Action Alternative. C2VSimFG is appropriate for this project's analysis for the geographic scale of the potential effects and the complexity of linking to surface water analysis as completed in CalSim 3. Individual models of certain areas within the Central Valley could have capabilities to incorporate the complexity of CalSim 3 and SGMA all at the same time, though they would not be comprehensive for the scale of this project.

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	Central Valley and Southern California" (page I-83). But the broad areas for which results are presented also do not represent groundwater basins or subbasins and by presenting it this way convolute the modeling results that are specific to water supply sources and cropping in different areas of the state or even within regions. For example results provided for average change to groundwater pumping in the Central Valley for all phases of Alternative 2 range from .2-.5% (24- 67 thousand acre-feet (TAF)). A less than 1% change may seem reasonable but that represents an area of over 12 million acres (DWR Volume I -C2VSimCG Model Report 2021) and it is not described how this value is quantified from the results of all 21 model subregions. When you start to assess the specific subregion results utilizing the tables provided in Attachment 1 to the modeling appendix you see that for Alternative 2 subregions south of the delta (subregion 14) are seeing increases in pumping above the No Action Alternative ranging from 11727 42472 acre-feet (Table I.1-14). For this specific subregion under the Alternative 2 phases the model simulates a 1.4% to 8.2% change with a maximum change of 126043 acre-feet. This change in groundwater pumping is significant and under SGMA it is unlikely or uncertain that groundwater can be utilized to meet irrigation demand. The results as presented in the DEIS are misleading and as a result understate the impacts to groundwater resources. Results should be summarized and interpreted by basin and subbasin in the main body of the DEIS so water managers and groundwater sustainability agencies can accurately understand potential impacts against their local management plans.	
90-27	7. The modeling conducted does not fully evaluate the impacts to interconnected surface waters. We are concerned with the applied modeling methodology and presented results for groundwater-surface water interactions. Groundwater-surface water	Refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding the adequacy of the analysis provided in the EIS. Habitat conditions are expected to be similar to habitat conditions experienced under the No Action Alternatives.

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	interactions are simulated using C2VSimFG. The model output produces a monthly groundwater-surface water flux for each C2VSimFG water balance subregion however this is not described in the documentation and results are presented as absolute annual values for entire regions. Simulated changes in groundwater-surface water interactions in both the main body of the DEIS and Appendix I are only presented for the entire Central Valley. Numerical results by alternative water year type and C2VsimFG subregion are presented in Attachment 1 to Appendix I but even these results should be presented in more detail. Groundwater-surface water interactions should be synthesized and summarized on a monthly time step to accurately capture the temporal trends and directional flow at the groundwater-surface water interface. In addition results from C2VSimFG subregions should be correlated with major streams and rivers to better estimate impacts to riparian water resources that could affect terrestrial and aquatic species agriculture and communities. We want to emphasize that without a proper analysis of interconnected surface water that quantifies groundwater-surface water fluxes seasonally and by tributary it is impossible to accurately assess changes in water supply and quality and is likely that the impacts to water users specifically south of the Delta are underestimated. If the model simulates that agriculture in the Sacramento River Basin increases pumping to meet demand because of changes to surface water supplies which subsequently contributes to the depletion of instream flows and impacts temperature and critical habitat then additional upstream releases may be necessary to meet instream requirements affecting total storage and available supply. The current analysis is incomplete groundwater-surface water interactions should be quantified seasonally and by tributary and then correlated or compared to critical management periods and proposed management actions to fully evaluate impacts.	The analysis provided in *Chapter 6, Groundwater*, and *Appendix I, Groundwater Technical Appendix*, indicates the potential increases and decreases in groundwater levels for each of the alternatives as compared to the No Action Alternative. The location and timing of the changes are shown in the figures in Appendix I. As noted in Appendix I, decreases in groundwater levels below historical low levels have the potential to induce additional subsidence in areas that have geologic conditions favorable to subsidence. It should be noted that while groundwater levels may have an annual average increase (or decrease), there may be periods of decreases (or increases) during the model simulation. C2VSimFG is appropriate for this project's analysis for the geographic scale of the potential effects and the complexity of linking to surface water analysis as completed in CalSim 3. Individual models of certain areas within the Central Valley could have capabilities to incorporate the complexity of CalSim 3 and SGMA all at the same time, though they would not be comprehensive for the scale of this project.

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90-28	8. The disclosed impacts to Agriculture and Land Use are concerning and misleading. First the results that are shown in Chapter 15 of the DEIS (Figures 15-1 and 15-2) are misleading. These figures show annual change to irrigated acres for the entire project area however when you look at the more detailed breakdown in Appendix R, a disproportionate number of the acres lost under Alternative 2 are attributed to the San Joaquin River basin and thus the document does not accurately disclose the severity of impacts by region (in addition to the unaccounted impacts from deficient surface water analyses described previously).Appendix R shows results from the SWAP model by river basin and alternative. For Alternative 2 and focusing on the San Joaquin River basin the model shows a loss of up to 47732 acres of crops and a significant decrease in crop productivity (Tables R-37 through R-40). Although we appreciate that the SWAP model incorporates SGMA sustainable yield limitations as well as a Perennial Crop Risk Management Model tool to best simulate current regulatory requirements and risk-based investment decision making we are still concerned that the change and impacts to irrigated acreage and crop productivity is underestimated. Under Alternative 2 agricultural water users in the San Joaquin River basin will lose up to 12% or 128 thousand acre-feet of their water supply annually under dry and critical year types (Table R-29). As growers continue to grapple with increasing regulatory requirements decreasing and uncertain water supply rising costs of production with decreasing productivity we are concerned that the resulting impacts of the Preferred Alternative and cumulative effects are much greater than disclosed.	Please refer to Standard Response 5, *Adequacy of Analysis and Mitigation*, regarding the methodology and scientific accuracy of the Draft EIS. Reclamation used reliable data and scientific information resources throughout the EIS (40 CFR § 1502.23) including the models mentioned by the commenter.
90-29	Further the suggested mitigation measure to reduce impacts on agricultural land Ag-1 Diversify Water Portfolios is unrealistic to address the impacts and anticipated land-use changes associated with the Preferred Alternative. Although it may seem reasonable	The Draft EIS explains that this is a voluntary measure in Chapter 15, Land Use and Agricultural Resources, and associated Appendix R on pages 15-10 and R-69, respectively.

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	to suggest that water contractors diversify their water portfolios by engaging in water markets and water transfers or investing in in-lieu recharge activities to alleviate reliance on exported supplies from the Delta or other contract supplies this is not a practical solution or an economically viable solution. Water contractors in the San Joaquin Valley have already invested extraordinary resources to diversify their water supply portfolios and make their portfolios resilient in the face of increasing regulation and water supply uncertainty. They have modernized their production and irrigation methods to ensure maximum efficiency; they have built recharge basins and infrastructure to take advantage of wet year excesses to sustainably manage groundwater resources; and they have built relationships and partnerships up and down the state to ensure that any allocated supply is put to beneficial use. Under Alternative 2 contractors will need to leverage these investments and partnerships with even less supply to go around. To suggest that additional diversification be pursued is disingenuous. Additional alternatives to the Preferred Alternative should be considered to address this significant and unmitigated impact.	Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding Reclamation's process of developing and approving the ROD using the appropriate mitigation measures discussed in the EIS. Please also refer to Appendix D, Mitigation Measures, regarding discussions of how Mitigation Measure AG-1 could be implemented. Reclamation acknowledges that many contractors have invested in diversification of their water portfolios to increase resiliency and address water supply uncertainty, including modernizing production and irrigation methods and building recharge basins and infrastructure to take advantage of wet years to sustainably manage groundwater resources. Language was added to the mitigation measure to provide for consideration of conservation plans and actions.
90-30	9. The economic analysis completed suggests disproportionate impacts to disadvantaged communities. We are concerned that the Preferred Alternative impacts south of the Delta and to the San Joaquin Valley are underestimated especially for agricultural water users which will put undo strain on disadvantaged communities and drinking water supplies. The modeled agricultural water supply costs for the San Joaquin River region show up to a $383 million dollar loss in revenue under average conditions and that gets even worse under dry conditions (Table 14-6). The simulated number of jobs labor income and revenue lost for the region will be devastating. These simulated impacts are likely to further drive the economic disparity observed within	Table 14-6, Agricultural Water Supply Costs Related to Regional Economic Effects under the Action Alternatives in Comparison to the No Action Alternative for San Joaquin River Region, in Chapter 14, Regional Economics, shows that the revenue changes under Alternative 2, under average conditions, range from a loss of $383 million to a gain of $15 million. Under dry conditions, revenue losses range from $196 to $421 million. Reclamation analyzed impacts on low-income and minority communities in *Chapter 17, Environmental Justice, and Appendix T, Environmental Justice Technical Appendix,* of the Draft EIS.

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	the region and will have a disproportionate impact on disadvantaged communities farm works and small family farmers who are not able to continue to make high-risk investments and growing costs of irrigating their land with a decreasing and uncertain water supply.	Reclamation included two mitigation measures for Environmental Justice, including one of particular relevance to this comment: Mitigation Measure EJ-2, Reduce Effects of Employment Loss: To assist in offsetting job losses in the agricultural sector, Reclamation will: (1) identify opportunities to assist and support vocational training at schools in affected communities, and (2) develop internship program(s) and advertise in affected communities near the Reclamation offices.
90-31	10. Groundwater subsidence is not properly evaluated to inform economic impact analysis. We recognize that the DEIS acknowledges potential subsidence related to decreases in groundwater levels however this analysis is inadequate to inform localized impacts especially to critical water delivery infrastructure including the California Aqueduct San Luis Canal Delta- Mendota Canal and Friant-Kern Canal. Potential subsidence is also not included in the regional economic analysis. Subsidence is a critical issue in the Valley and the Preferred Alternative is showing a decrease in surface water deliveries and an increase in groundwater pumping in order to meet demand and thus subsidence in critical parts of the state will continue and rates of subsidence will likely increase further compromising conveyance infrastructure and the reliability of water deliveries to the San Joaquin Valley and Southern California. Mitigating subsidence and repairing critical water conveyance infrastructure is financially burdensome to water users and communities that rely on these facilities. Subsidence and the economic impacts related to subsidence must be quantified and disclosed as part of this EIS.	Reclamation adequately and thoroughly analyzed groundwater subsidence in *Chapter 6, Groundwater Resources,* and associated *Appendix I*. Potential economic impacts for potential subsidence issues due to implementation of an alternative would be anticipated to be highly localized and would not be anticipated to result in impacts that would rise to the regional scale. Furthermore, costs associated with canal maintenance are not a result of LTO. Groundwater subsidence is also qualitatively analyzed in *Appendix Y, Cumulative Effects,* and summarized in Appendix I and Chapter 6.
90-32	11. The analysis performed to evaluate environmental justice impacts is incomplete. We are concerned that the analysis completed to quantify environmental justice impacts is inadequate and thus incomplete. The DEIS vaguely discusses	Reclamation analyzed impacts on low-income and minority communities in *Chapter 17, Environmental Justice,* and *Appendix T, Environmental Justice Technical Appendix,* of the Draft EIS.

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	potential disproportionate economic effects on minority or low-income populations related to decreases in groundwater levels and increased subsidence (page 17-5). As discussed in previous comments simulated reductions to surface water deliveries in the San Joaquin Valley and resulting changes to groundwater pumping will put an undo strain on disadvantaged communities in the region.	Reclamation included two mitigation measures for environmental justice: *Mitigation Measure EJ-1, Increase Participation with Tribal, Minority, and Low-Income Populations*, would require that Reclamation identify opportunities to gather Tribal Indigenous Knowledge for consideration in future Reclamation projects and to include tribal interests and low-income/minority advocacy groups in affected communities to review and provide input on compliance documentation. *Mitigation Measure EJ-2, Reduce Effects of Employment Loss*, would require assisting in offsetting agricultural sector job losses.
90-33	Appendix T claims that its possible that "decreases in groundwater elevation could reduce water availability at certain private wells" but then goes on to claim that well depths in the San Joaquin Valley are unknown and that local impacts could not be determined (page T-23). Even if specific well depths are unknown every GSP in the San Joaquin Valley defines minimum thresholds to protect domestic wells. Groundwater level results from C2VsimFG should be compared to regional minimum thresholds to understand if domestic wells will be impacted putting undo strain on disadvantaged communities that depend on groundwater.	Appendix I, *Groundwater Technical Appendix,* provides simulated changes in the groundwater table for all 92 C2VsimFG model "nodes." The GSPs available at the time of this analysis were used to gain general understanding of regional depths; see Appendix I. However, many GSPs are at different stages of preparation. Under SGMA, groundwater basins are not required to be in sustainable operations until 2040. The Sustainable Groundwater Management Act (SGMA) prescribes that Groundwater Sustainability Agencies (GSAs) develop Groundwater Sustainability Plans (GSPs) to bring medium- and high-priority basins into sustainable operation. Under SGMA, groundwater basins are not required to be in sustainable operation until 2040 for medium- and high-priority basins with overdraft conditions or 2042 for medium- and high-priority basins without overdraft. Each GSP that is either currently being developed or has been developed is specific to each groundwater basin/subbasin. The C2VSim groundwater model does not include specific actions for each GSP relative to

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		parameters such as maximum groundwater pumping or minimum operational groundwater levels. GSAs will make individual management decisions regarding basin operations as conditions warrant. A single management strategy does not exist for each GSP and would be difficult to pre-determine for each groundwater basin/subbasin with a GSP in place or in development. The C2VSim model represents effects on groundwater resources that may be more substantial than when GSP provisions are fully enacted. The C2VSim simulations, therefore, represent maximum effects to groundwater resources. While it is true that under SMGA less groundwater is anticipated to be available for beneficial uses than under current circumstances, effects of implementing SGMA are not effects of the alternatives. Each of the alternatives simulated in the EIS are simulated with the same assumptions regarding SGMA. There is uncertainty in well depths and how that impacts disadvantaged communities. This uncertainty has been acknowledged in Chapter 17, *Environmental Justice,* of the final EIS.
90-34	Additionally the environmental justice analysis does not consider the health effects related to decreases in groundwater levels and Appendix T claims that there are no human health effects related to the operations expected under Alternative 2 (Preferred Alternative) (page T-26). But this statement is shortsighted if operations under the Preferred Alternative deliver less agricultural water to the San Joaquin Valley leading to additional groundwater pumping and more domestic wells to go dry there would be a health effect that would disproportionally impact minority or low-	The C2VSimFG model may overestimate the amount of groundwater pumping resulting from an alternative depending on the area, since limitations to groundwater pumping may be imposed as part of a local GSP. Additional text was added to the Methods and Tools sections (Chapter 6, Groundwater, Section 6.2 and Appendix I, Groundwater Technical Appendix, Section I.2.1) discussing this limitation for the public Draft EIS.

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	income populations. This effect must be considered as part of the environmental justice analysis.	Reclamation acknowledges there is uncertainty in how changes in well depths associated with the alternatives may affect disadvantaged communities. This uncertainty has been acknowledged in Chapter 17, *Environmental Justice,* of the final EIS.
90-35	In conclusion FWA has significant concerns with the DEIS and the proposed Preferred Alternative. The DEIS fails to provide a reasonable range of alternatives and sufficient level of impact analysis required by NEPA. We are very concerned with the magnitude of potentially significant impacts to surface water and groundwater supplies and agricultural resources of the Preferred Alternative and the failure of Reclamation to take a hard look at other alternatives that could achieve the same or nearly the same environmental outcomes at a significantly lesser water cost to CVP contractors.	Please refer to Standard Response 4, Alternatives Formulation, for information on the rigorous approach that Reclamation undertook in developing the range of reasonable alternatives. Attachment 1 to Appendix I, Groundwater Technical Appendix, was developed to provide additional clarity of changes through the Central Valley. This attachment includes simulated results for each C2VSim subregion (shown in Figure I.2-1). The "Central Coast Region" was added to the analysis discussion for the public Draft EIS. The C2VSim model does not simulate local groundwater pumping limitations that may be in place per GSPs and SGMA. The model may overestimate the amount of groundwater pumping resulting from an alternative depending on the area. Additional text was added to the Methods and Tools sections (Section 6.2 in Chapter 6 and Section I.2.1) discussing this limitation for the public Draft EIS. Please refer to Chapter 5, Water Supply, and Appendix H, Water Supply Technical Appendix, for further detail.
90-36	Dear Reclamation Please see attached comments from FWA and each of its member agencies on the subject DEIS. Thank you for the opportunity to review and provide comments	Reclamation appreciates comments and review by interested parties.
90-37	ATTACHMENT 1Appendix AList of Friant Water Authority Member AgenciesArvin Edison Water Storage DistrictChowchilla Water DistrictCity of FresnoDelano-Earlimart Irrigation DistrictExeter Irrigation DistrictFresno Irrigation DistrictHills Valley Irrigation	This comment provides background information about the commenter.

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	DistrictIvanhoe Irrigation DistrictKaweah Delta Water Conservation DistrictKern-Tulare Water DistrictLindmore Irrigation DistrictLindsay-Strathmore Irrigation DistrictLower Tule Irrigation DistrictOrange Cove Irrigation DistrictMadera Irrigation DistrictPixley Irrigation DistrictPorterville Irrigation DistrictSaucelito Irrigation DistrictShafter-Wasco Irrigation DistrictTea Pot Dome Water DistrictTerra Bella Irrigation DistrictTulare Irrigation District	

Table 4-91. Letter No. 91

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91-1	California Water Impact Network (CWIN): Supporting Documents as Referenced in Comments Submitted July 13 2023 Re: Long Term Operations NRDC et al. Scoping Comments Regarding Notice of Preparation of an Environmental Impact Report for Long-Term Operations of the State Water Project (July 13 2023) [Attachment 3]	Please refer to Standard Response 1, Responses to General Comments and Comments about Public Outreach regarding the scoping process.
91-2	Re: Delta Conveyance Project Friends of the River et al. Comments on Delta Conveyance Project Draft Environmental Impact Report (December 15 2022) [Attachment 2] CWIN Comments on EIS of the Delta Conveyance Project (March 15 2023) [Attachment 4]	This attachment is provided in support of the comments included in this letter. Reclamation has reviewed these comments which are relevant to the Department of Water Resources' Delta Conveyance Project EIR. Please refer to Appendix Z, Delta Conveyance Operations regarding how Reclamation has considered the Delta Conveyance Project in this EIS. DWR has issued a final EIR and responses to comments are provided on the project website, https://www.deltaconveyanceproject.com/planning-processes/california-environmental-quality-act/final-eir/final-eir-document.
91-3	Sierra Club et al. Supplemental Comments on Delta Conveyance Project Draft Environmental Impact Report (June 29 2023) [Attachment 5] Sierra Club et al. Supplemental Comments on Delta Conveyance Project Draft Environmental Impact Report (November 21 2023) [Attachment 6] Sierra Club et al. Supplemental Comments on USACE Draft EIS for the Delta Conveyance Project (January 17 2024) [Attachment 7]	This attachment is provided in support of the comments included in this letter. Reclamation has reviewed these comments which are relevant to the Department of Water Resources' Delta Conveyance Project EIR. Please refer to Appendix Z, Delta Conveyance Operations regarding how Reclamation has considered the Delta Conveyance Project in this EIS. DWR has issued a final EIR and responses to comments are provided on the project website, https://www.deltaconveyanceproject.com/planning-processes/california-environmental-quality-act/final-eir/final-

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		eir-document.
91-4	Attachment 1: Sierra Club et al. letter RE: Comments on the Draft Environmental Impact Report for the Delta Conveyance Project (December 16 2022)	This attachment is provided in support of the comments included in this letter. Reclamation has reviewed these comments which are relevant to the Department of Water Resources' Delta Conveyance Project EIR. Please refer to Appendix Z, Delta Conveyance Operations regarding how Reclamation has considered the Delta Conveyance Project in this EIS. DWR has issued a final EIR and responses to comments are provided on the project website, https://www.deltaconveyanceproject.com/planning-processes/california-environmental-quality-act/final-eir/final-eir-document.
91-5	[See Attachment 2]	This attachment is provided in support of the comments included in this letter. Reclamation has reviewed these comments which are relevant to the Department of Water Resources' Delta Conveyance Project EIR. Please refer to Appendix Z, Delta Conveyance Operations regarding how Reclamation has considered the Delta Conveyance Project in this EIS. DWR has issued a final EIR and responses to comments are provided on the project website, https://www.deltaconveyanceproject.com/planning-processes/california-environmental-quality-act/final-eir/final-eir-document.
91-6	[See Attachment 3]	This attachment is provided in support of the comments included in this letter. Reclamation has reviewed these comments which are relevant to the Department of Water Resources' Delta Conveyance Project EIR. Please refer to Appendix Z, Delta Conveyance Operations regarding how Reclamation has considered the Delta Conveyance Project in this EIS. DWR has issued a final EIR and responses to comments are provided on the project website,

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		https://www.deltaconveyanceproject.com/planning-processes/california-environmental-quality-act/final-eir/final-eir-document.
91-7	Attachment 8: Sierra Club, et al., Supplemental Comments on USACE Draft EIS for the Delta Conveyance Project (February 26, 2024)	This attachment is provided in support of the comments included in this letter. Reclamation has reviewed these comments which are relevant to the Department of Water Resources' Delta Conveyance Project EIR. Please refer to Appendix Z, Delta Conveyance Operations regarding how Reclamation has considered the Delta Conveyance Project in this EIS. DWR has issued a final EIR and responses to comments are provided on the project website, https://www.deltaconveyanceproject.com/planning-processes/california-environmental-quality-act/final-eir/final-eir-document.
91-8	Attachment 9: Sierra Club, et al. v. California Department of Water Resources, Verified Petition and Complaint filed in Sacramento County Superior Court (January 19, 2024)	This attachment is provided in support of the comments included in this letter. Reclamation has reviewed these comments which are relevant to the Department of Water Resources' Delta Conveyance Project EIR. Please refer to Appendix Z, Delta Conveyance Operations regarding how Reclamation has considered the Delta Conveyance Project in this EIS. DWR has issued a final EIR and responses to comments are provided on the project website, https://www.deltaconveyanceproject.com/planning-processes/california-environmental-quality-act/final-eir/final-eir-document.
91-9	Attachment 10: CSPA, et al. Comments on Draft Environmental Impact Report/Draft Environmental Impact Statement for the Sites Reservoir Project (January 13, 2018)	This attachment is provided in support of the comments included in this letter. Reclamation has reviewed these comments which are relevant to the Department of Water Resources' Delta Conveyance Project EIR. Please refer to Appendix AA, Sites Reservoir Operations regarding how Reclamation has considered the Delta Conveyance Project in this EIS. DWR has issued a final EIR and responses to

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		comments are provided on the project website, https://www.deltaconveyanceproject.com/planning-processes/california-environmental-quality-act/final-eir/final-eir-document.
91-10	Attachment 11: CSPA, et al. Protest filed in State Water Resources Control Board Re: Sites Reservoir Project (August 31, 2023)	This attachment is provided in support of the comments included in this letter. Reclamation has reviewed these comments which are relevant to the Department of Water Resources' Delta Conveyance Project EIR. Please refer to Appendix AA, Sites Reservoir Operations regarding how Reclamation has considered the Delta Conveyance Project in this EIS. DWR has issued a final EIR and responses to comments are provided on the project website, https://www.deltaconveyanceproject.com/planning-processes/california-environmental-quality-act/final-eir/final-eir-document.
91-11	California Water Impact Network (CWIN): Supporting Documents as Referenced in Comments Submitted July 13 20231. NRDC et al. Scoping Comments Regarding Notice of Preparation of an Environmental Impact Report for Long-Term Operations of the State Water Project (July 13 2023) 2. Friends of the River et al. Comments on Delta Conveyance Project Draft Environmental Impact Report (December 15 2022) 3. CWIN Comments on EIS of the Delta Conveyance Project (March 15 2023) 4. Sierra Club et al. Supplemental Comments on Delta Conveyance Project Draft Environmental Impact Report (June 29 2023) 5. Sierra Club et al. Supplemental Comments on Delta Conveyance Project Draft Environmental Impact Report (November 21 2023) 6. Sierra Club et al. Supplemental Comments on USACE Draft EIS for the Delta Conveyance Project (January 17 2024) 7. Sierra Club et al. Supplemental Comments on USACE Draft EIS for the Delta Conveyance Project (February 26 2024) 8. Sierra Club et al. v. California Department of Water Resources Verified Petition and	Reference materials are noted, but they are not a material comment on this Draft EIS and are not directly applicable.

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	Complaint filed in Sacramento County Superior Court (January 19 2024) 9. CSPA et al. Comments on Draft Environmental Impact Report/Draft Environmental Impact Statement for the Sites Reservoir Project (January 13 2018) 10. CSPA et al. Protest filed in State Water Resources Control Board Re: Sites Reservoir Project (August 31 2023)	
91-12	[See Attachment 1]	Reference materials are noted, but they are not a material comment on this Draft EIS and are not directly applicable.
91-13	[See Attachment 2]	Reference materials are noted, but they are not a material comment on this Draft EIS and are not directly applicable.
91-14	Like the EIR prepared by the sponsor of this proposed project the EIS suffers from key deficiencies in base assumptions. Most significantly it fails to analyze the operations of the proposed project given applicable statutes and guidelines and their possible contravention; it overstates impacts in the No Action Alternative analysis; it ignores key regulatory proceedings already underway; it defines the geographic scope for analysis too narrowly; and it reaches unsupported conclusions about the project's benefits and costs [Footnote: NRDC et. at. Comments on Draft Environmental Impact Statement for the Delta Conveyance Project February 16 2023]. These errors and omissions clearly are calculated to gin up support for the proposed project and contravene NEPA requirements. They essentially render the document use- less as an objective analytical tool and they must be remedied. Further the EIS must consider serious proposals for California's water future that do not focus on remodeled and expanded Delta conveyance infrastructure. One such proposal is the Environmental Water Caucus (EWC) report which describes a suite of policy and management approaches based on the state's public trust protection responsibilities. [Footnote 2: https://static1.squarespace.com/static/59ee697fa9db0955b9b1c0ba/t/63b37bbdfd-c2740ec4c42818/1672707007103/EWC-	Please refer to Standard Response 2, Related Regulatory Processes. Refer to Standard Response 5, Adequacy of Analysis and Mitigation, for additional information. The geographic scope of the analysis includes CVP service areas and CVP dams, power plants, diversions, canals, gates, and related federal facilities located on Clear Creek, the Trinity, Sacramento, American, Stanislaus, and San Joaquin Rivers, and in the Sacramento–San Joaquin Delta (Delta). The study area includes SWP service areas downstream of the Feather River and SWP facilities in the Delta, Cache Slough Complex, and Suisun Marsh. Operations of the Oroville Reservoir and Oroville Dam are not addressed as part study area. None of the alternatives analyzed in the EIS rely on remodeled or expanded infrastructure. Please refer to Standard Response 4, Alternatives Formulation, for alternative development and screening criteria.

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	Report2022.pdf accessed March 6 2023.] The EWC report was submitted as part of C-WIN's comments on the EIR.	
91-15	Further comments follow: The EIS reflects an apples and oranges approach that inappropriately compares the No Action Alternative to the Action Alternatives. In the Project Description and Alternatives Chapter (Chapter 2) the EIS describes alternatives that were eliminated in the initial screening and the reasons for their elimination: The "portfolio approach without new water conveyance facilities" alternative was eliminated due to an assessed lack of climate resiliency and insufficient water supply reliability (2-13). But the No Action Alternative defined by the EIS is essentially the same alternative: a variety of new regional supply and demand management projects that are generally understood as a "portfolio approach." Thus prior to any actual analysis of the impacts the EIS has inappropriately pre-determined that an alternative to the proposed project is not viable. When describing impacts associated with the No Action Alternative the EIS assumes those impacts would only occur if the proposed Delta Conveyance Project (DCP or Project) is not built. This supposition is directly contradicted by voluminous evidence indicating regional water supply and reliability projects will be completed independent of DCP construction. Water agencies are moving forward with regional projects precisely because climate change impacts and regulatory requirements make them essential for water supply reliability whether the DCP is completed and operational by 2040 or not. Therefore the EIS must either include evaluation of the impacts from these regional initiatives as part of the analysis of the Project or it must speculate about the additional regional projects that might be pursued if the Project is not completed or does not deliver as much water as projected. What the EIS cannot do is present a false dichotomy concluding impacts from regional supply and demand management projects will only occur if the Project is not built. Considered in	The No Action Alternative described is not consistent with the No Action Alternative described in *Chapter 3, Alternatives,* and *Appendix E, Alternatives*. Also, please refer to Standard Response 4, Alternative Formulation, regarding the rigorous approach Reclamation undertook in the development of Alternatives. Refer to Standard Response 2, Related Regulatory Processes.

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	concert multiple options offer South State contractors a viable alternative to Northern California water. These include groundwater recharge management and recovery; water transfers and exchanges; wastewater recycling; the retirement of impaired agricultural lands; development of regional reservoirs; permanent and broad-based conservation programs; and desalination.	
91-16	The EIS ignores or minimizes three key regulatory proceedings and processes that are critical to understanding the environmental conditions and consequences of the Project. Unlike the EIR the EIS incorporates the Water Quality Control Plan (WQCP) for the Bay-Delta; this would constitute a regulatory action that could improve environmental benchmarks through in-stream flow requirements that would enhance water quality. However the EIS does not account for those requirements when considering water supply scenarios in Section 3.22.2 (Environmental Consequences). This omission and subsequent referral to the EIR (which ignores the WQCP completely) infuses the EIS with a spurious semblance of reliability especially for dry and critically dry periods.	Alternative 3 is consistent with the SWRCB Basin Plan effort. Chapter 3, Alternatives, of the Draft EIS provides alternatives descriptions and not the description of environmental consequences. Thus, it looks like that comment is in reference to a different environmental compliance document. Please refer to Chapters 4–22 for the impact analysis for the alternatives described in the Draft EIS.
91-17	Since the last WQCP update in 1995 environmental conditions in the Bay-Delta have deteriorated dramatically. Therefore it is reasonable for the EIS to project higher in-stream flow requirements and a commensurate reduction in allowable deliveries by the SWP and CVP. The probable reduction in allowable deliveries foreshadows significant socioeconomic and environmental justice impacts; these are directly related to the likelihood of higher costs per acre-foot of delivered water and higher costs associated with increased investments in regional storage and delivery projects designed to provide supply resiliency when SWP and CVP deliveries are low.	Chapter 5, Water Supply, describes the impacts of the alternatives to water supply. Chapter 14, Regional Economic, provides an analysis of impacts of alternatives for socioeconomics.
91-18	The EIS must analyze and address the impacts of over-appropriation on water reliability. Indeed water reliability goals must be tied to a realistic and historically supported quantification of the actual volume of consumptive water that is available once all laws	Analyzing the impacts of over appropriation on water reliability is not within the scope of this document. Please refer to Standard Response 4, Alternative Formulation, for a discussion on the purpose and need for the project.

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	including the public trust doctrine are met. Current and future biological opinions and the likely requirements of an updated WQCP also must be incorporated [Footnote 3: As upheld by the California Supreme Court's decision in National Audubon Society v. Superior Court 658 P.2d 709]. As two extensive analyses have documented the "face value" allocation of water rights exceeds historically available water volumes by a factor of five. [Footnote 4: See: https://static1.squarespace.com/static/59ee697fa9db0955b9b1c0ba/t/5c93cdf7ee6eb00b583b- b592/1553190403604/C-WIN-PaperWaterQuantification-FullTestimony.pdf accessed March 6 2023. Also see: https://static1.squarespace.com/static/59ee697fa9db0955b9b1c0ba/t/5ae4c73e-562fa7d97592e55b/1524942658756/UC+Davis+2014+Grantham+Water+Rights+in+CA.pdf accessed March 6 2023] This over allocation manifests as reduced water deliveries during dry conditions and it is a fundamental reason why the promised reliability SWP contractors has not materialized. [Footnote 5: See: https://static1.squarespace.com/static/59ee697fa9db0955b9b1c0ba/t/63b37a1cccee314b71898ab-f/1672706600680/C-WIN_SB-Report_2022.pdf accessed March 6 2023] Also while the CVP settlement and exchange contractors have senior water rights even those rights are subject to curtailment in declared emergencies. [Footnote 6: See: Stanford Vina Ranch Irrigation Company v. State of California (2020) WL 3396269 and https:// kmtg.com/news/legal-alerts/court-rules-water-code-section-1052a-did-not-allow-state-to-curtail-pre- 1914-water-rights-based-on-2015-drought-conditions/ accessed March 6 2023].	
91-19	The flow of the Colorado River is in permanent decline due to climate change. This secular hydrological change requires a thorough accounting of the negotiations and regulatory processes	Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and

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	relating to the river. It is reasonable to assume that California which uses the largest share of Colorado River water will be forced to reduce its use with a portion of that reduction directed to the Metropolitan Water District of Southern California (MWD). As a result MWD and its member agencies probably will accelerate regional supply projects through 2040 even if the DCP receives regulatory approvals and financing survives major lawsuits and construction begins in the coming five years. This likelihood reinforces our previous point on impact "cherry picking" between the Action Alternatives and the No Action Alternative.	construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons.
91-20	Finally while the EIS describes the expected outcomes resulting from implementing the Sustainable Groundwater Management Act (SGMA) (3.11-11) it draws the unsupported conclusion that notwithstanding SGMA requirements groundwater levels would decline further under the No Action Alternative due to increased groundwater pumping (3.11.2.2). However SGMA will be implemented whether the DCP is built or not; and if the DCP is not completed it is likely that additional land will be retired or shifted to low water use activities due to SGMA's groundwater basin sustainability requirements.	Please refer to Standard Response 5, Adequacy of the Analysis and Mitigation, for information on the adequacy of the analysis under NEPA.
91-21	The EIS defines the geographic scope for analysis too narrowly. While the EIS describes impacts across the entirety of the SWP and CVP delivery systems in the No Action alternative it limits its evaluation of the environmental im- pacts of the Action alternatives to the "legal Delta" for the most critical categories including environmental justice and socioeconomic effects. A project of the magnitude of the DCP would produce impacts both upstream and downstream of the physical infrastructure. These include the impact of the project on water affordability for disadvantaged communities impacts to upstream Tribal resources and recreational opportunities and the opportunity costs of a project estimated to require $16+ billion dollars in funding.	Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons.

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		Please refer to Chapter 2, Purpose and Need, for a description of the study area.
91-22	For a project that has water supply and cost implications for 27 million California residents and is predicated on increased supply reliability limiting the scope of impact analysis is both irresponsible and inconsistent with NEPA guidelines. (40 CFR 1502.14[b]).	Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons. Please refer to Standard Response 5, Adequacy of the Analysis and Mitigation, for information on the adequacy of the analysis under NEPA.
91-23	Moreover sufficient information exists to project economic impacts in SWP and CVP export areas. The Metropolitan Water District of Southern California has published an Integrated Resources Plan and 10-year budget outlook that include projected rate impacts without the DCP providing a basis for estimating DCP costs on its service area [Footnote 7: See: https://www.mwdh2o.com/how-we-plan/integrated-resource-plan/ and https://www.mwdh2o.com/media/17067/proposed-biennial-budget-rates-and-charges-ten-year-forecase-workshop-no-1-fi-committee-feb-10-2020.pdf?keywords=10%20year%20budget accessed March 6 2023]	Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons. Please refer to Standard Response 5, Adequacy of the Analysis and Mitigation, for information on the adequacy of the analysis under NEPA.
91-24	California's historic record confirms numerous disasters resulting from inadequate consideration of the broad geographic impacts of	Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental

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	water development and conveyance. One such case is meticulously documented in a C-WIN report on Santa Barbara's encounter with the SWP. The coastal city's experience with the cost overruns and water delivery shortfalls that resulted from connecting to the SWP bodes repeat performances on a much greater scale if the DCP is built: [Footnote 8: See footnote 5 for link]	or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons.
91-25	In 1991 Santa Barbara County residents voted to join the State Water Project. They were beguiled by State assurances that connection to the SWP would provide water security at a reasonable cost especially during catastrophic drought. Then reality intruded revealing the emptiness of the State's promises. Originally estimated at $400 million the price tag for the SWP's Coastal Branch Aqueduct ultimately spiraled to $575 million exclusive of operating costs. Actual deliveries have never met full "Table A" allocations. The shortage is particularly dire during droughts: the periods when the SWP was supposed to provide unassailable water reliability. Connection to the SWP has emptied the wallets of Santa Barbara's ratepayers and increased water insecurity forcing the county to pursue other options to ensure adequate water supplies including a desalination plant. Santa Barbara County suffered massive and negative impacts from the SWP even though it is considered outside the scope of the "legal Delta." As such the city's experience stands as an indictment of this EIS. The benchmarks of comprehensive socioeconomic analysis are established in federal and state guidelines and are critical to understanding the dynamic effects of funding the DCP. Any fair reasonable indeed legal analysis of the environmental impacts of the Project must encompass these principles. [Footnote 9: ECONorthwest Economic Critiques of the Delta Conveyance Project EIR December 12 2022.]	Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons.

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91-26	The EIS reaches unsupported conclusions regarding cumulative impacts. In Section 4.2 following descriptions of the resource commitments required for the DCP and its largest impacts the EIS concludes: "Benefits of the action alternatives would consist of increased water supply reliability and reliability for users in the SWP export service areas and greater resilience against risks to SWP operations as a result of climate changes and seismic risks. These and other benefits are expected to outweigh the commitments of these resources." There are multiple flaws with this conclusion: Since the EIS did not examine environmental justice and socioeconomic impacts to disadvantaged communities in the SWP export service areas it has no basis for concluding that these communities would experience increased water supply reliability. Even assuming there would be an increase in overall system reliability this benefit will not apply to low-income householders and small farmers who could not pay their water bills due to the extraordinarily high costs of the Project.	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP. However, please note that in this LTO Draft EIS, Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons.
91-27	Further the EIS and the EIR upon which it relies for much of its analysis do not demonstrate that system reliability would improve with the DCP; the cited errors and omissions of the underlying analysis militate against such an outcome. In particular while the DCP may provide better protection against seismic risk there is neither a guarantee nor a likelihood that it would deliver more water in the dry and extremely dry conditions that increasingly prevail due to climate change and the expected regulatory response that would restrict additional deliveries during such periods.	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP. However, please note that in this LTO Draft EIS, Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons.
91-28	There also exists the very real possibility the Project will end up as an extremely expensive stranded asset given its exceptionally high costs and the current regional supply and demand management	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP. However, please note that in this LTO Draft EIS, Alternative 2 considers the DCP

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	projects underway. A revised EIS must include a comprehensive socioeconomic and environmental justice analysis for every party who would be impacted by this project and its various components from the upstream dams to the terminus of the delivery system.	programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons.
91-29	Finally, the EIS ignores the public trust doctrine that establishes use priorities for all of California's public trust resources including water. As the California Supreme Court ruled in National Audubon Society v Superior Court the State Water Board must consider the impacts of allocation decisions on public trust resources when administering water rights. The court also identified ecological resources as one of "the most important" uses of public trust water. This EIS makes no attempt to analyze the impacts of the Project through the lens of the public trust doctrine nor does it recognize the State Supreme Court's ruling on the primacy of ecological services in the development and conveyance of public trust water.	Administering water rights is not within the scope of this EIS.
91-30	Specific Comments Climate Change impacts (Section 3.6). This section is incomplete. It ignores the climate change impacts of the project including operations outside the study area. While the EIS draws from the climate change analysis conducted for the EIR it does not present a full assessment of the ways changing hydrology will affect regulatory and water management decisions; it also ignores the inevitable consequences of those decisions on the DCP's operations. The EIS like the EIR fundamentally overstates the degree of reliability the Project would contribute to the state's water supply given ongoing aridification and upcoming regulations designed to improve water quality and protect public trust resources.	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP. However, please note that in this LTO Draft EIS, Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons.

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		Please refer to Standard Response 9, Climate Change, for the assumptions regarding climate change in the alternatives analyzed in the DEIS.
91-31	Our specific concerns with this section are: The discussion of salinity gradient (X2) requirements relies on the 1995 WQCP with no mention of the update process currently underway. This is a serious omission given the updated WQCP will almost certainly restrict deliveries to maintain salinity control as increased aridification and sea level rise push saline water further inland.	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP. However, please note that in this LTO DEIS, Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons. Please refer to Standard Response 11, Fall X2, for additional information on assumptions regarding the Summer Fall Habitat Actions in the alternatives.
91-32	We commend the EIS for using the H++ (worst case) scenario to evaluate potential sea level rise impacts. Given the importance of evaluating extreme scenarios it is unclear why a central tendency (instead of an extended extreme drought) was used for precipitation in Section 3.6-9.	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP. However, please note that in this LTO DEIS, Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons.

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91-33	The EIS states that the long-term reduction in SWP & CVP deliveries is projected at 7-10% (Section 3.6-11). But this projection is not consistent with projected increases in deliveries in dry and critically dry years (Section 3.22).	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP. However, please note that in this LTO Draft EIS, Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons.
91-34	The EIS contains no analysis of the actions the SWP & CVP would employ to manage trade-offs (and impacts) between environmental requirements (flow temperature etc.) and deliveries during extended dry periods.	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP. However, please note that in this LTO Draft EIS, Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons.
91-35	Environmental justice (Section 3.8) This section is incomplete because it ignores impacts to populations outside the study area. The study area is limited to the region that encompasses the Project's physical infra- structure; however, due to the cost of the Project and its impact on water affordability any environmental justice analysis must include impacts to upstream Tribes and downstream disadvantaged communities.	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP. However, please note that in this LTO Draft EIS, Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting

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		consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons.
91-36	The EIS claims that it is "too speculative" to estimate effects to environmental justice communities from project/no project environmental impacts. This claim is weak given it was not "too speculative" for the document to include analyses of dozens of future climate scenarios and predict impacts to environmental resources. The very nature of such an analysis in an EIS makes it somewhat speculative. However that is not an adequate excuse for avoiding impact evaluations that could cast the project in a negative light. (3.8-14)	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP. However, please note that in this LTO Draft EIS, Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons.
91-37	The EIS does not acknowledge Project impacts to recreation and subsistence fishing by environmental justice populations; also due to the exclusion of other EJ communities the only impacts described are those to agricultural workers resulting in a misleading impression that the Project will improve conditions for environmental justice communities.	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP.
91-38	Socioeconomics - Like other sections of the EIS the socioeconomic section is incomplete because it does not include impacts to populations upstream of the project and stakeholders who would receive water from the project. The sole description of socioeconomic impacts in the export areas is wholly one-sided; it only discusses adverse impacts in the No Action Alternative and only notes reliability benefits in export areas (3.17-33). This is completely irresponsible and inadequate to the purpose of an EIS given that the DCP is a $16+ billion project that would have	Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons.

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	significant impacts on water costs and affordability for disadvantaged communities.	
91-39	Water Supply (Section 3.22) Another inadequacy of the EIS is its failure to address DCP impacts to the Coordinated Operations Agreement between the SWP and CVP. The EIS characterizes the biological opinions issued by the federal fisheries agencies on the coordinated operations of the two projects as actions that may affect seasonal and long-term Delta water quality conditions (3.21-22). However, there is no evaluation of the impact of regulatory proceedings including future biological opinions on the Coordinated Operations Agreement and the exports of the two projects especially during dry and critically dry years. In fact, the EIS concludes in the Water Supply chapter: "The long-term average annual total CVP deliveries for all the action alternatives is expected to remain essentially the same. During dry and critical water years most action alternatives could result in increases in deliveries." (3.22-3) The EIS then states that CVP settlement and exchange contractors would see no change in deliveries because their water rights are "unaffected by the operations of the North Delta intakes." (3.22-3). Since the EIS does not evaluate operations there is no evidence or analysis to support this conclusion. Moreover. there is no discussion of the possibility of this scenario occurring under the current Coordinated Operations Agreement.	The DEIS Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons.
91-40	Inappropriate Lead Agency - The U.S. Army Corps of Engineers is the wrong lead agency for this EIS. It's clear the Corps was assigned its responsibility to ensure impact analyses were limited solely to construction; the potential impacts of operations on underserved stakeholders fish and wildlife are ignored. Another federal agency one more aligned with natural resources and public trust protections should be charged with drafting presenting and defending this EIS.	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP. The comment is specific for the EIS on Delta Conveyance Project for construction.

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91-41	In summary, the EIS wants to have it both ways. When assessing benefits it addresses the entire Project and its operations. But when evaluating impacts it limits the analytical scope claiming that operations are outside its purview. As written the EIS does a great disservice to California's people and environment. It must be revised to reflect both the letter and the spirit of NEPA and its implementing regulations.	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP. The comment is specific for the EIS on Delta Conveyance Project for construction.
91-42	[See Attachment 5]	Reference materials are noted, but they are not a material comment on this DEIS and are not directly applicable.
91-43	[See Attachment 6]	Reference materials are noted, but they are not a material comment on this DEIS and are not directly applicable.
91-44	[See Attachment 7]	Reference materials are noted, but they are not a material comment on this DEIS and are not directly applicable.
91-45	By this letter our public interest organizations add to the written comments we submitted on January 17 2024 and on February 16 March 14 March 30 and July 6 2023 on the U.S. Army Corps of Engineers Draft Environmental Impact Statement (EIS) on the California Department of Water Resources' (DWR) Delta Conveyance Water Tunnel Project. "There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." (NEPA Regulations 40 C.F.R. 1502.9(d)(1)(ii.) The significant new circumstances and information add to the new circumstances and information our organizations have previously called to your attention requiring the Army Corps to prepare a supplemental Draft EIS on DWR's Delta Conveyance Project. Issuing a Final EIS for the Project without having first issued a supplemental Draft EIS would violate the National Environmental Policy Act (NEPA.) The public interest organizations joining in this supplemental comment letter are Sierra Club California AquAlliance California Water Impact Network California Sportfishing Protection Alliance Center for Biological Diversity Environmental Water Caucus	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP. However, please note that in this LTO Draft EIS, Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons.

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	Friends of the River Planning and Conservation League and Restore the Delta..	
91-46	I. THERE ARE SIGNIFICANT NEW INFORMATION AND CIRCUMSTANCES CREATED BY THE EPA'S COMMENTS ON THE STATE WATER RESOURCES CONTROL BOARD'S SACRAMENTO/DELTA DRAFT STAFF REPORT On January 19 2024 the U.S. Environmental Protection Agency (EPA) issued a Comment Letter ("EPA Letter") to the California Water Resources Control Board on the Board's "Sacramento/Delta Draft Staff Report."[Footnote 1: Letter from Tomas Torres Director Water Division EPA Region 9 to State Water Resources Control Board Division of Water Rights Attn: Bay-Delta Hearings Branch Submitted via Email: [email address]] A copy of EPA's letter and its 14 page Enclosure EPA Comments on the September 28 2023 Draft Staff Report in support of updates to the Water Quality Control Plan for the San Francisco Bay-Sacramento-San Joaquin Delta Estuary for the Sacramento River and Delta watersheds ("EPA Comments") is attached as the Exhibit to this supplemental comment letter. DWR's proposed Delta Conveyance Tunnel Project would do the opposite of what the EPA says is required. The Project would significantly reduce Delta water flows and outflows. Instead according to the expert EPA Delta flows and outflows must be significantly increased to protect endangered and threatened fish species and also to protect public health. The Army Corps must prepare a supplemental Draft EIS disclosing the EPA's comments and also analyzing the impacts of project operations on the endangered and threatened fish species and also on the public health of Delta residents and users.	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP.
91-47	The Army Corps is the federal lead agency for the Project. (Draft EIS ES.1 p. ES- 1.) The National Marine Fisheries Service and U.S. Fish and Wildlife Service are cooperating agencies in the NEPA process for the Project. (Draft EIS Ch. 1 1.6.2 p. 1- 6.) The Army Corps must	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP. However, please note that in this LTO Draft EIS, Alternative 2 considers the DCP programmatically and recognizes that potential refinements, as

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	also obtain comments from the expert National Marine Fisheries Service and U.S. Fish and Wildlife Service given EPA's comments on the need to increase Delta flows --which is the opposite of reducing Delta flows-- for the subject Project to prevent the extinction of the endangered and threatened fish species. Also NEPA requires those two agencies to comment on the supplemental Draft EIS or Draft EIS if the Army Corps refuses to issue a supplemental Draft EIS.Our organizations July 6 2023 supplemental comment letter was devoted to the NEPA requirement that the Army Corps obtain the comments of the National Marine Fisheries Service and U.S. Fish and Wildlife Service on the Draft EIS. Our July 24 2023 letter to the Assistant Administrator for NOAA Fisheries and numerous other NOAA Fisheries persons was devoted to the NEPA requirement that the National Marine Fisheries Service comment on the Army Corps' Draft EIS. Our July 24 2023 letter to the Director of the U.S. Fish and Wildlife Service and numerous other Fish and Wildlife Service persons was devoted to the NEPA requirement that the Fish and Wildlife Service comment on the Army Corps' Draft EIS.	well as environmental or regulatory changes, may occur during the planning and construction period prior to initial Delta Conveyance Project operations. Future potential modifications would be considered in future project-level permitting consistent with the National Environmental Policy Act (NEPA) and the ESA. The programmatic analysis of the DCP does not render the rest of the analysis under Alternative 2 invalid if the project is not implemented for various reasons.
91-48	According to EPA "The State Water Board identified the need to comprehensively review and if necessary amend flow objectives in response to growing concern over deteriorating aquatic life conditions climate change and pelagic organism decline."(EPA Letter at 1.) Also "EPA notes that water quality standards for the waterbodies covered in this Staff Report were last updated in 1995 despite a Clean Water Act requirement that States consider and as appropriate make such updates at least once every three years. CWA 303(c)(1)." (EPA Letter at 1 fn. 1.)	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP.
91-49	EPA said with respect to fish species needs. The Staff Report along with previous State Water Board reports in which the State Water Board compiled and analyzed a significant amount of comprehensive scientific information recognize that substantially more flow is needed in the Delta and Sacramento-San Joaquin	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP.

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	watersheds to support aquatic life. Currently six fish species (Delta smelt longfin smelt green sturgeon Sacramento River winter-run Chinook salmon Central Valley spring-run Chinook salmon Central Valley steelhead) are listed or proposed as threatened or endangered under the Endangered Species Act. Scientific consensus indicates that native fish population abundance is positively associated with flow volumes (e.g. Jassby et al. 1995 Sommer et al. 1997 Mac Nally et al. 2010 Tamburello et al. 2019) and that largescale increases in both flow and habitat restoration are needed to recover and protect these and other native species. (EPA Comments at 1)(Emphasis added.)EPA recommends the State Water Board consider scientific studies published since the State Water Board's 2017 Final Scientific Basis Report was released in the final Staff Report to support draft plan amendments. Studies published after 2017 may refine the State Water Board's identification of critical flow thresholds that benefit native fish species and estuarine habitat. For example recent studies on flow-survival relationships for Chinook salmon in the Sacramento River and Delta provide scientific support for the positive relationship between flow and outmigration survival and recruitment of Chinook salmon including for late-fall fall and winter-run salmon (Michel 2019) late-fall run and spring-run smolts (Cordoleani et al. 2018; Henderson et al. 2019; Michel et al. 2021; Perry et al. 2018) wild origin salmon fry (Munsch et al. 2020) and winter-run juveniles (Hassrick et al. 2022). Furthermore since the 2016 draft Scientific Basis Report and the 2017 Final Scientific Basis Report identified a flow range of 11400-29200 cfs as protective of fish and wildlife uses for the February-June period recent research has demonstrated that even greater flow magnitudes over a period longer than February-June are needed to be protective of zooplankton populations (Hassrick et al. 2023) which are a foundational group in the food web to support species at higher trophic levels including listed salmonids.(EPA Comments at 3-4)(Emphasis added.)There is more. EPA also said As cautioned by the	

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	State Water Board: "flow and physical habitat interact in many ways but they are not interchangeable. The best available science suggests that current flows are insufficient to protect public trust resources. "Further scientific consensus indicates that native fish population abundance is positively associated with increasing flow volumes (e.g. Jassby et al. 1995 Sommer et al. 1997 Mac Nally et al. 2010 Tamburello et al. 2019) and that largescale increases in both flow and habitat restoration are needed to recover and protect these and other native species. Clearly flow is a critically important driver of the health of the Bay-Delta watershed. (EPA Comments at 6)(Emphasis added.)	
91-50	According to EPA, habitat restoration is not sufficient. This Staff Report does not demonstrate that suitable habitat area in the Sacramento and Delta watersheds is a limiting factor on estuarine and anadromous fish population growth nor does the Staff Report provide an adequate scientific rationale to demonstrate that habitat restoration assets will increase fish abundance without meaningful increases in tributary flows protected as Delta outflows. Any improvements in habitat will likely be achieved only if pursued alongside substantial increases in flow rates because flow is strongly and positively correlated with many indicators of native fish survival including for salmon survival out-migrating from natal tributaries (Michel 2019 Henderson et al. 2019) salmon survival in and through the Delta (Perry et al. 2018) and Delta Smelt post-larval survival (Polansky et al. 2021). Targeted habitat restoration with insufficient flow on the other hand is associated with low salmonid inhabitation (Munsch et al. 2020). (EPA Comments at 9)(Emphasis added.)	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP.
91-51	With respect to public health, EPA said The Bay-Delta and its watersheds have also experienced increased frequency of harmful algal blooms (HABs) affecting aquatic life and human health.Restoration of higher flow volumes may address key drivers of HABs including increased stream temperature and water	Harmful algal blooms are discussed in Section 9.3 of Chapter 9, Water Quality, and Appendix G, Water Quality Technical Appendix.

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	residence time (Kudela et al. 2023; Berg & Sutula 2015 Lehman et al. 2013). EPA reiterates that swift action is needed to address the imperiled state of the Delta and the species communities and economies that depend on this ecosystem for survival. (EPA Comments at 1-2)(Emphasis added.)	
91-52	Our organizations January 17 2024 supplemental comment letter pointed out that in glaring contrast to the needs to increase Delta outflows the Delta Conveyance Project would significantly reduce Delta outflows. (Sierra Club California et al. Supplemental Comment Letter at 13-14 January 17 2024.) EPA's Comments provide significant new information and circumstances requiring the Army Corps to prepare a supplemental Draft EIS.	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP.
91-53	II. THE SIGNIFICANT NEW INFORMATION AND CIRCUMSTANCES SET FORTH IN THE EPA'S COMMENTS ON THE STATE WATER RESOURCES CONTROL BOARD'S SACRAMENTO/DELTA DRAFT STAFF REPORT REQUIRE PREPARATION OF A SUPPLEMENTAL DRAFT EIS AND COMMENTS BY THE NATIONAL MARINE FISHERIES SEVICE AND U.S. FISH AND WILDLIF SERVICE. The NEPA Regulations require that(d) Supplemental environmental impact statements. Agencies:(1) Shall prepare supplements to either draft or final environmental impact statements if a major Federal action remains to occur and: (i)The agency makes substantial changes to the proposed action that are relevant to environmental concerns; or (ii)There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. (NEPA Regulations 1502.9(d)(1)(i) and (ii) (Emphasis added.) The significant new information in EPA's comments on the State Water Resources Control Board's Draft Staff Report constitutes significant new circumstances and information requiring preparation and publication of a supplemental Draft EIS by the Army Corps pursuant to NEPA Regulation section 1502.9(d)(1)(ii.)	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP.

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91-54	The case law under NEPA is as clear in this regard as the plain language of the supplemental EIS NEPA Regulations. The Supreme Court explained "The CEQ [Council on Environmental Quality] regulations which we have held are entitled to substantial deference [citations omitted] impose a duty on all Federal agencies to prepare supplements to either draft or final EIS's if there 'are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.'" (Marsh v. Oregon Natural Resources Council 490 U.S. 360 372 (1989); see also Friends of the Clearwater v. Dombeck 222 F.3d 552 557-558 (9th Cir. 2000.) The Ninth Circuit has explained "Given the limited public input opportunities attendant to the issuance of a final EIS satisfying this directive" requiring agencies to submit proposed actions for public comment prior to making a final decision requires a supplemental draft EIS when necessary to allow outside reviewers to give meaningful consideration to the environmental issues involved. (State of California v. Block 690 F.2d 753 770 (9th Cir.1982.) (Requiring preparation and circulation of a supplemental draft EIS.) See also Sierra Club v. U.S. Army Corps of Engineers 701 F.2d 1011 1034-1035 (2d Cir. 1983)(Upholding district court ruling that the Army Corps or the Federal Highway Administration prepare a supplemental or amended EIS on fisheries issues.)	Significant new circumstances have not been identified by the commenter.
91-55	The purpose of NEPA the NEPA Regulations and the NEPA cases are clear. The Army Corps must prepare a supplemental Draft EIS so the public will have the opportunity to review and comment on the assessment of the environmental impacts of Project operations on listed fish species and public health that must be but was not provided by the Draft EIS.	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP.
91-56	Moreover the information in EPA's comments regarding the need to increase flows to protect endangered and threatened fish species accentuates the violation by the Army Corps of NEPA's requirement to obtain the comments of the expert National Marine Fisheries	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP.

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	Service and the U.S. Fish and Wildlife Service on the Draft EIS. (42. U.S.C. 4332(2)(C); 40 C.F.R. 1503.1(a.) That violation was a subject of our organizations supplemental comment letter of January 17 2024 (at 29) and the subject of our organizations supplemental comment letter of July 6 2023. (at 1-11.) The Army Corps has a duty under NEPA to obtain the comments of the Fisheries Service and the Fish and Wildlife Service on the Army Corps' Draft EIS. And the Fisheries Service and Fish and Wildlife Service have duties under NEPA to comment on the Draft EIS. The District of Columbia Circuit explained in Nevada v. Department of Energy 457 F.3d 78 89 (D.C. Cir. 2006)	
91-57	NEPA imposes a duty on the agency to consult with and obtain written comments from the appropriate federal agencies. See 42 U.S.C. 4332(2)(C); Warm Springs Dam Task Force v. Gribble 621 F.2d 1017 1022 (9th Cir.1980) ('[T]he statute imposes on the agency a duty to obtain written comments.'). And the CEQ regulations implementing NEPA not only require the proposing agency to 'obtain the comments' of federal agencies with jurisdiction and/or expertise see 40 C.F.R. 1503.1(a)(1) but also affirmatively require those agencies to comment see 40 C.F.R. 1503.2. See Warm Springs Dam Task Force 621 F.2d at 1022. The Ninth Circuit held "the Corps violated NEPA by not obtaining the written official comments of USGS [U.S. Geological Survey] on the Draft S-EIS. (Warm Springs Dam Task Force 621 F.2d 1017 1022.) The Court explained in Warm Springs Dam Task Force 621 F.2d 1017 1021 But informal consultation alone is not sufficient compliance with the statute. Section 4332(2)(C) [of the NEPA statute] requires each agency possessing special expertise to comment in writing on its official view of the environmental consequences of the proposed action. This requirement is essential to maintain the integrity and regularity of the decision making process. By requiring the commenting agency to take an official position even if it be 'no comment' Congress encourages the agency to direct the draft EIS for study to	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP.

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	those personnel within its organizational structure most likely to bring to light any additional facts that should be considered or to raise any reasoned disagreement with the draft's conclusions. Regular review procedures are thereby established. If the proposing agency could comply with the statutory requirement merely by selecting individuals within the commenting agency to serve as consultants as the Corps suggests there would be too great a risk that the only individuals contacted would be those the proposing agency considered most likely to support its proposal. Some official consideration by the independent 'expert' agency is clearly called for.	
91-58	NEPA Regulation 1503.1 requires in pertinent part (a) After preparing a draft environmental impact statement and before preparing a final environmental impact statement the agency shall: (1) Obtain the comments of any Federal agency that has jurisdiction by law or special expertise with respect to any environmental impact involved or is authorized to develop and enforce environmental standards. (Emphasis added.) So the Corps must obtain the comments of the National Marine Fisheries Service and U.S. Fish and Wildlife Service on the Draft EIS. And those two agencies must comment on the Draft EIS and Supplemental Draft EIS before the Corps issues a Final EIS on the Delta Conveyance Project. (40 C.F.R. 1503.2.) [Footnote 2: NEPA Regulation section 1503.2 requires in pertinent part "Cooperating agencies and agencies that are authorized to develop and enforce environmental standards shall comment on statements within their jurisdiction expertise or authority within the time period specified for comment in 1506.11 of this chapter." (Emphasis added].	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP.
91-59	Instead of carrying out their prescribed duties under NEPA to comment in writing on the Draft EIS the Fisheries Service and Fish and Wildlife Service are simply standing by doing nothing and saying nothing in public. The public including Delta residents and	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP.

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	users whose health is threatened by the Project and persons concerned about the threatened extinction of endangered and threatened fish species is entitled to know and comment on the issues raised by the expert EPA's comments. The public is also entitled to know the views of the expert National Marine Fisheries Service and U.S. Fish and Wildlife Service given EPA's comments.	
91-60	CONCLUSION The U.S. Army Corps of Engineers is the federal lead agency for NEPA review of DWR's massive proposed water project. Four other federal agencies including the Fisheries Service and Fish and Wildlife Service are NEPA cooperating agencies in the NEPA process. The only EIS to be prepared for this massive Project is the Army Corps' EIS. The Army Corps must prepare and publish a supplemental Draft EIS covering Project operations and the significant new circumstances and information since the Draft EIS was issued including impacts on listed fish species and public health.	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP.
91-61	The National Marine Fisheries Service and U.S. Fish and Wildlife Service must comment on the supplemental Draft EIS or the Draft EIS if the Army Corps refuses to issue a supplemental Draft EIS. The supplemental comments must disclose and analyze the issues involved in the Project significantly reducing flows whereas the EPA and the Water Board Staff Report say flows must be significantly increased.	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP.
91-62	EXHIBIT: EPA Comments on the September 28 2023 Draft Staff Report in support of updates to the Water Quality Control Plan for the San Francisco Bay-Sacramento- San Joaquin Delta Estuary for the Sacramento River and Delta watersheds (January 19 2024)	This is not a comment on the EIS for the Coordinated Long-term Operations of the CVP and SWP.
91-63	[See Attachment 9]	Reference materials are noted, but they are not a material comment on this DEIS and are not directly applicable.
91-64	[See Attachment 10]	Reference materials are noted, but they are not a material comment on this DEIS and are not directly applicable.

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91-65	[See Attachment 11]	Reference materials are noted, but they are not a material comment on this DEIS and are not directly applicable.

Table 4-92. Letter No. 92

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92-1	We are commenting on the EIR for the long-term operations of the CVP and SWP as a state agency with an interest in the best outcomes for the Sacramento-San Joaquin Delta. Our mandate is to protect the agricultural and natural resource land uses of the Delta consistent with the Delta Protection Act (California Public Resources Code Section 29702).	Reclamation appreciates comments and review for interested parties.
92-2	Our primary comment is that greater analytical work and mitigation may be required to support the significance conclusions provided in the DEIS. Your analysis states that under alternatives 2 and 3 agricultural acreage under production may be reduced because of reduced exports (DEIS 15-8). You further state that under Alternative 2B (the preferred alternative) that an increase in the operational period of Clifton Court Forebay would increase as follows: "Alternative 2B includes an extension of the CCF operation period to December 1 through March 31 from mid-December through mid-March effectively increasing the operation of the SWP by one month." (DEIS 15-10).To offset the potential reduction in agricultural acreage you offer the following mitigation measure acknowledging it may not be adequate: "Mitigation Measure AG-1: Diversify Water Portfolios - Water agencies should diversify their water portfolios. Diversification could include the sustainable conjunctive use of groundwater and surface water, water transfers, water conservation and efficiency upgrades and increased use of recycled water or water produced through desalination where available" (DEIS D-36).The DEIS further states "Alternatives 1 through 4 could reduce agricultural land. The mitigation measure below relies on entities other than Reclamation to implement the measures. Because Reclamation	The information provided is an accurate representation of information in the DEIS.

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	does not have authority to implement this measure, Reclamation cannot ensure that it will be implemented" (DEIS 15-10).	
92-3	We strongly encourage the following analysis and content for the Final EIS: Provide a more robust distinction of the geographic locations where agricultural acreage reductions associated with all alternatives would occur.	To determine changes in irrigated agricultural acreage, the Statewide Agricultural Production (SWAP) model was used. The SWAP model is a regional model of irrigated agricultural production and economics that simulates the decisions of producers (farmers) in 27 agricultural subregions in the Central Valley, as described in Appendix Q, Regional Economics, Attachment 3, *Statewide Agricultural Production (SWAP) Model Documentation*.
92-4	If the preferred alternative or any other alternative would reduce agricultural acreage loss in one region (such as the Central Valley) but increase it in another (such as the Delta) provide an analysis that shows that distinction.	Appendix R, Land Use and Agricultural Resources, provides the regional changes in irrigated agricultural acreage by alternative. To determine changes in irrigated agricultural acreage, the Statewide Agricultural Production (SWAP) model was used. The SWAP model is a regional model of irrigated agricultural production and economics that simulates the decisions of producers (farmers) in 27 agricultural subregions in the Central Valley, as described in Appendix Q Regional Economics, *Attachment 3 Statewide Agricultural Production (SWAP) Model Documentation*. Attachment 3 includes a summary of recent uses of SWAP for modelling and impact assessments of water operations and drought effects. SWAP evaluates effects for subregions 1 through 21c, then results are aggregated into larger groups of regions for further economic analysis and display of results in the appendices. SWAP subregions one through nine are aggregated as Sacramento Valley and subregions 10 through 21c are aggregated as San Joaquin Valley. A large majority of the Delta is included in subregions six through nine, and therefore, aggregated into the Sacramento Valley. A small portion of subregion 10 is also in the Delta.

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		As illustrated in Appendices Q Regional Economics Appendix Land Use, most of the variation in project water delivery among alternatives falls on the San Joaquin Valley. Particular subregions affected are those encompassing SWP and CVP agricultural water contractors receiving project water exported from the Delta: subregions 10, 14, 15, 19, 20, and 21 (including any subdivisions a, b, and c of those subregions). Some CVP agricultural water contractors in the Sacramento Valley are also affected by variations in water delivery among alternatives, though generally to a lesser degree than contractors in the Delta export subregions. Because SWAP is an economic model, it also estimates regional changes in crop revenue resulting from price changes caused by regional production changes. The size of the price effect varies by crop according to underlying market conditions. As a result, alternatives that result in a reduction in production in one region, such as the Delta export areas of the San Joaquin Valley, can induce beneficial price effects in other regions such as the Sacramento Valley or portions of the San Joaquin Valley not subject to Delta export water supply changes. So, if an alternative reduces Delta export supply relative to the No Action Alternative, crop production in those subregions contracts and other relatively unaffected subregions can benefit. Conversely, if an alternative (e.g., Alternative 1) increases delivery to Delta export areas relative to No Action, the increased production slightly reduces crop prices, resulting in a reduction in revenue to other areas. For impacts outside the area modeled, specifically the Trinity River, San Francisco Bay Area, Central Coast, and Southern California regions, as well as impacts from actions that were not modeled in SWAP, impacts on agricultural resources were

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		evaluated qualitatively using the results of CalSim 3 modeling for agricultural water deliveries.
92-5	Adopt more robust mitigation than the current Measure AG-1.	Please refer to Standard Response 5, *Adequacy of Analysis and Mitigation,* regarding Reclamation's process of developing and approving the ROD using the appropriate mitigation measures discussed in the EIS. Please also refer to Appendix D, Mitigation Measures, regarding discussions of how Mitigation Measure AG-1 could be implemented.
92-6	If the analysis triggers any of the conditions in 40 CFR Section 1502.9 we encourage you to prepare a supplemental DEIS to fully satisfy the requirements of NEPA.	Reclamation adequately analyzed agricultural resources. Please refer to Standard Response 5, Adequacy of Analysis and Mitigation, regarding adequacy of the analysis contained in the EIS and the NEPA requirements for supplementation. Reclamation is a federal agency and follows applicable federal laws and regulations.
92-7	We also Encourage Additional Content and Clarity for Mitigation Measure WQ 1 - Water quality is at the heart of the analytical policy and legal issues with water management in California. Specifically exports south of the Delta decrease water that can flow through the Delta and protect Delta water quality for in-stream beneficial uses and water rights holders that divert Delta water. USBR identifies Mitigation Measure WQ-1 as part of its palette of mitigation options to control water quality. Given the magnitude of potential effects and the scale of the operations we feel that more detail regarding WQ-1 is required. The current text consists of a single paragraph that defers both the analysis of what mitigation and monitoring would occur and how that information affects the ultimate effect of the proposed action. See the text of WQ-1 below:"Mitigation Measure WQ-1: Develop a water quality mitigation and monitoring program - A program shall be developed and implemented to reduce minimize or eliminate increases in water quality constituents. The program will	As part of the mitigation measures, Reclamation also included avoidance measures related to water quality within each of the alternatives. Measures would include agricultural barriers, monitoring water quality, consideration of drought management actions, and an adaptive management program (e.g., see Appendix E, Alternatives, Section E.2.4.6, Agricultural Barriers, and Sections E.5.10, Monitoring, E.5.15, and Drought, E.5.17, Adaptive Management, under Alternative 2). Additionally, special studies are underway as part of the No Action Alternative and are proposed as part of the drought management for Alternative 2.

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	develop a monitoring plan including frequent sampling and reporting particularly for existing constituents of concern. Reclamation will coordinate with the implementation of current TMDLs to share monitoring information and contribute to the efforts to reduce constituents of concern. Efforts could include water quality (through the water column) soil and fish and invertebrate tissue monitoring" (DEISD-2).	